Decoding Information Flow in Fund Families: Evolution, Drivers, and Impacts

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Abstract

This paper introduces a novel measure to assess the level of information dissemination within fund families, based on the difference between external divergence (divergence relative to other families) and internal divergence (divergence among funds within the same family) in their buying decisions. The study investigates the evolution of information dissemination levels over time and explores managerial characteristics that enhance stronger information flow. The findings reveal a declining trend in information dissemination within fund families over the years, with higher information flow observed in families characterized by greater managerial interaction (families with fewer single-managed funds, more co-managed funds, and a higher average number of managers per fund). Finally, the paper examines the financial consequences of the information flow within families. The results indicate that greater internal dissemination negatively impacts family performance and subsequent investment flows, likely due to a reduced perception of exclusivity in investment strategies and weakened incentives for managerial innovation.

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1. Introduction

The dissemination of information within organizations plays a crucial role and can yield significant benefits by substantially enhancing productivity. Rapid information sharing enables employees to quickly access relevant data, improving decision-making processes and allowing organizations to adapt immediately to market changes. This capability can lead to more efficient supply chain management, shorten product development cycles, and enhance overall performance. Consequently, information sharing is often regarded as a critical strategy for maintaining a competitive edge (see, e.g., Vaz et al., 2018; Oliveira et al., 2020). However, speed alone is insufficient; the depth and quality of the information shared are equally important. Superficial or incomplete data can result in poor decision-making, as the true value of information lies in its effective use and the provision of adequate detail for strategic decision-making.

While making information readily accessible can have benefits, it may also present certain drawbacks. For instance, it can create "free-riding" incentives, where some members of an organization benefit from others' contributions without reciprocating effort, thereby diminishing individual motivation and overall productivity (Cabrera and Cabrera, 2002). Additionally, information overload is a potential risk, where the sheer volume of data overwhelms employees, impairing their ability to process it effectively (Bawden and Robinson, 2009).

Although the impact of information sharing on organizational performance has been examined in the management literature. (see., Cabrera and Cabrera, 2002; Yang 2007; Wang et al. 2014; Vaz et al., 2018; Ahmad and Huvila 2019; Oliveira et al., 2020; Azeem et al., 2021), it remains relatively underexplored in financial studies. Only the work of Cici et al. (2017) has analysed the consequences of the speed of information diffusion within the mutual fund industry.

The mutual fund industry offers a unique environment to study the determinants and consequences of the information dissemination. First, mutual funds are structured within larger organizations, commonly known as fund families, which facilitates the study of information flows within and across fund families. Second, as stated by Cici et al. (2017), fund managers' trading activities in response to new information provide a unique opportunity to observe and measure the speed of information dissemination. Unlike corporations, where unit-level data is often unavailable, the transparency regulations in financial markets, such as portfolio holdings disclosure, ensure the availability of detailed tracking of trades, offering a clearer view of how information

flows internally and making the mutual fund industry an ideal setting for investigating the interplay between information dissemination and organizational performance. Third, the performance of mutual funds is directly observable and measurable, making it possible to assess the tangible effects of information diffusion on fund outcomes. This characteristic distinguishes mutual funds from other industries, where performance may be more challenging to quantify. In addition to these advantages, funds within a family collaborate by sharing resources and research while competing to attract money flows, providing a dynamic environment to study how collaboration in information sharing enhances decision-making and overall performance.

Cici et al. (2017) consider that a high information diffusion within fund families would imply that different fund managers within the family make similar trading decisions simultaneously while a slow information diffusion would result in a gradual spread of information and fund managers would make sequential decisions. These authors identify events that imply the introduction of new information within the fund family. The clearest example of introducing new information is the purchase of a stock that was not previously in the family funds' portfolios, that is, the initial purchase of a security by one fund of the family. After the inclusion of a new company in the portfolio of one fund, it is essential to explore whether the rest of the funds managed by that family also make the same decision in this company and the speed to take the decision. They find that the speed of information diffusion within mutual fund families positively affects fund performance and suggest that fund families could improve the performance of their member funds by removing barriers that slow down information transfers within their organization.

In this study, we propose a new measure to capture the level of dissemination of information within fund families. Unlike Cici et al. (2017), our objective is not to analyse the speed of information, but rather the degree to which information is shared among funds managed by the same family. Our measure quantifies information dissemination within fund families by examining the level of divergence in all buying decisions among funds within a family, relative to the divergence observed between those funds and funds from other families.

Cici et al. (2017) analyse purchases of stocks that were not previously in a fund family's portfolio. Since these purchases are initial at the family level, the number of events could be scarce and most of them could take place in small-cap stocks which

represent a small portion of the market. Hence, they may not provide a complete view of information dissemination.

Another important and distinctive element is that we use the trading behaviour of funds from other fund families as a control group-to determine whether the disseminated information is internal to the family or, alternatively, stems from external factors that are also known by other families.[1] If no differences are observed between funds from different families, it suggests that managers across fund families have access to the same information and reach similar conclusions. Conversely, any observed differences would indicate variations in how information is interpreted or shared between funds within the same family compared to those in different families.

We firstly obtain the monthly information dissemination level within fund families from January 2000 to June 2022 to study the evolution of this phenomenon.[2] The results suggest that the level of information dissemination shows a decreasing trend. Furthermore, the Bai-Perron test reveals two key breakpoints in the evolution of information dissemination: December 2007 and December 2012.

Secondly, we provide insights into the determinants underlying the superior information dissemination within certain fund families. Specifically, we examine the influence of the level of interaction among managers within the family as well as the characteristic of the funds and managers. The results indicate that the level of information dissemination is higher in fund families where managers interact more frequently, suggesting that a collaborative environment enhances communication and decision-making.

Finally, we examine the financial consequences of information sharing. In contrast to the findings of Cici et al. (2017), our results show that internal information dissemination within families has a negative and significant impact on family

[1] The inclusion of a security in the index followed by funds with a specific investment focus often results in multiple funds within the same family incorporating that security into their portfolios. According to the measure proposed by Cici et al. (2017), this behaviour would be interpreted as "speed of information." However, our measure, which examines not only the trading decisions of funds within a single family but also compares them to those of other funds, reveals that, in general, a significant majority of funds make the same trading decision regardless of the fund family to which they belong. This suggests that such behaviour stems from a specific market event, widely known across fund families, rather than from the internal dissemination of differential information within a specific family or the identification of a unique investment opportunity.

[2] By information dissemination, we refer to the observable spread of information through managers' trading activities. However, the actual level of information dissemination could be higher, as managers might choose to disregard some of the information circulated within the family when making their trading decisions.

performance, indicating that a competitive environment enhances performance (Kacperczyk and Seru, 2012; Simutin, 2013; Evans et al., 2020). Additionally, the results also suggest that the level of internal information dissemination within fund families negatively influences subsequent flows, possibly due to a reduced perception of exclusivity in investment strategies.

Our paper contributes to several strands of literature. First, our study contributes to the literature on correlated trading and cross-trading among affiliated mutual funds. Elton et al. (2007), Pool et al. (2005) and Andreu et al. (2022) document a higher degree of overlap in holdings among funds within the same family compared to those from different families. Other studies also provide empirical evidence of cross-trading within fund families (Gaspar et al., 2006; Chuprinin et al., 2015). While previous studies have analysed portfolio overlap and cross-trading, our research emphasizes how a higher degree of information dissemination within fund families leads to less divergent decision-making among funds within the same family compared to those in other families.

Second, we add to the literature that examines fund family characteristics that enhance the dissemination of information in the mutual fund industry. Evans et al. (2020) find that cooperative families stand out for fostering collaboration among managers and their funds. These families are usually managed by teams with a high level of interconnection among managers within the family. In this line, Pool et al., (2017) study individual biases in portfolio managements, such as familiarity with local companies, and they find that it is lower in fund manager teams due to the interaction among managers facilitates knowledge sharing. This paper also concludes that the likelihood of managers sharing information is higher in fund families with team-managed funds due to each manager contributes their ideas to the portfolio. Furthermore, Cici et al. (2027) find that fund families with a higher information diffusion speed are characterized by a lower proportion of externally managed funds, fewer managers, and high interconnectedness among them. We contribute to this literature by demonstrating that some fund families exhibit a significantly higher level of information dissemination than others and, that this level of dissemination is significantly higher is those families with a higher level of interaction between their funds and managers.

Third, our paper contributes to the literature that explores how the organization of fund families influences fund performance and flows. Cici et al. (2017) show that the speed of information diffusion within mutual fund families positively affects fund performance and suggest that fund families could improve the performance of their

member funds by removing barriers that slow down information transfers within their organization. However, other studies document the benefits of competitive environments. Funds within a family often behave not as coordinated partners but as competitors that attempt to dominate the family to enjoy benefits that belong to the top performers (e.g., Kempf and Ruenzi, 2008a). Specifically, top-performing funds experience unusually high inflows (Kempf and Ruenzi, 2008b), and benefit from other forms of favouritism within the family (e.g., Nanda et.al, 2004; Gaspar et al., 2006; Bhattacharya et al., 2013).

Furthemore, Kacperczyk and Seru (2012) show that funds from decentralized families outperform those from centralized ones. Simutin (2013) also finds that fund managers who actively deviate from the "average" portfolio of other funds in the same family significantly outperform managers who passively mimic their family's portfolio, showing that deviation from a family portfolio is a new dimension of active management. The author argues that it captures superior managerial skill. Similarly, Evans et al. (2020) show that competitive incentives result in higher average performance consistent with either incentivizing greater effort of managers or attracting managers with higher ability. Our contribution to this literature lies in demonstrating that a fund family's organizational structure, which fosters greater dissemination of investment ideas, negatively impacts performance by diminishing managers' incentives to identify new investment opportunities. Similarly, to Fang et al. (2014), who demonstrate that fund families allocate more skilled managers to less efficient market segments where skill is more rewarded, we show that families act rationally by progressively reducing the degree of information dissemination within the family because a high dissemination has a significant negative impact on the overall performance of the families.

The findings of this study have significant implications for fund families, investors, and managers. With respect to fund families, our results suggest that high levels of information dissemination among fund managers can negatively impact the performance of their constituent funds. Excessive information sharing may lead to redundancies, reduced individual accountability, and potential free-riding, which could hinder overall performance. For investors, these insights indicate that fund families with less interconnected structures may yield better returns, as they allow for more independent decision-making. For fund managers, it is important to focus on strengthening their individual expertise and decision-making processes rather than overly relying on shared information. By maintaining a level of independence in their strategies, fund managers

can mitigate the potential downsides of excessive information dissemination and contribute to improved performance.

The rest of the paper is organized as follows. Section 2 explains the data and measure of the information dissemination. Section 3 and Section 4 study the evolution and persistence of the information dissemination. Section 5 focuses on the determinants of this phenomenon. Section 6 and Section 7 focus on the consequences on family performance and flows, respectively. Section 8 includes robustness analyses and Section 9 concludes.

2. Data and measures of information sharing

2.1 Data

Our database comprises Euro equity mutual funds domiciled in Spain according to the Securities and Exchange Commission (CNMV) during the period January 2000 - June 2022. The database includes information on all monthly portfolio holdings up to December 2006 from the CNMV database. From that date onwards, the CNMV only reports quarterly portfolio information. Therefore, since January 2007, the quarterly CNMV portfolios have been complemented with monthly portfolios from the Morningstar Direct database when such information was available. The information matching of the different databases is done using the ISIN code of each fund and/or stock.

The initial sample comprises 326 Euro equity mutual funds belonging to 115 different management companies. The database is free from survivorship bias since it includes dead funds. However, the analysis will focus solely on funds managed by companies that operate at least two funds during the sample period. As a result, the final sample consists of 286 funds across 68 fund families.

The size of the funds, their fees, age, as well as the family to which each fund belongs, have been obtained from the CNMV database. Financial information regarding the price, return, and market capitalization of the stocks held by each fund has been obtained from the Refinitiv-EIKON database.

Table 1 reports the summary statistics of the sample. This table shows several key trends in funds families over the period analyzed. We observe a decline in the number of families indicating consolidation within the sector and a decline in the percentage of families that belong to a banking or insurance group (*bank-families*). This effect is also related to the severe merging process of the banking system in the Spanish market in recent decades.

Regarding the family characteristics, the average family size increases significantly in 2014, and it stabilizes in 2022, while their age grows steadily. Gross returns show a downward trend, with a notable loss in 2022, and flows also show significant changes, with a positive peak in 2014 followed by negative flows in 2022.

Over time, families also seem to increase the number of managers per fund and the proportion of funds with common managers. Regarding the proportion of male managers compared to female managers is slightly higher every year. We also observe that the average experience of managers has shown a slight increase, stabilizing around 8 years.

(Please, Insert Table 1, around here)

2.2. Measures of sharing information

We assess the level of information sharing within a fund family using the trading divergence measure (hereafter *TD*), proposed by Gimeno et al. (2022). A higher degree of shared information between two funds within the same family corresponds to a lower level of divergence in their trading activities.

First, the level of TD by each pair of funds *i* and *j* in stock *s* in month *m* is calculated through the following expression:

$$TD_{i,j,s,m} = \frac{|t_{i,s,m}-t_{j,s,m}| - ExcTD_{i,s,m} - ExcTD_{j,s,m} - FTD_{i,j,s,m}}{Max\ |B_{i,j,s,m}| + Max\ |S_{i,j,s,m}| - ExcTD_{i,s,m} - ExcTD_{j,s,m}} \qquad \forall\ i \neq j \qquad (1)$$

where $TD_{i,j,s,m}$ represents the trading divergence level between funds *i* and *j* for stock *s* in month *m*, $t_{i,s,m}$ and $t_{j,s,m}$ are the percentages of trading conducted by funds *i* and *j*, respectively, for stock *s* in month *m*. $ExcTD_{i,s,m}$ and $ExcTD_{j,s,m}$ are the excess trading of fund *i* and fund *j* for stock *s* in month *m*, which cannot be executed by the other fund (*j* and *i*, respectively) due to previous portfolio positions (an investment fund cannot sell more shares than it holds in its existing position).[3] $FTD_{i,j,s,m}$ (False Trading Divergence) is the divergence value between the trading decisions made by funds *i* and *j* in stock *s* in month *m* when these decisions, although different, result in more similar portfolios between the two funds. $Max\ |B_{i,j,s,m}|$ is the higher weight of the buying decisions between fund *i* and fund *j* for the stock *s* in the month *m*. $Max\ |S_{i,j,s,m}|$ is the higher weight in

[3] A fund *i* has been able to sell 5% in a security, while another fund *j* has only sold 3% in the same security. However, if fund *j* has a prior position in this security equal to 3%, this fund has sold the maximum it could. The difference between the 5% and the 3%, in this example, the 2%, is considered excess trading since fund *j* could not execute further sales, even if there was a willingness to sell in a larger proportion.

absolute value of selling decisions between fund *i* and fund *j* for the stock *s* in the month *m*.

Second, the TD level is calculated for each fund *i*, in each stock *s*, in each month *m* in two different ways: (1) by averaging the TD obtained when the fund is compared with other funds belonging to the same family *f* (equation 2), this level is referred to as intra-family TD, and (2) by averaging the TD obtained when the fund is compared with other funds belonging to different families (equation 3), this level is referred to as inter-family TD.

$$Intra-family\ TD_{i,s,m}=\overline{TD_{i,j,s,m}} \qquad \forall\ i\neq j \quad y \quad \forall i,j\in f \qquad (2)$$

$$Inter-family\ TD_{i,s,m}=\overline{TD_{i,j,s,m}} \qquad \forall\ i\neq j \quad y \quad \forall i,j\notin f \qquad (3)$$

The divergence level in the trading of funds within the same family (intra-family TD) should be lower than the divergence level when comparing funds of a given family with funds managed by other fund families (inter-family TD), as there is no possibility of sharing information in the latter case.

Third, we calculate the difference between the inter-family TD and the intra-family TD for each fund in each stock in each month for those stocks in which fund *i* buys:

$$TD\_Dif_{i,s,m}=Inter\text{-}family\ TD_{i,s,m}-Intra\text{-}family\ TD_{i,s,m} \qquad (4)$$

where *Inter-family* $TD_{i,s,m}$ is defined in equation 3, and *Intra-family* $TD_{i,s,m}$ is defined in equation 2.

Fourth, we calculate the TD difference for each fund *i* in each month *m* by averaging $TD\_Dif_{i,s,m}$ (equation 4) as following:

$$TD\_Dif_{i,m}=\overline{TD\_Dif_{i,s,m}} \qquad (5)$$

Finally, we calculate the TD difference for each family *f* in each month *m* by averaging $TD\_Dif_{i,m}$ (equation 5) for all funds *i* managed by family *f*.

$$TD\_Dif_{f,m}=\overline{TD\_Dif_{i,m}} \qquad \forall i\in f \qquad (6)$$

High values of $TD\_Dif_{f,m}$ would capture fund families in which the funds of the family are making similar trading decisions (sharing information), but those decisions are different from what funds from other families are doing. On the contrary, small values of $TD\_Dif_{f,m}$ would capture little information diffusion because funds within the family show similar divergence levels when compared to their competitors. Therefore, there seems to be no special transmission of information at the internal level.

3. Evolution of the information diffusion and comparison among families.

In this section, our goal is to assess whether there are statistically significant differences in the level of information dissemination among fund families and whether the level of information dissemination within fund families remains constant over time.

Kacperczyk and Seru (2012) consider the coexistence of two different organizational structures: centralized and decentralized. Similarly, Evans et al. (2020) also provide evidence of the coexistence of cooperative and competitive families in the US mutual fund industry. Therefore, we test the following hypothesis:

H1: There are significant differences between the information dissemination level of different fund families.

Regarding the evolution of the level of information dissemination within fund families, the Spanish investment fund industry has exponentially grown over the past decades and this growth has resulted in a larger number of fund managers competing for a limited pool of investors. This competitive environment in the fund industry has led fund families to offer a more diverse range of mutual funds, catering to various investor preferences and risk tolerances, which helps attract and retain investors while increasing market share (Gavazza, 2011). As a result, the competition has led to a decline in portfolio overlap over time (Arjoon and Bhatnagar, 2017; Shantha, 2019; Bekiros et al., 2017; Delpini et al., 2019) and to an increase in TD among funds (see, e.g., Gimeno et al., 2022), with this increase being particularly pronounced among funds within the same family than across different families. Hence, we expect the TD_Diff metric (difference between TD inter and intra) to exhibit a declining trend over time, indicating a reduction in the level of information dissemination within fund families. Specifically, our second hypothesis is as follows:

H2. The information dissemination within fund families decreases over time.

Table 2 shows the evolution of the information dissemination within fund families over the time period analysed. The table also split these figures into families with a high or low level of information diffusion considering quintiles.

(Please, Insert Table 2, around here)

Table 2 shows that the average information dissemination in the Spanish fund families with Euro equity mutual funds over the period 2000-2022 is equal to 8.74%. while the level-for fund families-in the top quintile (Q1) and those in the bottom quintile (Q5) is 37.41% and 1.16%, respectively, with a difference of 36.25% statistically significant at the 1% level. These results support our first hypothesis, suggesting that

some families have a significantly higher level of information dissemination than others. The findings also support our second hypothesis, showing a decrease in the level of information dissemination over time, from 10.33% in 2000 to 1.69% in 2022,[4] particularly among funds within the family (as evidenced by the increasing trend of *TD_Intra*).

Next, we examine the evolution of information dissemination within fund families through a static panel data regression to take into account the market conditions (market return and market stress) given that previous literature has documented that these conditions affect the behaviour of financial agents (see, e. g., Hwang and Salmon, 2004; Covrig et al., 2006; Hakkio and Keeton, 2009; Kacperczyk et al. 2014; Fang et al., 2017; Griffith et al., 2020; Pástor and Vorsatz, 2020). Specifically, we apply a Fixed Effect[5] (FE) model as follows:

$$TD\_Dif_{f,m} = \alpha_{f,m} + \beta_1 Time_{f,m} + \beta_2 Market\_return_m + \beta_3 Market\_Stress_m + \varepsilon_{f,m} \quad \ldots\ldots\ldots \quad (7)$$

where $TD\_Dif_{f,m}$ is the level of information disseminated within the family *f* in month *m*. $Time_{f,m}$ ranges from 1 in the first month (January 2000) to 270 in the last month (June 2022). $Market\_return_m$ is the Spanish market return in month *m*. $Market\_Stress_m$ is the level of equity market stress measured with the Spanish Financial Market Stress Indicator (FMSI) of *CNMV* in month *m*.

(Please, Insert Table 3, around here)

Table 3 presents the results obtained from Equation 7. This table shows that the coefficient of the *Time* variable is significantly negative at the 1% level. The results indicate a significant decline in information dissemination within fund families over time according to our H2. Our results are consistent with the findings of Gimeno et al. (2022), which demonstrate an increase in TD levels

We also apply the Bai-Perron test to find structural breaks in the level of information dissemination, and we find that December 2007 and December 2012 are the main breakpoints in the pattern of this phenomenon. According to this result, we split the whole sample period into three subperiods: 2000-2007, 2008-2012, and 2013-2022. Table 3 indicates that during the first sub-period (2000-2007) and the third sub-period (2013-2022), there is a statistically significant decreasing tendency for the level of information dissemination. However, the results suggest that the dissemination remains at constant

[4] The evolution of the level of information dissemination over time is shown in Figure 1 in Appendix 1
[5] The Hausman test indicates the use of Fixed Effects (FE) instead of Random Effects (RE).

levels without showing a significant trend during the second sub-period (2008- 2012). Regarding market characteristics, we observe that the level of information dissemination is not affected by either market performance or the level of stress.

4. The persistence in the family level of information dissemination

In a context where the overall level of information diffusion within fund families has declined over the analysed time horizon, we investigate the persistence of information sharing within fund families. The aim is to determine whether the level of information sharing reflects an organizational philosophy and is a consequence of the family structure, such that families with high levels of information diffusion consistently maintain this high level over time, and similarly, whether families with a low levels of information diffusion persistent in maintaining their low levels.

To examine the persistence of information sharing within fund families we use a static panel-data model. Specifically, we apply a FE model on a monthly basis as follows:

$$TD\_Dif_{f,m} = \alpha_f + \beta_1 TD\_Dif_{f,m-n} + \beta_2 Time_{f,m} + \beta_3 Market\_return_m + \beta_4 Market\_Stress_m + \varepsilon_{f,m} \quad (8)$$

where $TD\_Dif_{f,m-n}$ represents the level of internal information diffusion of fund family *f* in month *m-n*, with n ∈ {1,3,6,12,24} months. The rest of the control variables are defined in Eq. 7.

(Please, Insert Table 4, around here)

Table 4 indicates that the coefficient of the lagged information diffusion level variable is significantly positive at the 1% level across the different time periods examined, suggesting a strong consistency in the level of information sharing. This persistence implies that the level of information dissemination within a fund family could serve as a reliable and predictable metric about its level in the short-term and long-term future.

5. Determinants of the information dissemination

In the previous section, we have find that some fund families exhibit a significantly higher level of information diffusion than others. This finding leads us to analyse the determinants that enhance the information dissemination within families, considering their management structure and the characteristics of their managers and funds.

Specifically, Pool et al. (2015) document that the greater the level of interaction among fund managers, the greater the probability that they share different opinions.

Similarly, Cici et al. (2017) indicate that a lower interaction among fund managers within a specific family could imply an information barrier not allowing the dissemination of information. Evans et al. (2020) argue that team-managed funds and the associated network of interconnected managers within the fund family may stimulate cooperative behaviour across funds in the family. Therefore, our third hypothesis in this study is as follows:

H3. The level of interaction among fund managers positively influences the information dissemination within fund families.

We measure the level of managers' interaction through (1) the percentage of single-managed funds; (2) the percentage of managers who manage at least one fund with another manager; (3) the percentage of funds whose manager(s) has or have at least one team fund and are therefore influenced by common management, and (4) the average number of managers per fund.

Regarding the manager characteristics, the level of information dissemination may be higher in fund families with a greater percentage of female managers because previous research suggests that women tend to adopt more collaborative and participative leadership styles promoting open communication within teams (Eagly, 2007; Catalyst, 2020). Carli (2001) also finds that women prioritize cooperation over competition which facilitate the flow of information among managers. Furthermore, teams with higher female representation tend to have more flexible hierarchies, which encourages horizontal information dissemination and improves collaboration (Thébaud, 2015). Hence, our fourth hypothesis is as follows:

H4. The percentage of male managers negatively influences the information dissemination within fund families.

Financial literature has also examined the influence of manager experience in different topics. Experienced managers tend to feel confident and recognized, making them more included to share information and possessing enhanced skills to identify market opportunities due to their greater experience. Conversely, less experienced managers may have fewer incentives to share information, opting instead for divergent decisions to differentiate themselves and improve their reputation. Hence, our fifth hypothesis is as follows:

H5. The average experience of managers positively influences the information dissemination within mutual fund families.

Regarding the characteristics of the families, we analyse: the average fund size within the family, the average age of the funds, the number of stocks in the portfolio holdings, the fees charged by the funds, the relative money flows into the funds and their dependence on the banking sector. In addition, we control for the market returns and market stress.

To examine the determinants of the level of information dissemination for each family *f* in each month *m*, we apply a RE model as follows:

$$TD\_Dif_{f,m} = \alpha_{f,m} + \beta_1 Interaction\ Mgrs_{f,m} + \beta_2 \%Male\ Mgrs_{f,m} + \beta_3 Avg\ Mgr\ Experience_{f,m} + \beta_4 Size_{f,m} + \beta_5 Age_{f,m} + \beta_6 \#Stocks_{f,m} + \beta_7 Fees_{f,m} + \beta_8 Flows_{f,m} + \beta_9 Banking_{f,m} + \beta_{10} Market\_return_m + \beta_{11} Market\_Stress_m + \varepsilon_{f,m} \quad (9)$$

where $TD\_Dif_{f,m}$ is the level of information disseminated in family *f* in month *m*. $Interaction\ Mgrs_{f,m}$ is the level of interaction between funds and managers. $\%Male\ Mgrs_{f,m}$ is the percentage of male managers to the total number of managers. $Avg\ Mgr\ Experience_{f,m}$ is the average number of years of experience in the mutual fund industry of managers. $Size_{f,m}$ is the average size of the funds. $Age_{f,m}$ is the relativized average age of the funds.[6] $\#Stocks_{f,m}$ is the average number of stocks. $Fees_{f,m}$ is the average level of management and deposit fees. $Flows_{f,m}$ is the average quarterly money flow. $Banking_{f,m}$ takes a value equal to 1 when a fund family depends on a banking or insurance company according to its governance structure. The rest of the control variables are defined in Eq. 7.

(Please, Insert Table 5, around here)

Table 5 presents the results of Equation 8 for the whole sample period 2000-2022. The findings indicate that the level of information dissemination is significantly higher in families where there is greater interaction between managers, regardless of the variable used to measure the level of interaction. This suggests that a collaborative environment within fund families fosters more similar decision-making processes. We consider that a fund family has a higher level of interaction when: (1) the percentage of single-managed funds to the total number of funds is lower; (2) the percentage of managers who manage at least one fund jointly with another manager is higher, (3) the percentage of funds whose

[6] To calculate the family age, first, the age of each fund is computed for each month, taking into account its creation date. Due to the inherent progression of time, the chronological age of the funds inevitably increases. Therefore, fund age is relativized based on the average age of the funds in each month. Finally, a weighted average of the ages of all funds managed by the family is determined for each date.

manager(s) has (have) at least one team fund and thus, are influenced by common management is higher or (4) the average number of managers per fund is higher.

Additionally, we find that the dissemination is significantly higher in families with a lower percentage of male managers according to our H4. We also find that information dissemination is significantly higher in families where managers have greater experience as expected according to H5. Experienced managers, with a solid career, have already developed well-established judgments and, therefore, feel more confident in sharing information. Their experience allows them to value the exchange of ideas, recognizing that it can enrich their decisions and strengthen their investment strategies.

6. Performance consequences of the dissemination of information

In this section, our study aims to analyze the performance consequences of information dissemination. Based on previous studies suggesting that competition environment and decentralized management structures leads to positive outcomes (Kacperczyk and Seru, 2012; Simutin, 2013; Evans et al., 2020), our sixth hypothesis is as follows:

H6. The information dissemination level negatively influences subsequent family performance.

To achieve this aim, we apply a FE model as follows:

$$Perf_{f,m+n}=\beta_0+\beta_1 TD\_Dif_{f,m}+\beta_2 Size_{f,m}+\beta_3 Age_{f,m}+\beta_4 \#Stocks_{f,m}+\beta_5 Fees_{f,m}+\beta_6 Flows_{f,m}+\beta_7 Market\_return_m+\beta_8 Market\_Stress_m+\varepsilon_{f,m} \quad (10)$$

where $Perf_{f,m+n}$ represents the gross performance of fund family f in month $m+n$ and is measured through the capital asset pricing model (CAPM), the Fama and French three-factor model and the Carhart four-factor model, with $n \in \{1,3,6,12\}$ months. To calculate the performance, we have equally-weighted the performance of all funds managed by the family and also, we have TNA-weighted the performance of ~~e~~ all funds managed by the family. $TD\_Dif_{f,m}$ is the level of information disseminated (see Equation 6). The rest of the control variables are defined in Eq. 7 and Eq. 9.

(Please, Insert Table 6, around here)

Table 6 shows the results obtained with Equation 10 when we calculate the equally-weighted family performance. The findings show a negative and significant influence of *TD_dif* on the family performance regardless the performance measure used over the different periods (n=1, 3, 6, 12) as stated in H6. The results are robust when using

the TNA-weighted family performance and also, when we split the whole period into the three periods: (1) 2000- 2007; (2) 2008- 2012 and (3) 2013-2022.

This result suggests that fund families with higher levels of information sharing may disincentive their managers from seeking investment opportunities that could add value to the portfolios. Such a collaborative environment can reduce their ability to anticipate market trends and respond effectively, resulting in delayed actions and missed opportunities. Additionally, it may foster "groupthink" where creative and unconventional ideas are overlooked, ultimately limiting the fund's capacity to implement innovative strategies (see, Prather and Middleton, 2002; Karagiannidis, 2012; Li, 2024; Haider et al., 2025).

Regarding the control variables, in general terms, the results show that those families with more TNA under management, age, fees, and inflows tend to perform better. This aligns with previous literature, suggesting that larger fund families benefit from economies of scale, older families have established track records due to their greater experience, reputation, and organizational stability, higher fees could indicate better resources or management, and higher money flows signal investor confidence, all of which contribute to improved performance (Chen et al., 2004; Kempf and Ruenzi; 2008b Bessler et al., 2016; Atta, and Marzuki, 2019). The results also show that market stress worsens fund family performance. This outcome can be explained by the fact that such market conditions increase volatility and uncertainty, disrupting decision-making and triggering emotional responses, which often result in underperformance (Verheyden et al., 2016; Capponi et al., 2024)

7. Flows consequences of the dissemination of information

The money flows of investment funds are influenced by several key variables, such as the fund's performance, the manager's reputation, and fees. Funds with strong performance tend to attract more investment, as investors trust their ability to generate returns (Elton et al., 2007; Cremers and Petajisto, 2009). The reputation and experience of the manager are also important factors, as investors prefer funds managed by professionals with a solid track record (Gruber, 1996; Chevalier and Ellison, 1999; Fang et al. 2014). Additionally, market conditions, such as economic stability and interest rates, influence investors' willingness to move their money (Massa, 2003).

In this section, we examine the money flows consequences of information dissemination within mutual fund families although fund investors may not respond to

the level of information dissemination within the family as fund holdings are not publicly disclosed, and investors may lack the detailed information needed to accurately determine this variable. However, a competitive environment within the fund family, in with the dissemination of information is lower, can also affect flows, as managers may act to differentiate their funds from others, enhancing performance and attracting capital. Thus, our seven hypothesis as follows:

H7. The information dissemination level negatively influences subsequent family relative money flows.

To study whether the internal information diffusion level of the family has a positively influence on its subsequent relative money flows, we estimate the following FE panel data model that is expressed as follows:

$$Flows_{f,m+n}=\beta_0+\beta_1 TD\_Dif_{f,m}+\beta_2 Size_{f,m}+\beta_3 Age_{f,m}+\beta_4 \#Stocks_{f,m}+\beta_5 Fees_{f,m}+\beta_6 Flows_{f,m}+\beta_7 Market\_return_m+\beta_8 Market\_Stress_m+\varepsilon_{f,m} \quad \ldots\ldots\ldots (11)$$

where $Flows_{f,m+n}$is the subsequent relative money flows of the fund family *f* in month *m*, with n ∈ {1,3,6,12} months. To calculate the relative money flows, we have equally-weighted the performance of all funds managed by the family and also, we have weighted the relative money flows of each fund based on its size (TNA-weighted). $TD\_Dif_{f,m}$ is the level of information disseminated (see Equation 6). The rest of the control variables are defined Eq. 7 and Eq. 9.

(Please, Insert Table 7, around here)

Table 7 shows the results obtained with Equation 11. The analysis of the factors influencing family fund flows reveals that the level of internal information dissemination within families has a negative and significant impact on subsequent family flows. High levels of information sharing within fund families can negatively impact investment flows because excessive reliance on shared information lowers managers' incentives to innovate and explore new opportunities, leading to less active and distinctive management. This uniformity in decision-making diminishes the fund's competitive advantage, making it less attractive to investors. Additionally, passive management practices can harm the fund's reputation and deter investors from allocating capital, especially in competitive markets.

In terms of the control variables, gross return, fees, prior flows, and market return generally have a significantly positive effect on fund flows (Kopsch et al. 2015). In contrast, market stress, larger fund size, and older fund age exert a negative influence on

fund flows. Market stress amplifies uncertainty and reduces investor confidence, as evidenced by Baker et al. (2021). Larger funds often encounter difficulties in achieving substantial growth due to their size, a challenge documented by Chen et al. (2004). Furthermore, older funds are frequently perceived as less innovative, which can lead to reduced capital inflows, a phenomenon observed by Kacperczyk et al. (2008).

8. Robustness analyses

8.1. Different definition of the level of information diffusion

The main results of the paper are obtained by considering all buying decisions made by all funds. However, it is possible that not all decisions are shared within the family, but rather only the most relevant ones that could significantly affect the family's performance. For robustness, we also calculate the level of information dissemination at the family level (Eq. 6) by focusing on the most important buying decisions of each family at each month. Specifically, we define important buying decisions based on two criteria.

First, based on the weighted impact of trading decisions within their TNA-funds, that is, based on $t_{i,s,m}$ of Eq.1. The buying decisions with a high trading weight are examined because they represent substantial transactions that influence the fund family's performance. Furthermore, the greater the weight of the decision, the higher the probability that the level of divergence from other funds will be greater. By focusing on these trades, it can be assessed whether the results of the study remain consistent, thereby enhancing the reliability of the findings.

Second, we consider the level of TD of trading decisions within their funds dissemination with buying decisions in the first quartile (Q1) within each fund family at each month, based on the level of TD of the stock-level trading divergence metric (see Eq. 1 in Gimeno et al, 2022), which helps identify key stock-buying decisions. This approach allows us to focus on high-conviction baying decisions, as these represent significant bets by fund managers that can impact family performance and enhance diversification for investors.

The results of the different analyses when considering those buying decisions that represent a high trading weight are available in the Online Appendix. The results when considering those buying decisions with a high level of TD are qualitative the same as those in the online Appendix and are available upon request to the authors.

8.2. Different estimation methods (fixed effects and random effects)

The model specification for all the equations of the paper is based on Hausman test. However, all the equations of the study are estimated using Fixed Effects (FE) and Random Effects (RE) and the results are robust. In addition, to study the consequences on performance and flows, we also estimate Eq. 10 and Eq. 11 using the TNA-weighted family performance and the TNA-weighted family flows, respectively.

8.3. Different sub-periods within the whole period

We apply the Bai-Perron test to identify structural breaks in the evolution of the information dissemination level within fund families, finding that December 2007 and December 2012 are the main breakpoints in this pattern. Based on these results, we divide the entire sample period into three subperiods: 2000–2007, 2008–2012, and 2013–2022, and estimate all equations. The results obtained regarding determinants, persistence, and consequences on performance and flows are robust for the three periods.

9. Conclusions

In this study, we propose a new measure to capture the level of information diffusion within fund families, based on the difference between the TD inter- and intra-family in their funds' buying trading decisions. Subsequently, we analyze the evolution, persistence, determinants, and consequences of this phenomenon on performance and fund flows.

In general terms, we find that information diffusion within fund families decreases over time. However, the study also conclude that past information dissemination levels are predictive of future trends, highlighting the persistence of internal communication strategies. Fund families with established, collaborative environments tend to maintain consistent levels of information sharing over time. Therefore, in this declining environment of information diffusion within mutual fund families, we conclude that families that disseminate more information continue to do so, and families that disseminate less information also remain consistent in their behavior.

We also conclude that certain families have a significantly higher level of information dissemination than others. Specifically, we find that families with a higher level of information dissemination are those that exhibit a lower percentage of single-managed funds relative to the total number of funds, a higher percentage of managers

who co-manage at least one fund with another manager, a higher percentage of funds whose manager(s) also oversee at least one team-managed fund and are thus influenced by common management, or a higher average number of managers per fund. Additionally, we find that the dissemination is significantly higher in families with a lower percentage of male managers.

The findings also suggest that higher levels of information dissemination within fund families may lead to weaker performance and reduced money flows. Therefore, we conclude that families act rationally by progressively reducing the degree of information dissemination within the family because a high dissemination has a significant negative impact on the overall performance of the families.

An excessive information sharing within the family could diminish fund managers' incentives to actively seek new investment opportunities, further exacerbating performance declines. These outcomes may undermine investor confidence and negatively affect the reputation of the fund family. To mitigate these challenges, fund families should adopt communication strategies that balance transparency with the need to avoid overwhelming investors or discouraging the pursuit of innovative investment opportunities.

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Table 1. Summary Statistics

This table shows summary statistics for our sample at four date points: June 2004, June 2009, June 2014 and June 2022. Panel A provides descriptive statistics about fund family characteristics while Panel B provides the statistics about the management structure of the fund families which is available from 2009 onwards. Specifically, this table includes the mean, quintile 1 value (Q1), and quintile 5 value (Q5) of each characteristic. *#Families* is the number of fund families in our sample, we distinguish between families that belong to a banking or insurance group (*bank-families*)*; Size* is the mean of monthly TNA of funds managed by fund families in million euros*; Age* is the average age of funds within each fund family; *#Stocks* is the average number of distinct stocks held by the funds; *GrossReturn* is the average of monthly gross return of funds; *Fees* is the average of funds' monthly management and deposit fees; *Flows* is the average of funds' monthly relative money flows; *%Single Funds* is the percentage of single funds to the total number of funds; *%Mgrs at least one common* is the percentage of managers who manage at least one fund jointly with another manager; *%Funds common management* is the percentage of funds whose manager/s have at least one team fund; *Avg #Mgrs per fund* is the average number of managers that each fund has; *%Male Mgrs* is the percentage of male managers to the total number of managers; and *Avg Mgr Experience* is the average of managers' experience in the fund industry in years.

Panel A: Family Characteristics		jun-04	jun-09	jun-14	jun-22
#Families		68	66	47	47
#Bank-families		56	54	37	28
Family_size	Mean	45,241	25,198	80,200	67,420
	Q1	65,224	26,031	121,268	94,849
	Q5	7,876	4,542	17,256	9,278
Family_age	Mean	7.46	10.58	15.48	18.18
	Q1	9.76	14.30	19.26	25.05
	Q5	5.54	7.98	12.99	7.45
Family_#stocks	Mean	44	39	44	43
	Q1	53	48	55	52
	Q5	34	29	35	29
Family_GrossReturn	*Mean*	2.05%	1.13%	0.35%	-7.60%
	Q1	2.37%	2.25%	1.15%	-6.41%
	Q5	1.72%	0.00%	-0.54%	-8.30%
Family_fees	Mean	0.15%	0.16%	0.18%	0.13%
	Q1	0.19%	0.19%	0.20%	0.15%
	Q5	0.13%	0.14%	0.15%	0.10%
Family_flows	Mean	2%	2%	10%	-1%
	Q1	5%	4%	20%	1%
	Q5	-3%	-6%	3%	-4%

Panel B: Family management structures				
%Single Funds	Mean	76%	62%	58%
	Q1	100%	100%	100%
	Q5	47.78%	0.00%	0.00%
%Mgrs at least one common	Mean	28%	43%	44%
	Q1	100%	100%	100%
	Q5	0.00%	0.00%	0.00%
%Funds common management	Mean	40%	50%	50%
	Q1	100%	100%	100%
	Q5	0.00%	0.00%	0.00%
Avg Num Mgrs per fund	Mean	1.42	1.55	1.80
	Q1	1.83	2.00	2.23
	Q5	1.000	1.000	1.000
%Male Mgrs	Mean	79%	80%	83%
	Q1	100%	100%	100%
	Q5	50.00%	50.00%	54.29%
Mgr Experience	Mean	7	8	8
	Q1	8.00	8.35	8.68
	Q5	4.87	7.38	7.65

Table 2. Descriptive Statistics about fund family information dissemination

This table shows the information dissemination average within fund families over time, the average within families that are in the top quintile (*Q1*) and in the bottom quintile (*Q5*). The last column shows the result of a mean-difference test between *Q1* and *Q5*. In all columns, the annual average is obtained using the monthly data. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Year	TD_Inter	TD_Intra	TD_Diff	TD_Diff (Q1)	TD_Diff (Q5)	TD_Diff (Q1-Q5)
2000	88,02%	77,69%	10.33%	46,04%	1,77%	44,26%***
2001	88,43%	78,37%	10.07%	45,43%	1,06%	44,37%***
2002	87,45%	77,70%	9.76%	45,62%	1,28%	44,34%***
2003	86,86%	77,44%	9.43%	46,51%	0,97%	45,54%***
2004	86,87%	78,07%	8.80%	40,49%	1,94%	38,55%***
2005	87,41%	80,20%	7.21%	36,48%	1,46%	35,02%***
2006	87,81%	79,98%	7.83%	38,05%	1,73%	36,31%***
2007	88,41%	76,64%	11.77%	43,28%	2,96%	40,32%***
2008	85,81%	75,75%	10.06%	41,85%	1,78%	40,06%***
2009	88,22%	77,72%	10.50%	33,11%	3,12%	29,99%***
2010	88,99%	76,92%	12.08%	39,45%	1,63%	37,82%***
2011	89,55%	79,25%	10.30%	36,19%	1,14%	35,05%***
2012	88,84%	80,33%	8.51%	33,48%	1,37%	32,11%***
2013	89,60%	80,48%	9.12%	35,06%	0,85%	34,22%***
2014	89,15%	81,02%	8.13%	36,73%	0,61%	36,12%***
2015	89,40%	80,77%	8.63%	38,04%	0,94%	37,09%***
2016	90,56%	82,76%	7.79%	40,32%	0,43%	39,89%***
2017	91,36%	83,85%	7.51%	31,17%	0,69%	30,48%***
2018	91,59%	83,83%	7.76%	34,62%	0,39%	34,24%***
2019	92,25%	84,92%	7.33%	33,61%	0,29%	33,31%***
2020	92,37%	84,82%	7.55%	34,35%	0,19%	34,17%***
2021	93,54%	88,22%	5.32%	27,01%	0,00%	27,01%***
2022	92,07%	90,37%	1.69%	23,49%	0,00%	23,49%***
2000-2022	89,27%	80,53%	8.74%	37,41%	1,16%	36,25%***

Table 3. Evolution of information dissemination within fund families

This table shows the results obtained from Equation 7 with the FE model on a monthly basis. The second column shows the coefficients and *Std. err*. reported in parentheses for the whole sample period (January 2000-June 2022) and the third, fourth and fifth columns show the coefficients and *Std. err*. for the different sub-period comprising (1) 2000 to 2007, (2) 2007 to 2012 and (3) 2013 to June 2022. The dependent variable, $TD\_Dif_{f,m}$ is the level of information disseminated within the family *f* in month *m*, and the independent variables are the following: $Time_{f,m}$ ranges from 1 in the first month to 270 in the last month; $Market\_return_m$ is the return of the Spanish market in month *m* and $Market\_ Stress_m$ is the level of equity market stress measured with the Spanish Financial Market Stress Indicator (FMSI) of *CNMV* in month *m*. ***, **, and * denote statistical significance at the 1%, 5%, and 10%, respectively.[1,2.]

	Whole Period: 2000-Jun2022	*Sub-period: 2000-2007*	*Sub-period: 2008-2012*	*Sub-period: 2013-Jun2022*
	Coefficient (*Std. err.*)	Coefficient (*Std. err.*)	Coefficient (*Std. err.*)	Coefficient (*Std. err.*)
Constant	0.0888***	0.0747***	0.0795**	0.0972***
	(0.0156)	(0.0228)	(0.0365)	(0.0240)
$Time_{f,m}$	-0.0280***	-0.0304*	0.0441	-0.0267**
	(0.0034)	(0.0176)	(0.0297)	(0.0115)
$Market\_return_m$	-0.0221	-0.0316	-0.0998*	0.0368
	(0.0288)	(0.0369)	(0.0533)	(0.0472)
$Market\_ Stress_m$	0.0549	0.1753**	-0.2623***	0.0516
	(0.0404)	(0.0709)	(0.0988)	(0.0868)
Wald	74.37***	41.06***	11.79***	60.00***
VIF	1.14	1.80	1.04	1.09

[1] Model was estimated with Robust Standard Errors.
[2] Variance Inflation Factors (VIF) values are widely acceptable in the literature.

Table 4. Persistence of the level of information dissemination within fund families

This table show the coefficients and *Std. err.* obtained from Equation 8, with the FE model on a monthly basis. The dependent variable, $TD\_Dif_{f,m}$ is the level of information disseminated within the family *f* in month *m* , and the independent variables are the following: $TD\_Dif_{f,m-1}$ is the level of information disseminated within the family *f* in month *m-1;* $TD\_Dif_{f,m-3}$ is the level of information disseminated within the family *f* in month *m-3;* $TD\_Dif_{f,m-6}$ is the level of information disseminated within the family *f* in month *m-6;* $TD\_Dif_{f,m-12}$ is the level of information disseminated within the family *f* in month *m-12*; $TD\_Dif_{f,m-24}$ is the level of information disseminated within the family *f* in month *m-24*; $Time_{f,m}$ ranges from 1 in the first month to 270 in the last month; $Market\_return_m$ is the return of the Spanish market in month *m* and $Market\_ Stress_m$ is the level of equity market stress measured with the Spanish Financial Market Stress Indicator (FMSI) of CNMV in month *m*. ***, **, and * denote statistical significance at the 1%, 5%, and 10%, respectively.[1,2]

	Coefficient (*Std. err.*)	Coefficient (*Std. err.*)	Coefficient (*Std. err.*)	Coefficient (*Std. err.*)	Coefficient (*Std. err.*)
Constant	0.0571*** (0.0050)	0.0585*** (0.0048)	0.0630*** (0.0050)	0.0661*** (0.0053)	0.0744*** (0.0059)
$TD\_Dif_{f,m-1}$	0.5000*** (0.0116)				
$TD\_Dif_{f,m-3}$		0.4609*** (0.0114)			
$TD\_Dif_{f,m-6}$			0.4203*** (0.0119)		
$TD\_Dif_{f,m-12}$				0.3359*** (0.0130)	
$TD\_Dif_{f,m-24}$					0.2204*** (0.0146)
$Time_{f,m}$	-0.0173*** (0.0033)	-0.0155*** (0.0032)	-0.0173*** (0.0033)	-0.0150*** (0.0037)	-0.0158*** (0.0043)
$Market\_return_m$	-0.0207 (0.0269)	-0.0286 (0.0271)	-0.0188 (0.0276)	-0.0169 (0.0298)	0.0046 (0.0337)
$Market\_ Stress_m$	0.0119 (0.0385)	0.0143 (0.0370)	0.0166 (0.0380)	0.0433 (0.0407)	0.0823* (0.0463)
Wald	494.15***	429.16***	332.94***	178.31***	62.94***
VIF	1.07	1.06	1.05	1.04	1.04

[1] Model was estimated with Robust Standard Errors.
[2] Variance Inflation Factors (VIF) values are widely acceptable in the literature.

Table 5. Determinants of information dissemination within fund families

This table show the coefficients and *Std. err.* obtained from Equation 9, with the RE model on a monthly basis. The dependent variable, $TD\_Dif_{f,m}$ is the level of information disseminated within the family *f* in month *m*, and the independent variables of fund family *f* in month *m* are the following: $\%Single\ Funds_{f,m}$ is the percentage of single funds to the total number of funds. $\%Mgrs\ at\ least\ one\ common_{f,m}$ is the percentage of managers who manage at least one fund jointly with another manager; $\%Funds\ common\ management_{f,m}$ is the percentage of funds whose manager/s have at least one team fund; $Avg\ \#Mgrs\ per\ fund_{f,m}$ is the average number of managers per fund; $\%Male\ Mgrs_{f,m}$ is the percentage of male managers to the total number of managers; $Avg\ Mgr\ Experience_{f,m}$ is the average number of years of managers' experience in the mutual fund industry; $Size_{f,m}$ is the average size of the funds; $Age_{f,m}$ is the relativized average age of the funds; $\#Stocks_{f,m}$ is the average number of stocks. $Fees_{f,m}$ is the average level of management and deposit fees; $Flows_{f,m}$ is the average quarterly money flow received for funds; *Banking* takes a value equal to 1 when a fund family depends on a banking or insurance company according to its governance structure; $Market\_return_m$ is the market return in month *m* and $Market\_ Stress_m$ is the level of equity market stress measured with the Spanish Financial Market Stress Indicator (FMSI) of CNMV in month *m*. The ***, **, and * denote statistical significance at the 1%, 5%, and 10%, respectively. [1,2]

	Coefficient (*Std. err.*)	Coefficient (*Std. err.*)	Coefficient (*Std. err.*)	Coefficient (*Std. err.*)
$Constant_{f,m}$	0.2572***	0.1563*	0.1337	0.1653**
	(0.0840)	(0.0818)	(0.0833)	(0.0825)
$\%Single\ Funds_{f,m}$	-0.0821***			
	(0.0096)			
$\%Mgrs\ at\ least\ one\ common_{f,m}$		0.0852***		
		(0.0088)		
$\%Funds\ common\ management_{f,m}$			0.0709***	
			(0.0101)	
$Avg\ \#Mgrs\ per\ fund_{f,m}$				0.0216***
				(0.0039)
$\%Male\ Mgrs_{f,m}$	-0.0515***	-0.0495***	-0.0601***	-0.0599***
	(0.0164)	(0.0163)	(0.0164)	(0.0164)
$Avg\ Mgr\ Experience_{f,m}$	0.0119***	0.0094**	0.0116***	0.0104**
	(0.0043)	(0.0043)	(0.0043)	(0.0043)
$Size_{f,m}$	-0.0072	-0.0064	-0.0069	-0.0050
	(0.0045)	(0.0045)	(0.0045)	(0.0045)
$Age_{f,m}$	-0.0065	-0.0063	-0.0013	-0.0013
	(0.0087)	(0.0085)	(0.0086)	(0.0088)
$\#Stocks_{f,m}$	-0.0054	0.0014	0.0034	-0.0085
	(0.0129)	(0.0128)	(0.0129)	(0.0131)
$Fees_{f,m}$	-0.3176	-0.7784	-1,252	-1,775
	(5,558)	(5,531)	(5,580)	(5,603)
$Flows_{f,m}$	-0.0116	-0.0101	-0.0137	-0.0133
	(0.0106)	(0.0106)	(0.0107)	(0.0107)
$Banking_{f,m}$	-0.0638	-0.0711	-0.0770	-0.0668
	(0.0469)	(0.0449)	(0.0473)	(0.0449)
$Market\_return_m$	-0.0088	-0.0105	-0.0100	-0.0076
	(0.0395)	(0.0394)	(0.0397)	(0.0398)
$Market\_ Stress_m$	-0.0198	-0.0180	-0.0029	-0.0260
	(0.0717)	(0.0715)	(0.0721)	(0.0722)
Wald	104.11***	123.96***	79.74***	61.76***
VIF	1.12	1.11	1.10	1.09

[1] Equation was estimated with Robust Standard Errors.

[2] Variance Inflation Factors (VIF) values are widely acceptable in the literature.

Table 6. The level of information dissemination and the subsequent family performance

This table shows the results obtained from Equation 10 on a monthly basis. Section A shows the results obtained with the fund alpha of the CAPM, Section B shows the results of the Fama and French three-factor model alpha and Section C shows the results of the Carhart four-factor model alpha. We estimate the alphas by using rolling windows of 22 (*t+1*), 60 (*t+3*), 120 (*t+6*) and 240 (*t+12*) daily data. The dependent variable is the subsequent performance of the fund family *f* in month *m*, and the independent variables are as follows: $TD\_Dif_{f,m}$ is the level of information disseminated; $Family\_size_{f,m}$ is the average size of the funds; $Family\_age_{f,m}$ is the relativized average age of the funds; $Family\_\#stocks_{f,m}$ is the average number of stocks; $Family\_fees_{f,m}$ is the average level of management and deposit fees; $Family\_flows_{f,m}$ is the average quarterly money flow received for funds; $Market\_return_m$ is the market return in month *m* and $Market\_Stress_m$ is the level of equity market stress measured with the Spanish Financial Market Stress Indicator (FMSI) of CNMV in month *m*. The ***, **, and * denote statistical significance at the 1%, 5%, and 10%, respectively. [1,2]

	$Family\_Performance_{f,t}$											
	Section A: CAPM				*Section B: 3-Factor*				*Section C: 4-Factor*			
	m+1	*m+3*	*m+6*	*m+12*	*m+1*	*m+3*	*m+6*	*m+12*	*m+1*	*m+3*	*m+6*	*m+12*
Constant	-0.0004**	-0.0004***	-0.0006***	-0.0008***	-0.0005***	-0.0003***	-0.0004***	-0.0005***	-0.0007***	-0.0004***	-0.0005***	-0.0005***
	(0.0002)	(0.0001)	(0.0001)	(0.0001)	(0.0002)	(0.0001)	(0.0001)	(0.0001)	(0.0002)	(0.0001)	(0.0001)	(0.0001)
$TD\_Dif_{f,m}$	-0.0012*	-0.0001	-0.0092**	-0.0079***	-0.0029*	-0.0028*	-0.0041**	-0.0025**	-0.0024*	-0.0038**	-0.0056*	-0.0034**
	(0.0076)	(0.0049)	(0.0036)	(0.0025)	(0.0075)	(0.0045)	(0.0033)	(0.0024)	(0.0076)	(0.0046)	(0.0033)	(0.0027)
$Size_{f,m}$	0.0037**	0.0031***	0.0041***	0.0063***	0.0031*	0.0018*	0.0019**	0.0041***	0.0051***	0.0032***	0.0031***	0.0037***
	(0.0017)	(0.0011)	(0.0008)	(0.0006)	(0.0017)	(0.0010)	(0.0007)	(0.0005)	(0.0017)	(0.0010)	(0.0007)	(0.0006)
$Age_{f,m}$	0.0044**	0.0034***	0.0041***	0.0036***	0.0034*	0.0023**	0.0030***	0.0014**	0.0023	0.0005	0.0014*	0.0013*
	(0.0019)	(0.0013)	(0.0009)	(0.0006)	(0.0019)	(0.0012)	(0.0009)	(0.0007)	(0.0019)	(0.0012)	(0.0009)	(0.0007)
$\#Stocks_{f,m}$	0.0005	0.0007	0.0014***	0.0020***	0.0004	-0.0022	0.0007	0.0011***	0.0005	0.0033	0.0006	0.0008**
	(0.0010)	(0.0007)	(0.0005)	(0.0004)	(0.0010)	(0.0006)	(0.0005)	(0.0003)	(0.0010)	(0.0006)	(0.0005)	(0.0004)
$Fees_{f,m}$	0.0773**	0.0904***	0.0726***	0.0423***	0.1018***	0.0714***	0.0502***	0.0307***	0.1069***	0.0863***	0.0577***	0.0477***
	(0.0309)	(0.0200)	(0.0147)	(0.0103)	(0.0302)	(0.0184)	(0.0134)	(0.0097)	(0.0309)	(0.0187)	(0.0135)	(0.0110)
$Flows_{f,m}$	0.0001***	0.0002***	0.0002***	0.0001***	0.0002***	0.0001***	0.0002***	0.0001***	0.0002***	0.0001***	0.0002***	0.0002***
	(0.0047)	(0.0030)	(0.0022)	(0.0016)	(0.0046)	(0.0028)	(0.0003)	(0.0019)	(0.0047)	(0.0028)	(0.0025)	(0.0021)
$Market\_return_m$	0.0011***	0.0005***	0.0000	-0.0001	-0.0003*	0.0001	-0.0021	-0.0001	-0.0002	-0.0001	-0.0001	0.0002***
	(0.0002)	(0.0001)	(0.0001)	(0.0001)	(0.0002)	(0.0001)	(0.0001)	(0.0001)	(0.0002)	(0.0001)	(0.0001)	(0.0001)
$Market\_Stress_m$	-0.0016***	-0.0012***	-0.0010***	-0.0006***	-0.0012***	-0.0008***	-0.0007***	-0.0008***	-0.0012***	-0.0008***	-0.0007***	-0.0006***
	(0.0003)	(0.0002)	(0.0001)	(0.0001)	(0.0003)	(0.0002)	(0.0001)	(0.0001)	(0.0003)	(0.0002)	(0.0001)	(0.0001)
Wald	17,78***	25,19***	37,86***	60,77***	84,4***	11,57***	24,35***	45,01***	9,56***	12,47***	25,85***	35,92***
VIF	1.12	1.11	1.10	1.07	1.10	1.06	1.07	1.09	1.10	1.11	1.10	1.09

[1] Equation was estimated with Robust Standard Errors.
[2] Variance Inflation Factors (VIF) values are widely acceptable in the literature

Table 7. The level of information dissemination and the family flows

This table shows the results obtained from Equation 11 on a monthly basis. The dependent variable is the subsequent relative money flows of the fund family *f* in month *m,* and the independent variables are as follows: $TD\_Dif_{f,m}$ is the level of information disseminated within the family *f* in month *m;* $Family\_size_{f,m}$ is the average size of the funds; $Age_{f,m}$ is the relativized average age of the funds; $Family\_\#stocks_{f,m}$ is the average number of stocks; $Fees_{f,m}$ is the average level of management and deposit fees; $GrossReturn_{f,m}$ is the average of monthly gross return of funds and $Flows_{f,m-1}$ is the average quarterly money flow received for funds within family *f* in the previous month *m-1*. The ***, **, and * denote statistical significance at the 1%, 5%, and 10%, respectively. [1,2]

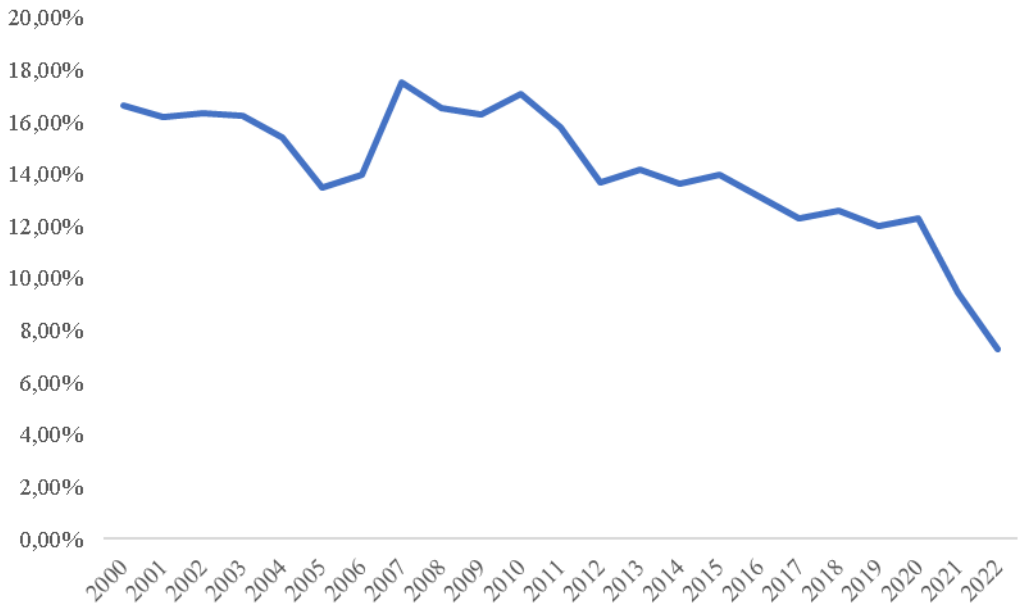
	$Family\_Flows_{f,t}$			
	m+1	*m+3*	*t+6*	*t+12*
Constant	0.1239**	0.3194***	0.3152***	0.3162***
	(0.0481)	(0.0513)	(0.0527)	(0.0556)
$TD\_Dif_{f,m}$	-0.0083*	0.0039*	-0.0002*	-0.0319*
	(0.0160)	(0.0171)	(0.0176)	(0.0186)
$Size_{f,m}$	-0.0031	-0.0149***	-0.0261***	-0.0387***
	(0.0037)	(0.0039)	(0.0040)	(0.0042)
$Age_{f,m}$	-0.0323***	-0.0382***	-0.0260***	-0.0106**
	(0.0044)	(0.0047)	(0.0049)	(0.0052)
$\#Stocks_{f,m}$	-0.0040	-0.0155	0.0091	0.0339***
	(0.0108)	(0.0116)	(0.0120)	(0.0128)
$Fees_{f,m}$	1.840***	1.536 **	1.476**	5.155
	(6.238)	(6.637)	(6.734)	(7.094)
$GrossReturn_{f,m}$	0.3348***	0.0887***	0.0444***	0.0155
	(0.0122)	(0.0130)	(0.0132)	(0.0138)
$Flows_{f,m-1}$	0.0710***	0.0763***	0.0294*	-0.0174
	(0.0141)	(0.0150)	(0.0152)	(0.0163)
$Market\_Return_m$	0.0301	0.0904**	0.1457***	-0.0076
	(0.0387)	(0.0412)	(0.0416)	(0.0438)
$Market\_Stress_m$	-0.2737***	-0.3698***	-0.3148***	-0.0540
	(0.0684)	(0.0731)	(0.0746)	(0.0785)
Wald	129.03***	36.75***	19.75***	12.6***
VIF	1.08	1.08	1.07	1.07

[1] Equation was estimated with Robust Standard Errors.
[2] Variance Inflation Factors (VIF) values are widely acceptable in the literature

Appendix I. Evolution of the level of information dissemination within fund families

Figure. 1. Evolution of the level of information dissemination within fund families

This figure represents the level of information dissemination within fund families from January 2000 to June 2022. The value is computed yearly based on the average of their months.



Online Appendix: Results of the empirical analyses for important buying decisions based on the trading weight

Table A.1. Descriptive Statistics about fund family information dissemination: important buying decisions based on the trading weight

This table shows the information dissemination average within fund families over time for important buy based on the trading weight, the average within families that are in the top quintile (*Q1*) and in the bottom quintile (*Q5*). The last column shows the result of a mean-difference test between *Q1* and *Q5*. In all columns, the annual average is obtained using the monthly data. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Year	TD_Inter	TD_Intra	TD_Diff	TD_Diff (Q1)	TD_Diff (Q5)	TD_Diff (Q1-Q5)
2000	84,37%	71,27%	13,10%	58,03%	0,25%	57,78%***
2001	86,35%	75,33%	11,03%	54,59%	0,06%	54,53%***
2002	85,28%	73,82%	11,46%	53,75%	0,01%	53,74%***
2003	84,49%	73,37%	11,12%	56,61%	0,02%	56,60%***
2004	84,39%	72,95%	11,45%	50,29%	0,04%	50,25%***
2005	85,07%	76,32%	8,75%	43,91%	0,09%	43,82%***
2006	85,85%	75,78%	10,08%	46,22%	0,25%	45,97%***
2007	85,94%	73,72%	12,22%	48,17%	1,06%	47,12%***
2008	81,88%	71,74%	10,14%	46,17%	0,14%	46,03%***
2009	86,07%	73,41%	12,66%	45,22%	0,67%	44,54%***
2010	87,12%	72,65%	14,47%	45,70%	0,82%	44,89%***
2011	88,47%	77,22%	11,25%	44,98%	0,17%	44,81%***
2012	87,51%	79,38%	8,12%	40,46%	0,00%	40,46%***
2013	88,49%	79,16%	9,34%	45,48%	0,17%	45,31%***
2014	87,16%	78,69%	8,48%	43,38%	0,03%	43,35%***
2015	87,71%	78,92%	8,79%	45,15%	0,09%	45,07%***
2016	88,96%	79,26%	9,71%	52,06%	0,08%	51,98%***
2017	90,29%	79,66%	10,63%	45,77%	0,00%	45,77%***
2018	90,38%	81,42%	8,96%	46,00%	0,00%	46,00%***
2019	91,19%	82,00%	9,19%	47,89%	0,00%	47,89%***
2020	90,65%	82,44%	8,22%	43,48%	0,01%	43,48%***
2021	92,11%	86,37%	5,73%	37,71%	0,00%	37,71%***
2022	90,79%	90,16%	0,63%	28,39%	0,00%	28,39%***
2000-2022	87,34%	77,33%	10,01%	46,90%	0,18%	46,72%***

Table A.2 Evolution of information dissemination within fund families: important buying decisions based on the trading weight

This table shows the results obtained from Equation 7 with the FE model on a monthly basis. The second column shows the coefficients and *Std. err*. reported in parentheses for the whole sample period (January 2000-June 2022) and the third, fourth and fifth columns show the coefficients and *Std. err*. for the different sub-period comprising (1) 2000 to 2012 and (2) 2007 to 2012. The dependent variable, $TD\_Dif_{f,m}$ is the level of information disseminated within the family *f* in month *m*, and the independent variables are the following: $Time_{f,m}$ ranges from 1 in the first month to 270 in the last month; $Market\_return_m$ is the return of the Spanish market in month *m* and $Market\_ Stress_m$ is the level of equity market stress measured with the Spanish Financial Market Stress Indicator (FMSI) of *CNMV* in month *m*. ***, **, and * denote statistical significance at the 1%, 5%, and 10%, respectively.[1,2.]

	Whole Period: 2000-Jun2022	*Sub-period: 2000-2012*	*Sub-period: 2013-2022*
	Coefficient (*Std. err.*)	Coefficient (*Std. err.*)	Coefficient (*Std. err.*)
Constant	0.1387***	0.1357***	0.0985***
	(0.0074)	(0.0083)	(0.0277)
$Time_{f,m}$	-0.0411***	-0.0493***	-0.0079***
	(0.0050)	(0.0101)	(0.0176)
$Market\_return_m$	-0.0301	-0.0653	0.0330
	(0.0415)	(0.0477)	(0.0719)
$Market\_ Stress_m$	-0.0477	-0.0381	-0.0549
	(0.0582)	(0.0626)	(0.1326)
Wald	22.72***	8.81***	22.90***
VIF	1.05	1.35	1.60

[1] Model was estimated with Robust Standard Errors.
[2] Variance Inflation Factors (VIF) values are widely acceptable in the literature.

Table A.3. Persistence of the level of information dissemination within fund families: important buying decisions based on the trading weight

This table show the coefficients and *Std. err*. obtained from Equation 8 with the FE model on a monthly basis. The dependent variable, $TD\_Dif_{f,m}$ is the level of information disseminated within the family *f* in month *m* , and the independent variables are the following: $TD\_Dif_{f,m-1}$ is the level of information disseminated within the family *f* in month *m-1;* $TD\_Dif_{f,m-3}$ is the level of information disseminated within the family *f* in month *m-3;* $TD\_Dif_{f,m-6}$ is the level of information disseminated within the family *f* in month *m-6;* $TD\_Dif_{f,m-12}$ is the level of information disseminated within the family *f* in month *m-12*; $TD\_Dif_{f,m-24}$ is the level of information disseminated within the family *f* in month *m-24*; $Time_{f,m}$ ranges from 1 in the first month to 270 in the last month; $Market\_return_m$ is the return of the Spanish market in month *m* and $Market\_ Stress_m$ is the level of equity market stress measured with the Spanish Financial Market Stress Indicator (FMSI) of CNMV in month *m*. ***, **, and * denote statistical significance at the 1%, 5%, and 10%, respectively.[1,2]

	Coefficient (*Std. err.*)	Coefficient (*Std. err.*)	Coefficient (*Std. err.*)	Coefficient (*Std. err.*)	Coefficient (*Std. err.*)
Constant	0.1477*	0.3403***	0.2497***	0.1357**	0.0562
	(0.0842)	(0.1231)	(0.0917)	(0.0639)	(0.0786)
$TD\_Dif_{f,m-1}$	0.7657***				
	(0.0322)				
$TD\_Dif_{f,m-3}$		0.7004***			
		(0.0366)			
$TD\_Dif_{f,m-6}$			0.6305***		
			(0.0381)		
$TD\_Dif_{f,m-12}$				0.2952***	
				(0.0458)	
$TD\_Dif_{f,m-24}$					0.2167***
					(0.0500)
$Time_{f,m}$	-0.0773	-0.7830**	-1.4600 ***	0.0889	0.1407
	(0.3650)	(0.3888)	(0.3760)	(0.3039)	(0.3268)
$Market\_return_m$	-0.0866	-0.2905	-0.1786	0.2054	-0.1453
	(0.1295)	(0.1846)	(0.1636)	(0.1270)	(0.0921)
$Market\_ Stress_m$	-0.8376	-1.8790 **	-0.5785	-0.5960	0.0323
	(0.6386)	(0.8413)	(0.5826)	(0.3827)	(0.4049)
Wald	570.49	367.68	282	43.61	21.64
VIF	1.07	1.06	1.06	1.07	1.04

[1] Model was estimated with Robust Standard Errors.
[2] Variance Inflation Factors (VIF) values are widely acceptable in the literature.

Table A.4. Determinants of information dissemination within fund families: important buying decisions based on the trading weight

This table show the coefficients and *Std. err.* obtained from Equation 9 with the RE model on a monthly basis. The dependent variable, $TD\_Dif_{f,m}$ is the level of information disseminated within the family *f* in month *m*, and the independent variables of fund family *f* in month *m* are the following: $\%Single\ Funds_{f,m}$ is the percentage of single funds to the total number of funds. $\%Mgrs\ at\ least\ one\ common_{f,m}$ is the percentage of managers who manage at least one fund jointly with another manager; $\%Funds\ common\ management_{f,m}$ is the percentage of funds whose manager/s have at least one team fund; $Avg\ \#Mgrs\ per\ fund_{f,m}$ is the average number of managers per fund; $\%Male\ Mgrs_{f,m}$ is the percentage of male managers to the total number of managers; $Avg\ Mgr\ Experience_{f,m}$ is the average number of years of managers' experience in the mutual fund industry; $Size_{f,m}$ is the average size of the funds; $Age_{f,m}$ is the relativized average age of the funds; $\#Stocks_{f,m}$ is the average number of stocks. $Fees_{f,m}$ is the average level of management and deposit fees; $Flows_{f,m}$ is the average quarterly money flow received for funds; *Banking* takes a value equal to 1 when a fund family depends on a banking or insurance company according to its governance structure; $Market\_return_m$ is the market return in month *m* and $Market\_ Stress_m$ is the level of equity market stress measured with the Spanish Financial Market Stress Indicator (FMSI) of CNMV in month *m*. The ***, **, and * denote statistical significance at the 1%, 5%, and 10%, respectively. [1,2]

	Coefficient (*Std. err.*)	Coefficient (*Std. err.*)	Coefficient (*Std. err.*)	Coefficient (*Std. err.*)
$Constant_{f,m}$	0.2290*	0.0951	0.0622	0.1120
	(0.1179)	(0.1150)	(0.1166)	(0.1163)
$\%Single\ Funds_{f,m}$	-0.1102***			
	(0.0141)			
$\%Mgrs\ at\ least\ one\ common_{f,m}$		0.1199***		
		(0.0129)		
$\%Funds\ common\ management_{f,m}$			0.1120***	
			(0.0148)	
$Avg\ \#Mgrs\ per\ fund_{f,m}$				0.0335***
				(0.0056)
$\%Male\ Mgrs_{f,m}$	-0.0051	-0.0020	-0.0163	-0.0167
	(0.0239)	(0.0238)	(0.0239)	(0.0239)
$Avg\ Mgr\ Experience_{f,m}$	0.0127**	0.0094	0.0131**	0.0112*
	(0.0063)	(0.0063)	(0.0064)	(0.0064)
$Size_{f,m}$	-0.0032	-0.0023	-0.0033	-0.0004
	(0.0066)	(0.0065)	(0.0066)	(0.0066)
$Age_{f,m}$	-0.0051	-0.0061	-0.0021	-0.0014
	(0.0126)	(0.0125)	(0.0126)	(0.0128)
$\#Stocks_{f,m}$	-0.0097	-0.0008	0.0021	-0.0158
	(0.0189)	(0.0187)	(0.0188)	(0.0192)
$Fees_{f,m}$	-4.064	-4.347.	-4.384	-5.312
	(8.193)	(8.144)	(8.197)	(8.234)
$Flows_{f,m}$	-0.0206	-0.0185	-0.0241	-0.0234
	(0.0157)	(0.0156)	(0.0157)	(0.0158)
$Banking_{f,m}$	-0.0731	-0.0828	-0.0935	-0.0772
	(0.0560)	(0.0543)	(0.0572)	(0.0551)
$Market\_return_m$	0.0309	0.0286	0.0290	0.0326
	(0.0583)	(0.0581)	(0.0584)	(0.0586)
$Market\_ Stress_m$	-0.0831	-0.0797	-0.0531	-0.0912
	(0.1056)	(0.1051)	(0.1058)	(0.1060)
Wald	82.44***	107.55***	78.16***	56.17***
VIF	1.12	1.13	1.15	1.22

[1] Equation was estimated with Robust Standard Errors.

[2] Variance Inflation Factors (VIF) values are widely acceptable in the literature.

Table A.5. The level of information dissemination and the subsequent family performance: important buying decisions based on the trading weight

This table shows the results obtained from Equation 10 with the FE model on a monthly. Section A shows the results obtained with the fund alpha of the CAPM, Section B shows the results of the Fama and French three-factor model alpha and Section C shows the results of the Carhart four-factor model alpha. We estimate the alphas by using rolling windows of 22 (*t+1*), 60 (*t+3*), 120 (*t+6*) and 240 (*t+12*) daily data. The dependent variable is the subsequent performance of the fund family *f* in month *m*, and the independent variables are as follows: $TD\_Dif_{f,m}$ is the level of information disseminated; $Family\_size_{f,m}$ is the average size of the funds; $Family\_age_{f,m}$ is the relativized average age of the funds; $Family\_\#stocks_{f,m}$ is the average number of stocks; $Family\_fees_{f,m}$ is the average level of management and deposit fees; $Family\_flows_{f,m}$ is the average quarterly money flow received for funds; $Market\_return_m$ is the market return in month *m* and $Market\_Stress_m$ is the level of equity market stress measured with the Spanish Financial Market Stress Indicator (FMSI) of CNMV in month *m*. The ***, **, and * denote statistical significance at the 1%, 5%, and 10%, respectively. [1,2]

	$Family\_Performance_{f,t}$											
	Section A: CAPM				*Section B: 3-Factor*				*Section C: 4-Factor*			
	m+1	*m+3*	*m+6*	*m+12*	*m+1*	*m+3*	*m+6*	*m+12*	*m+1*	*m+3*	*m+6*	*m+12*
Constant	0.0015	-0.0019	-0.0030	-0.0023	0.0020	-0.0001	-0.0007	0.0007	0.0022	-0.0060	-0.0005	0.0014
	(0.0053)	(0.0034)	(0.0025)	(0.0018)	(0.0052)	(0.0032)	(0.0023)	(0.0017)	(0.0053)	(0.0032)	(0.0023)	(0.0019)
$TD\_Dif_{f,m}$	-0.0004**	-0.0004***	-0.0006***	-0.0008***	-0.0005***	-0.0003***	-0.0004***	-0.0005***	-0.0007***	-0.0005***	-0.0005***	-0.0005***
	(0.0002)	(0.0001)	(0.0001)	(0.0001)	(0.0002)	(0.0001)	(0.0001)	(0.0001)	(0.0002)	(0.0001)	(0.0001)	(0.0001)
$Size_{f,m}$	0.0037**	0.0032***	0.0042***	0.0064***	0.0031*	0.0018*	0.0020***	0.0041***	0.0052***	0.0003***	0.0031***	0.0038***
	(0.0017)	(0.0011)	(0.0008)	(0.0006)	(0.0017)	(0.0010)	(0.0007)	(0.0005)	(0.0017)	(0.0010)	(0.0007)	(0.0006)
$Age_{f,m}$	0.0044**	0.0035***	0.0042***	0.0036***	0.0034*	0.0023**	0.0031***	0.0014**	0.0023	0.0006	0.0015*	0.0013*
	(0.0019)	(0.0013)	(0.0009)	(0.0006)	(0.0019)	(0.0012)	(0.0009)	(0.0007)	(0.0019)	(0.0012)	(0.0009)	(0.0007)
$\#Stocks_{f,m}$	0.0005	0.0007	0.0013***	0.0020***	0.0004	-0.0045	0.0006	0.0011***	0.0005	0.0007	0.0517	0.0795**
	(0.0010)	(0.0007)	(0.0005)	(0.0004)	(0.0010)	(0.0006)	(0.0005)	(0.0003)	(0.0010)	(0.0006)	(0.0005)	(0.0004)
$Fees_{f,m}$	0.0774**	0.0901***	0.0723***	0.0420***	0.1021***	0.0713***	0.0502***	0.0307***	0.1071***	0.0863***	0.0576***	0.0477***
	(0.0309)	(0.0200)	(0.0147)	(0.0103)	(0.0302)	(0.0184)	(0.0134)	(0.0097)	(0.0309)	(0.0187)	(0.0135)	(0.0110)
$Flows_{f,m}$	0.0001***	0.0002***	0.1947***	0.0001***	0.0002***	0.0001***	0.0002***	0.0001***	0.0002***	0.0001***	0.0002***	0.0002***
	(0.0047)	(0.0030)	(0.0022)	(0.0016)	(0.0046)	(0.0028)	(0.0025)	(0.0019)	(0.0047)	(0.0000)	(0.0000)	(0.0021)
$Market\_return_m$	0.0011***	0.0005***	0.0016	-0.0001	-0.0003*	0.0001	-0.0020	-0.0001	-0.0002	-0.0001	-0.0070	0.0002***
	(0.0002)	(0.0001)	(0.0001)	(0.0001)	(0.0002)	(0.0001)	(0.0001)	(0.0001)	(0.0002)	(0.0001)	(0.0078)	(0.0001)
$Market\_Stress_m$	-0.0016***	-0.0012***	-0.0010***	-0.0006***	-0.0012***	-0.0008***	-0.0007***	-0.0008***	-0.0012***	-0.0008***	-0.0007***	-0.0006***
	(0.0003)	(0.0002)	(0.0001)	(0.0001)	(0.0003)	(0.0002)	(0.0001)	(0.0001)	(0.0003)	(0.0002)	(0.0001)	(0.0001)
Wald	17.79***	24.88***	37.2***	59.72***	8.44***	11.53***	24.16***	44.87***	9.57***	12.39***	25.49***	35.79***
VIF	1.10	1.08	1.08	1.06	1.12	1.11	1.10	1.09	1.09	1.09	1.10	1.09

[1] Equation was estimated with Robust Standard Errors.
[2] Variance Inflation Factors (VIF) values are widely acceptable in the literature

Table A.6. The level of information dissemination and the family flows: important buying decisions based on the trading weight

This table shows the results obtained from Equation 11 with the FE model on a monthly. The dependent variable is the subsequent relative money flows of the fund family *f* in month *m*, and the independent variables are as follows: $TD\_Dif_{f,m}$ is the level of information disseminated within the family *f* in month *m; Family_size*$_{f,m}$ is the average size of the funds; $Age_{f,m}$ is the relativized average age of the funds; *Family_#stocks*$_{f,m}$ is the average number of stocks; $Fees_{f,m}$ is the average level of management and deposit fees; $GrossReturn_{f,m}$ is the average of monthly gross return of funds and $Flows_{f,m-1}$ is the average quarterly money flow received for funds within family *f* in the previous month *m-1*. The ***, **, and * denote statistical significance at the 1%, 5%, and 10%, respectively. [1,2]

	Family_Flows$_{f,t}$			
	m+1	*m+3*	*t+6*	*t+12*
Constant	0.1262***	0.3241***	0.3190***	0.3141***
	(0.0481)	(0.0513)	(0.0527)	(0.0556)
$TD\_Dif_{f,m}$	-0.0142**	-0.0143**	-0.0141**	-0.0166**
	(0.0111)	(0.0119)	(0.0122)	(0.0129)
$Size_{f,m}$	-0.0034	-0.0153***	-0.0265***	-0.0387***
	(0.0037)	(0.0040)	(0.0040)	(0.0042)
$Age_{f,m}$	-0.0325***	-0.0385***	-0.0262***	-0.0106**
	(0.0044)	(0.0047)	(0.0049)	(0.0052)
$\#Stocks_{f,m}$	-0.0035	-0.0148	0.0098	0.0343***
	(0.0108)	(0.0116)	(0.0121)	(0.0129)
$Fees_{f,m}$	1.823***	1.520**	1.458**	4.957
	(6.238)	(6.638)	(0.673)	(7.098)
$GrossReturn_{f,m}$	0.3346***	0.0886***	0.0442***	0.0153
	(0.0122)	(0.0130)	(0.0132)	(0.0138)
$Flows_{f,m-1}$	0.0711***	0.0761***	0.0294*	-0.0167
	(0.0141)	(0.0150)	(0.0152)	(0.0163)
	0.0297	0.0897**	0.1451***	-0.0075
$Market\_Return_m$	(0.0387)	(0.0412)	(0.0416)	(0.0438)
	-0.2747***	-0.3707***	-0.3156***	-0.0550
$Market\_Stress_m$	(0.0684)	(0.0731)	(0.0746)	(0.0785)
Wald	129.21***	36.92***	19.91***	12.46***
VIF	1.04	1.16	1.07	1.05

[1] Equation was estimated with Robust Standard Errors.
[2] Variance Inflation Factors (VIF) values are widely acceptable in the literature