Capital Commitment and Investment Decisions: The Role of Mutual Fund Charges *

Juan Pedro Gómez† Melissa Porras Prado‡

Rafael Zambrana Galacho§

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Abstract

Mutual fund managers, we argue, extract valuable information from the investors' choice among different load share-classes regarding their investment horizon. We find that the lack of explicit capital in share classes without entry or exit loads affects fund-trading horizon, stock selection, and in turn overall fund performance. Mutual fund managers hold shares for shorter periods of time, hold more cash, more liquid stocks, and stocks with less long-term investments as proxied by R&D and the number of patents. This unlocking of capital has negative externalities in turn for the underlying companies as these firms are more likely to cater to short-term demands by engaging in earnings management and lowering the accounting quality of the firm. On the other side, firms held by mutual funds with capital commitments are likelier to give long-term earnings guidance.

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†IE Business School at IE University in Madrid, Spain. Email: juanp.gomez@ie.edu
‡Nova School of Business and Economics. Email: melissa.prado@novasbe.pt
§Nova School of Business and Economics. Email: rafael.zambrana@novasbe.pt

I Introduction

In this paper we investigate whether mutual fund investors's ability to redeem no-load shares without penalty and the corresponding absence of an upfront capital commitment affects managers' investment horizon, portfolio composition, and fund performance. We also analyze whether these effects translate beyond the fund into the companies in which they invest. In particular, the company's policy for short-term earnings management and earnings guidance.

In the last two decades, the decoupling between financial advise and investment together with a higher demand for passive (and cheaper) financial assets like ETFs has put strong pressure on mutual fund fees and, in particular, the most salient ones, like front-end and back-end load fees.[1] This trend has affected the relative volume of mutual fund load share classes (those charging an explicit, one-off fee to compensate the fund's broker for distribution and financial advise) versus no-load share classes, boh for retail and institutional investors.[2]

In principle, the possibility to invest in mutual funds without paying explicit load fees for financial advice seems a positive innovation for mutual fund investors.[3] We conjecture, however, that portfolio managers learn about the investment horizon of fund investors through their choice within the menu of load shares. In particular, investors

[1]We typically talk of three load share classes (see, for instance, Nanda, Wang, and Zheng (2009)). All of them pay annual 12b-1 or level fees but differ in the size of this fee and in the locked-up period associated with load fees. The first share class, A, charges a relatively high front-end sales load when the shares are purchased and a low annual 12b-1 or level fee. This class is usually associated with investors who have a longer investment horizon. Class B shares charge a relatively lower annual fee but include a contingent deferred sales load (CDSL) fee to be paid when the shares are redeemed that can be waved if the investment is held during a minimum of years. They can also be converted into class A shares after a certain period. Sales of class B shares has been steadily decreasing in the latter years until becoming very marginal nowadays. Finally, in class C shares investors pay a relatively higher level fee and the back-end load fee can be waived if they hold the investment for some time (typically one year). This share class has been usually associated with short-term investors.

[2]The percentage of mutual fund total net assets held in front-end and back-end load share classes fell by half, from 26 percent at year-end 2008 to 13 percent at year-end 2017. By contrast, at year-end 2008, no-load share classes accounted for 53 percent of long-term mutual fund total net assets (TNA), rising to 70 percent by year-end 2017. Among the TNA invested in no-load shares, institutional investors accounted for one-third in 2008. In 2017, the split between retail and institutional investors was roughly half each, mostly due to the exponential increase in no-load shares sold through defined contribution pension plans. All figures are from Chapter 6 of the 2018 Investment Company (ICI) Fact Book: http://www.icifactbook.org/

[3]Whether this implies an effective reduction of investors' overall expense (the total expense ratio or TER) is more debatable. Some studies (e.g. Barber (2005)) argue that management companies are replacing one-off explicit load fees with higher periodic operating costs more difficult to isolate and identify by investors, neutralizing, at least partially, the cost saving arising from no-load shares.

selecting classes with sizeable front-end or back-end loads (typically, share classes A or B) rationally reveal a commitment to hold or "lock up" their position longer than investors who choose level shares (typically, share class C). In the case of no-load shares, on the contrary, there is no capital commitment and the revelation mechanism is lost. Our first objective is to analyze whether the information inferred from the choice among load shares (or its absence) affects managers' investment horizon, portfolio composition and, ultimately, fund performance. As a second objective, we zoom into the firms where mutual funds (dis)invest to find out whether investors' capital commitment is related to short-term earnings management and the horizon of earnings guidance.

We examine actively managed US Domestic Equity mutual funds over the 1992-2015 time period. For each fund in our sample, we define locked-up or committed capital as the proportion of fund TNA invested in shares with sizeable front or back-end loads (including share classes A and B). Analogously, we define the proportion of fund TNA invested in no-load shares and the proportion of fund TNA invested in level shares (including shares class C). Figure 1 illustrates the divergent trends of locked-up capital ($\%TNALocked{-}up$) and no-load shares ($\%TNANo-load$) since the early 1990s. The figure also shows the evolution of level shares ($\%TNALevel$).

We show first that, cross-sectionally, higher capital commitment is associated with lower volatility of fund flows and lower flow-performance sensitivity. We interpret this as evidence that fund flows become more stable and less sensitive to fund performance when the percentage of investors holding load shares increases, consistent with higher capital commitment. We rule out that investor differ in terms of sophistication as their flow performance convexity is similar as investors investing through other share structures.

We then study the implication of capital commitment for managers' holding duration and fund performance. Our results support a positive and significant relation between the holding horizon of investors (proxied by the percentage of committed capital) and the investment duration of portfolio managers. To proxy the later we use the investment horizon measure of Cremers and Pareek (2016). Results are qualitatively analogous when we use the horizon measures of Lan, Moneta, and Wermers (2015). This evidence is robust when we replace the manager's contemporaneous duration with one- and two-year forward looking duration, even after controlling for year and fund fixed effects. We also show that this result holds for both front- and back-end load shares; it is also robust after controlling for the holdings of institutional investors (as a proxy for sophisticated investors) and for the evaluation period of portfolio managers who receive performance-based compensation (to control for managerial explicit incentives). We also check for robustness after controlling for explicit redemption fees (besides load fees). The positive relation between locked-up capital and holding duration remains and is even stronger for funds with redemption fees, suggesting that both mechanisms are complementary.

To investigate the relation between committed capital and fund performance, we decompose managers' duration into the part projected by the fund's committed capital and the part orthogonal to committed capital. Our tests show that, in the long run (i.e., investment horizon of one year or longer), only the projected part predicts fund outperformance. This is consistent with the idea that longer holding duration is indeed related to superior performance but only when managers match the (long-term) horizon of investors.

Investors are not randomly allocated to funds. To draw inferences on causality, we follow the identification strategy employed by Kaniel and Parham (2017).[4] This strategy is based on the Wall Street Journal (WSJ) "Category Kings" ranking list. Since 1994, the WSJ publishes quarterly the top 10 ranked funds based on the previous 12-month performance across several standard categories. Analogously to Kaniel and Parham (2017), we observe a statistically significant increase in flows into funds in the (published) 10th rank relative to flows into funds in the immediate but unpublished 11th rank during the quarter following the publication of the list. Our contribution is to show that the bulk of this flow discontinuity is concentrated in level load shares, that is, those shares associated with investors with a relatively short investment horizon. We use this quasi-exogenous discontinuity to study the causal relation between changes in capital commitment and managers' duration. We hypothesize that the higher influx of capital from short-term investors into funds in rank 10 relative to those in rank 11 (with the corresponding drop in the proportion of locked-up capital) would induce managers from funds in the published rank 10 to shorten their holding duration relative to those in the consecutive but unpublished rank 11. We find strong evidence in favor of this hypothesis. This evidence is robust to the introduction of time, fund objective, family and fund fixed effects.

We investigate the potential channels through which more impatient capital may affect

[4]We thank Ron Kaniel and Robert Parham for sharing their data with us.

the investment choices, horizon and performance of portfolio managers. The first channel is liquidity risk. This may affect the manager's cash holdings as well as the liquidity of the assets included in her portfolio. Chordia (1996) shows that funds with higher capital commitment hold more cash as a buffer than similar funds with lower percentage of load shares. Managers with longer investment horizon may also profit from a (i)liquidity premium (Amihud (2002)) which becomes too risky (hence unprofitable) for managers subject to the threat of short-term liquidation. We thus expect the discontinuity in the supply of short-term capital (and the decrease in locked-up capital) between funds in ranks 10 and 11 to increase the average fund cash holdings and to reduce the overall portfolio's illiquidity. The results support both predictions.

The second channel is risky arbitrage in the presence of market frictions. Shleifer and Vishny (1997) show that long-term arbitrage is more costly than short-term arbitrage. Under perfect capital markets these arbitrage risk can be insured and this only implies that the mispricing in long-term arbitrage should be higher than in short-term arbitrage. Under market frictions, however, not all the risk may be sold off in the market, and this could affect differently short and long-term risky arbitrage.

One of these frictions is information asymmetry about the premium on R&D investment. In an perfect, frictionless market, the stock price impounds the value of a firms R&D capital along with other intangible assets, so there is no association between R&D intensity and future stock returns. However, the prospects of R&D are highly unpredictable and the accounting of R&D does record it as an intangible asset but as an expense making its valuation more complicated. This raises the possibility that stock prices do not fully incorporate the value of R&D capital and many papers have found a return premium for R&D.[5] This return predictability is more likely to be reaped by long-term investors as complexity in information processing can lead to a significant delay in impounding of information into asset prices (e.g. Cohen and Lou (2012)) and portfolio managers with short-term horizons have less incentives to invest in information acquisition about firms' long-term projects (e.g., Dow and Gorton (1994) and Goldman

[5] Chan, Lakonishok, and Sougiannis (2001) and Lev and Sougiannis (1996) demonstrate that firms with high ratios of R&D relative to market equity earn high subsequent returns; Eberhart, Maxwell, and Siddique (2004) find that large increases in R&D expenditures predict positive future abnormal returns; and Hirshleifer, Hsu, and Li (2013) show that firm-level innovative "efficiency" (measured as patents scaled by R&D) forecasts future returns. Cohen and Malloy (2013) suggests the mechanism behind the stock return predictability is likely to be the mis-valuation of the R&D ability.

and Slezak (2003)). If portfolio managers and investors have the same information, we should expect they both want to profit from this premium in the long run. Porter (1992) and Hall, Hall, Heaton, and Mankiw (1993) suggest, however, that investors with short time horizons fail to anticipate the rewards from long-term investments such as R&D. These short-term investors may therefore prefer to underweight stocks of firms with high R&D capital. Our results show that the average expenditure in R&D and the number of patents drops significantly in portfolios from funds in rank 10 relative to portfolios in funds from rank 11, hence confirming our prediction.

We conclude by investigating whether these effects have implications at the firm level. Mutual funds hold significant stakes in many companies, becoming "de facto" the marginal stakeholder in many cases. We define locked-up or committed capital ownership as the proportion of total company's shares in the hands of mutual fund investors with locked-up capital (arguably, those with a long-term investment horizon). We show that firms with higher proportion of locked-up capital engage less in earnings management and tend to offer earnings guidance (predictions on Earnings per Share or EPS) at longer horizons. Both predictions are consistent with lower managerial myopia or short-terminism. Agarwal, Vashishtha, and Venkatachalam (2018) show that impatient capital from institutional investors with career concerns causes firms to focus on short term investments.

Our work contributes to several strands of the literature. In the first place, we contribute to the empirical literature on mutual fund fees and share classes. The differences among mutual fund share classes have been previously investigated (e.g. Chordia (1996), Gil-Bazo and Ruiz-Verdú (2009)). To the best of our knowledge, we are the first to show that the investors' choice among the menu of load shares conveys valuable information that conditions managers' portfolio choice and investment horizon.

We also contribute to the literature on managerial myopia or short-terminism. This phenomenon has been approached from different angles. Agarwal, Vashishtha, and Venkatachalam (2018) for instance, show that managers may overlook profitable long-term investments due to career concerns. They show that recent regulation forcing higher disclosure of managers portfolio holdings exacerbate this concern and causes lower investing in R&D in firms where institutional investors have a significant stake. We also investigate the interaction between institutional investors and R&D capital. Our channel, however, is different: we show that investors' short-terminism may induce managers to reduce their exposure to firms with higher R&D capital. An alternative channel is compensation: managers may show myopic behavior because they receive short-term incentives (e.g., Gopalan, Milbourn, Song, and Thakor (2014)). We show that catering to short-term investors is robust even after controlling for explicit managerial incentives in their compensation contracts.

Finally, several studies have documented the under-performance of myopic, short-term managers. Cremers and Pareek (2016), for instance, show that among managers with high active share portfolios, only those with a holding duration above two years outperform on average. Lan, Moneta, and Wermers (2015) show that long-horizon funds tend to exhibit higher long-term performance mostly due to their superior stock picking ability. In these works, the role of the investors' horizon has been largely overlooked. We contribute to this strand of the literature by showing that managers with longer duration achieve superior performance not unconditionally but only when they cater to more patient investors. The "residual" component of the managers' portfolio duration (orthogonal to the investors' holding period horizon) fails to predict fund outperformance.

This paper is the first to document an important role for mutual fund charges in stabilizing flows, lengthening fund managers investment horizon and contributing in their overall fund performance while providing positive spillovers to the underlying stocks. Contrary to the common view that dis-intermediation might benefit investors (i.e., cost saving), our results suggest that a broker distribution channel provides useful information about the investors capital commitment. This helps to make portfolio management decisions that generate value to fund investors, and have positive externalities for the long-term investments of the firm held by these institutional investors.

The paper is organized as follows. Section II describes the data used. We then present our fund level results in section III. First we document the impact of capital commitments on fund flow volatility and flow-performance sensitivity in Section A. Subsequently, we examine how this impacts portfolio manager's trading horizon in Section B and her stock selection in Section C. Section D explores the consequence for fund performance. In Section E we exploit exogenous changes in fund capital commitment to establish a casual relation between capital commitment and fund manager trading behavior and portfolio choices. Finally, in Section IV we analyze the spill-over effects for the firms held by the mutual funds. Section V concludes.

II Data

We examine actively managed US Domestic Equity mutual funds over the 1992-2015 time period. We use the CRSP Survivorship-bias free Mutual Funds Database to obtain fund and management company information, in particular fund load structure information and general fund characteristics. We collect fund level redemption fees from Morningstar. From Ma, Tang, and Gomez (2019) we obtain the manager evaluation period as from compensation contracts of individual portfolio managers that the authors hand-collected. We use portfolio holdings from Thomson Reuters Mutual Fund Holdings database (S12) to construct holdings based trading horizon measures as in Lan, Moneta, and Wermers (2015). Our main trading duration measure comes directly from Cremers and Pareek (2016). All stock-level price information is from CRSP and the accounting variables come from Compustat. We also collect EPS guidance from IBES. We use the KPSS patent data (1926-2010) as obtained from Kogan, Papanikolaou, Seru, and Stoffman (2017) and the Wall Street journal "Category Kings" ranking list from Kaniel and Parham (2017). The definition of all variables used in the analysis is provided in Table A1 of the Appendix.

The funds with front and back-end loads are used to calculate the fraction of assets under management with capital commitments.[6] Typically the first share class A shares charge a front-end sales load, while B share classes pay for services provided by financial professionals through contingent deferred sales load (CDSL). The CDSL is paid if fund shares are redeemed before a given number of years of ownership. In class C shares investors pay a level fee if investors sell within a year. Given the structure of the sales charges associated with the share classes, Nanda, Wang, and Zheng (2009) argue that investors with relatively long investment horizons will prefer the A or B class with its up-front load or back-end load and lower annual charges, while those with short and uncertain horizons will prefer the C class. Whereas the No Load funds do not provide the mutual fund portfolio manager any indication as to how long they can expect the

[6] Funds tend to offer the following: Class A: Front-end load $>$ 1 percent; includes sales where front-end loads are waived. Class B: Front-end load = 0 percent and contingent deferred sales load (CDSL) $>$ 2 percent. Class C: Front-end load $\leq$ 1 percent, CDSL $\leq$ 2 percent, and 12b-1 fee $\leq$ 0.25 percent. No Load: Front-end load = 0 percent, CDSL = 0 percent, and 12b-1 fee $\leq$ 0.25 percent.

capital to be retained in the fund on average. Thus locked-up capital is the fraction of total TNA that is invested through funds with entry or exit loads (including share classes A and B).

Table 1 reports the mean, standard devation, and distribution of the fund and stock characteristics. On average 30% of funds have entry and exit loads (Locked-up Investors) of which 25% is with a front load and 5% with back-end loads. Level share classes represent on average 20% of funds, whereas 39% funds are no load funds.

In Table 2 we examine the fund and family characteristics of those funds who's asset under management are mostly unlocked (<percentile 25) or have high levels of locked up capital commitments (>percentile 75). Funds with locked up capital tend to be larger, older, team-managed, hold less cash, trade less but tend to have a higher active share and less volatile flows. In terms of family size and gross returns these two fund types appear similar.

III Fund Level Consequences of Capital Commitments

A Investor behavior and Locked-up Assets

Chordia (1996) argues that load fees can be structured to dissuade redemptions. Nanda, Wang, and Zheng (2009) finds that new classes increase the level and volatility of fund inflow by attracting investors with short and uncertain investment horizons. In Table 3, we examine the relation between capital commitments and flow stability. We find a negative relation between capital commitment and flow volatility, corroborating findings of the above mentioned papers. In examining the effect on flow-performance sensitivity we provide further validation to the premise that the percentage of TNA that is invested in share classes with front and back-end loads captures a long-term commitment. Investors respond to better performance with larger inflows, however this is significantly less for investors who purchase funds with front and back end loads. This is robust to the inclusion of time X fund style fixed effects.

We break down the flow-performance sensitivity into performance terciles to see whether the locked-up investors exhibit more or less convexity in their response to performance. This also allows us to distinguish whether these investors are more or less sophisticated than the average investor as in Gil-Bazo and Ruiz-Verdú (2009) and Ferreira, Keswani, Miguel, and Ramos (2012). There is persistence in the performance of the bottom performing funds (Carhart (1997)) whereas no persistence is observed in the those funds that come out on top in a particular year (Ippolito (1992); Sirri and Tufano (1998); Del Guercio and Tkac (2002)). Therefore if locked-up capital is proxing for investor sophistication, we would expect them to respond negatively to the low ranked funds, in other words flow out of the loser funds and not react to the top performing ones, not chase so called hot funds. In effect, we observe that the locked-up investors react similarly to the average investor in the top and bottom ranked funds as the interaction terms of the performance top and bottom tercile and locked-in capital are not statistically significant.

Overall investors in share classes with entry and exit loads are more patient, create less fund flow volatility, but are not different from the average investor in terms of sophistication.

In Table 4 we further distinguish between inflows and outflows as obtained from NSAR filings and both inflows and outflows are less volatile when the asset base is mostly investing through entry or exit loads. In the Appendix,in Table A3, we also use the continous variable of %TNAlockup to corraborate our findings beyond the high treshold level.

B How does Capital Commitment Affect Mutual Fund Trading Horizon?

We hypothesize that the amount of capital commitment influences fund investment horizon, in that managers pursue more long-term strategies by holding stocks for longer periods. Trading Duration as introduced in Cremers and Pareek (2016) is based on quarter-end holdings and measures the weighted-average length of time that the fund has held equities in the portfolio over the last five years (weighted by the size of each stock position). We regress these variables on the percentage of lock-up capital while controlling for fund and family characteristics. We also introduce time or time X objective fixed effects to control for unobservables related to the fund managers trading behavior that vary over time and within investment objective. In the third specification we also introduce family fixed effects.

There is a positive correlation between locked-up capital and the managers holding horizon, a 1% increase in assets managed with front or back-end loads increases trading horizon by between 0.3 and 0.7 quarters across the three specifications.

It might take same time for managers to adjust their portfolios so we also examine how capital commitment influences the duration of the manager a year or two later. The effect persists even when we control for the fund specific unobservables by introducing fund fixed effects, next to the time fixed effects. Within the same fund once it receives an influx of assets with explicit capital commitments it tends to increase its holding period.

In Table A4 we corroborate the holding horizon findings using alternative horizon proxies as the fund Turnover Ratio from CRSP, which is reported annually as the minimum of aggregate sales or aggregated purchases of stocks, divided by the average total net asset value of the fund or other holdings based measures of horizon proposed by Lan, Moneta, and Wermers (2015). There is a negative relation between the assets managed with entry and exit loads and turnover, consistent with longer holding periods. Generally, a fund that trades frequently tends to have high turnover and low holding horizon. The first holdings based measure from Lan, Moneta, and Wermers (2015) is the "simple" horizon measure (SHM), which calculates the holding horizon of a stock in a given fund portfolio as the length of time from the initiation of a position to the time that the stock is fully liquidated by the fund. The second measure is the "Ex-Ante Simple" measure (Ex-Ante), that uses only current and past information. A 1% increase in locked up assets under management is associated with 0.9 (SHM) and 1.6 (Ex-Ante) quarters of longer holding period. The third measure allows for the possibility that position changes may also be informative about the intended holding horizon, and tracks inventory layers of each stock held by each fund. It assumes that the stocks purchased first by a fund are sold first (FIFO). Regardless how you measure holding period horizon, there is a positive correlation between holding horizon and capital commitments.

In Table 6 column (1) we decompose the locked-up capital variable by their load structure, funds with a front-load (Front Investors), which typically consists of the A share class and investors who pay an exit load (Back Investors), typically the B share class. Both front and back end load funds are positively related to trading horizon and negatively related to turnover. Back-end charges seem to have the strongest effect, consistent with it deterring redemptions.

In the second specification we control for the percentage of TNA coming from no-load investors and again the locked-up capital coefficient remains positive and statistically significant. There is no statistically significant relation between assets under management coming from no-load investors and the holding period of the manager. To rule out that the locked-up capital is proxying for investor sophistication we also add the percentage ownership of institutional investors and this is strongly negatively related to trading duration. We also control for the managers incentives by introducing the evaluation period of their compensation contract from Ma, Tang, and Gomez (2019). The locked-up coefficient increases in magnitude and strengthens with the addition of the manager incentive control variable.

To discourage short-term trading, some mutual fund companies charge a redemption fee within a specified time-frame. This would be another way to create capital commitment. In itself the redemption fee does not significantly influence trading duration. When including the redemption fee into the specification, the locked-up capital variable remains significant and when we interact it with redemption fee we see that the load fees reinforces the effect on managers trading behavior.

Finally, we interact locked up capital with the tenure of the fund to examine the differential effect of managerial career concerns. When the manager's type is unknown and her reputation is not consolidated, she may prefer to engage is more frequent and less risky short-term gains to signal her ability at the expense of more profitable yet more uncertain long-term gains (e.g. Shleifer and Vishny (1990)). In itself funds with more seasoned managers hold stocks for longer and the interaction effect is negative suggestive of career concerns but not statistically significant.

C How does Capital Commitment Affect Mutual Fund Portfolio Selection?

Capital commitment influences fund managers trading horizon but does it also influence their investment decisions and the type of stocks portfolio managers pick? In particular, we are interested in examining whether fund managers invest differently when their underlying investors are explicitly providing a long-term capital commitment. Are managers likelier to invest in illiquid stocks and hold less cash?

Cash is a alternative liquidity management tool funds can use, however cash is associated with lower returns especially as compared to illiquid investments. Illiquid assets provide a premium (Amihud (2002)) but are costly when needed to liquidate (fire-sales) in the advent of investor redemptions therefore are managers with more locked-in capital less concerned with their fire-sale externalities and making investment decisions in the form of holding more illiquid stocks and less cash to enhance their investment efficiency?

As proxies for illiquidity of fund's stock portfolio we use the monthly average of the daily Amihud and relative bid-ask spread as in Agarwal and Zhao (2016). We also calculate the change in cash holdings as a fraction of TNA and the value-weighted stock turnover.

Additionally, funds could also invest in stocks with more long-term investments. Porter (1992) and Hall, Hall, Heaton, and Mankiw (1993) suggest that investors with short time horizons fail to anticipate the rewards from long-term investments such as R&D. Dow and Gorton (1994) and Goldman and Slezak (2003) argue for portfolio managers in particular that their short-term horizons makes them less prone to invest in information acquisition about firms' long-term projects, like investment in R&D.

In an efficient market, the stock price impounds the value of a firms R&D capital along with other intangible assets, so there is no association between R&D intensity and future stock returns. However, the prospects of R&D are highly unpredictable and the accounting of R&D does not account for it as an intangible asset but as an expense making valuing it more complicated. This raises the possibility that stock prices do not fully incorporate the value of R&D capital and many papers have found a return premium for firm innovation. Chan, Lakonishok, and Sougiannis (2001) and Lev and Sougiannis (1996) demonstrate that firms with high ratios of R&D relative to market equity earn high subsequent returns; Eberhart, Maxwell, and Siddique (2004) find that large increases in R&D expenditures predict positive future abnormal returns; and Hirshleifer, Hsu, and Li (2013) show that firm-level innovative efficiency (measured as patents scaled by R&D) forecasts future returns. Cohen and Malloy (2013) suggests the mechanism behind the stock return predictability is likely to be the mis-valuation of the R&D ability. This return predictability is more likely to be reaped by long-term investors as complexity in information processing can lead to a significant delay in impounding of information into asset prices (See Cohen and Lou (2012)). Finally, mutual fund managers are less likely to engage in a long-term commitment by influencing corporate investment decisions (Agarwal, Vashishtha, and Venkatachalam (2018)) and likely to exert this influence through their investment decisions, in other words their purchases or sales of stocks. Hence, we expect to see that, following the influx of short-term capital (identified by level shares) and the drop in locked-up capital, managers will hold less innovative stocks, that is, stocks with long-term projects.

As a proxy for (long-term) project duration we use investment related variables as R&D expenses from Compustat, and KPSS patent data (1926-2010) as obtained from Kogan, Papanikolaou, Seru, and Stoffman (2017). We calculate the value-weighted average of these measures across the holdings to obtain a fund-level quantification of the amount of R&D expense in the previous year over lagged assets and the number of patents in the previous year also scaled by lagged assets. We lag the variables to reflect the information environment the managers face at the time of their portfolio decisions.

In Table 7 we regress the percentage TNA lockup on the following quarters average fund's stock portfolio illiquidity and investment related variables. The higher the fraction of assets come from share classes with front and back loads the more illiquid the holdings of the mutual funds tends to be, as measured by Amihud or bid-ask spread. Also a 1% increase in TNAlocked-up is associated with a 2.4% drop in cash balance. Funds also trade less as measured by their holdings turnover consistent with the increase in holding duration. Funds with a higher fraction of locked-up assets also invest in more innovative firms as measured by the R&D intensity of the holdings and the number of patents over assets held within their portfolio choice.

D How does Capital Commitment Affect Fund Performance?

Our previous results suggest that long-term funds capitalize on an illiquidity and innovation premium. Cremers and Pareek (2016) and Lan, Moneta, and Wermers (2015) both find that mutual funds with longer holding periods outperform funds with short trading horizons, which is consistent with that. However, is this outperformance completely due the fund manager or is there a role for the supply of capital? Alternatively, does the unlocking of capital undermine the managers ability to provide outperformance? To answer these questions, we decompose the holding duration into the part that comes from the underlying capital supply and the part that is orthogonal to the investors share class choice. The residual should capture the managers holding horizon choice net of the capital commitment observed and the predicted holding period captures the holding horizon of fund managers due to the investors supply of capital.

To obtain horizon four-factor alphas, we follow Fama and French (1993), Kamara, Korajczyk, Lou, and Sadka (2016) and Lan, Moneta, and Wermers (2015) and calculate the risk-adjusted abnormal returns over the next n periods, ranging from one month to three years. The four-factor alpha is obtained by regressing buy-and-hold portfolio returns on the corresponding buy-and-hold Carhart four factors with the same holding horizon. The compounded alphas are then annualized. We use both gross and net returns. The gross monthly returns are computed by adding 1/12 of the expense ratio. For the share class with a front load we also add the front load assuming an average holding period of 7 years (84 months).

In Table 8 we find that the outperformance is concentrated in the predicted component of holding horizon, both when using gross or net fund returns, and across the different holding periods. Controlling for fund characteristics and time x fund objective fixed effects, a one-standard-deviation increase in predicted duration raises the net (gross) fund four-factor alpha by about 2.3 basis points on an annualized basis (2.4) and 3.8 (3.9) basis points per year over the next 3 years. This suggest that investors can undermine the fund managers ability to create out-performance if they are impatient. The component that is orthogonal to the investor share class choice is only significant in the next month but not over the longer holding periods.

E Regression Discontinuity Design: WSJ Category Kings

In the previous results we find a positive correlation between holding horizon of mutual fund managers and the amount of locked-up capital she manages. A potential concern is that of reverse causality, are managers catering to the investment horizon of investors or are rather investors "chasing" a particular managerial horizon (style)? There may also exist an omitted variable in our regressions that covaries simultaneously with committed capital and the fund variables that we study, hence spuriously driving our results.

To establish a casual relation between capital commitment and fund manager trading behavior, we exploit the Wall Street journal "Category Kings" top 10 ranking list from Kaniel and Parham (2017).

Kaniel and Parham (2017) show a strong discontinuity in capital flows for funds who make it onto the WSJ list versus funds who do not. The WSJ Rankings are based on the previous 12 month returns of a fund and we therefore hypothesize that it should attract more short term investors, who are unlikely to make a long-term capital commitment.

This allows use to exploit exogenous changes in fund capital commitment from the quasi-random assignment around the 10th rank and determine if there is a significant treatment effect of short horizon capital (less capital commitment) on managers trading behavior as compare to funds who are almost identical but don't make the list.

Figure 2 corroborates the findings of Kaniel and Parham (2017) in that there is a sharp discontinuity in fund flows during the post-publication quarter, showing that the WSJ list has a casual effect on mutual fund investor behavior. We further distinguish between the flows coming from the different share class categories in Figures 3 through 5. In line with our hypothesis it seems the flow discontinuity comes from the level loads (C share class), which are the short term investors. There is no significant flow discontinuity among the Locked-up investors. In terms of the actual weight allocated to locked-up assets there seems to be a reduction after the ranking but economically the effect is non-significant, see Figure 6.

We also show this in the differences in means between funds ranked 10 and funds ranked 11 in Table 9. There is no statistical difference in flows coming from locked-up investors but highly significant difference in load level flows. Published funds attract thus more short term investors to their funds and this in turn influences the fund manager investment behavior by reducing their holding horizon in the subsequent quarter. We also observe a significant increase in active share and a reduction in locked-up capital in the following quarter.

In Table 10 we regress the holding horizon of mutual funds on the discontinuity while controlling for the rank and fund and family characteristics. We indeed observe an increase in short term capital flow makes managers reduce their trading horizon. The results are consistent even when introducing various fixed effects. Within funds, less locked-up capital leads to a lower trading horizon.

Capital commitment influences fund managers trading horizon and next we explore the casual impact of having more short-term capital on their investment decisions. In Table 11 we see that more short term capital leads managers to adjust their liquidity of their portfolio. The higher the short term capital inflow the less fund managers invest in illiquid securities and the higher their cash balance is, there is also a positive impact on holdings turnover. Inflows of assets that seem to come from short-term investors significantly changes the fund managers liquidity management choices and trading behavior. In Table

11 we do not find that funds managing less locked-in investor capital decrease their holdings in the following quarter in stocks with more long-term investments as proxied by R&D expenses over assets and the average number of patents over assets among their holdings. The shock to short-term flows is primarily affecting funds liquidity management.

IV Stock Level Consequences of Capital Commitments

A Stock Level Implications

Capital commitment influences fund managers investment decisions, in that they invest in more long-term stocks and hold their stocks for longer periods of time if most of their investor base are choosing to lock-in their capital. Next, we ask how does this in turn influences firms information production? Mutual fund hold significant stakes in many companies, becoming the marginal stakeholder in many cases. On average mutual funds with entry and exit loads hold about 10% of shares outstanding in the average stock. Additionally, mutual funds with long-term horizon are probably attracted to firms held by long-term clientele in general and this matching reinforces the effect. So we ask, are firms also catering to the long-term (short-term) information demands of their institutional investors when these funds who hold them are more long-term oriented (short-term)?

Accrual earnings management is one way firms can present their firm in a way that looks more attractive to short-term investors. We use Absolute Discretionary Accruals as in Dechow, Sloan, and Sweeney (1995) and a measure of real activities manipulation in the form of abnormal discretionary expenses as in Roychowdhury (2006) to determine whether firms held by mutual funds with more capital commitments are associated with less earnings management. As this involves a stock-level analysis, we construct a stock-level metric that reflects aggregate holdings information from locked up capital share classes as the percentage ownership of the stock held by funds with entry or exit loads ($\%Ownlockup$). We regress the Absolute Discretionary Accruals onto $\%Ownlockup$ accounting for the control variables as commonly used in the accounting literature. A remaining potential concern is that unobservable variables may be correlated with both accounting quality and locked-up ownership, for this reason we include stock, year, year X industry fixed-effects.

In Table 12 we observe a strong negative relation between locked-up ownership and earnings management. A 1% increase in mutual fund ownership with locked up capital share classes reduces the use of discretionary accruals by 1.2%. The results are robust to the inclusion of institutional ownership. A 1% increase in mutual fund ownership with locked-up capital share classes also reduces the use of abnormal expenses by 2.6%. Stocks held by funds with front and back end load exhibit lower levels of accrual-based or real earnings management and higher earnings quality.

Earnings guidance allows a company to communicate its expectations to the market. Most firms, around 30%, tend to provide EPS targets for the next fiscal year but some firms provide even long-term forecasts of up to 5 years. If management recognizes that their investor base has a more long-term investment horizon would they be likelier to provide long-term guidance? To examine this, we run a logit of different horizon EPS targets onto %Ownlockup. In Table A4 we report the odd ratios. For a forecast horizon of 1 year we observe a negative relation between locked-up ownership and the likelihood of providing an EPS forecast. Steadily the likelihood increases for longer forecast horizons. For a horizon of 5 years firms with ownership of 1% by mutual funds with locked up capital share classes are 3.9 times more likely to provide this long-term guidance. In terms of the control variables, compared to firms that regularly issue short-term guidance, long-term earnings guidance firms are larger, have lower ROA, lower return volatility, and more institutional ownership. Overall, firms with more locked-up ownership are less likely to promote the market's focus on the short-term, and likelier to provide EPS targets for the following 3 through 5 years.

The pressure on mutual funds to reduce fees and forgo capital commitments appears to have real consequences for the underlying holdings. We find that less capital commitment is associated with less disclosure incentives and overall deterioration of accounting quality of the firm. Whereas firms held by mutual funds with capital commitments are likelier to provide long-term EPS guidance improving the information production for long-term investors and are less likely to cater to short-termism in providing short term EPS targets. These results add to the larger literature on financial reporting and disclosure properties and managerial myopia (Edmans and Huang (2018); Kraft, Vashishtha, and Venkatachalam (2018)) by showing that the underlying ownership and the investment horizon of the retail investors matter.

V Conclusion

In this paper, we argue that mutual fund managers can extract valuable information from the investors' choice among different load share-classes regarding their investment horizon. In particular, investors selecting classes with sizeable front-end or back-end loads (typically, share classes A or B) rationally reveal a commitment to hold or "lock up" their position longer than investors who choose level shares (typically, share class C). In the case of no-load shares, there is no capital commitment and the revelation mechanism is lost.

We examine whether the trend to not lock-in the investment period of investors has implications for mutual funds, fund investors, and the firms held by mutual funds. We define locked-up or committed capital as the proportion of a fund's TNA invested in funds with front or back-end loads (including share classes A and B).

We find that the lack of explicit capital commitment affects fund-trading horizon, stock selection, and in turn overall fund performance. We exploit the Wall Street journal (WSJ) "Category Kings" ranking list from Kaniel and Parham (2017) to establish a casual relation between capital commitment and fund manager trading behavior. Mutual fund managers with less capital commitment hold shares for shorter periods of time and it also influences their investment choices in that they hold more cash and more liquid stocks with less long-term investments as proxied by R&D and the number of patents.

The disappearance of load shares is creating important shadow costs both for the funds and the underlying stocks. The firms held by mutual funds without explicit capital commitments are likelier to cater to short-term demands by engaging in earnings management practices and lowering the accounting quality of the firm, while firms held predominantly by load mutual fund share classes provide long-term earnings guidance and are less likely to fixate on short-term earnings targets.

This paper is the first to document an important role for mutual fund charges in stabilizing flows, lengthening fund managers investment horizon and contributing in their overall fund performance while providing positive spillovers to the underlying stocks. Contrary to the common view that dis-intermediation might benefit investors (i.e., cost saving), our results suggest that a broker distribution channel provides useful information about the investors capital commitment. This helps to make portfolio management decisions that generate value to fund investors, and have positive externalities for the long-term investments of the firm held by these institutional investors.

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Table 1: Summary Statistics of Fund Characteristics

This table reports mean, standard deviation, 25th-percentile, median, and the 75th-percentile of fund characteristics in Panel A, and stock characteristics in Panel B. Variable descriptions

	Descriptive Statistics				
	Mean	Sd	p25	p50	p75
Panel A: Fund Characteristics					
Locked-up Investors	30.03	39.18	0.00	0.29	69.46
Front Investors	24.82	34.57	0.00	0.01	49.07
Back Investors	5.21	14.87	0.00	0.00	0.45
Level Investors	19.55	33.27	0.00	1.45	20.04
No Load Investors	39.31	44.47	0.00	6.68	97.31
Fund TNA	4107.33	330630.67	51.20	256.60	1258.22
Fund Age (yrs)	11.96	12.66	3.83	8.42	15.17
Family TNA	79014.19	196140.48	1459.90	11842.90	67449.80
Team Managed	0.58	0.49	0.00	1.00	1.00
Fund Cash	4.89	8.67	0.70	2.61	5.80
Turnover	0.93	1.15	0.30	0.62	1.11
Expense Ratio	1.25	0.53	0.94	1.21	1.53
Gross Return	0.77	5.32	-1.92	1.14	3.84
Net Returns	0.66	5.32	-2.02	1.04	3.74
Fund Flows	2.31	12.67	-2.71	0.86	4.88
Panel B: Stock Characteristics					
%OwnLockup	0.10	0.13	0.00	0.05	0.16
Institutional Ownership	0.42	0.30	0.15	0.38	0.67
lnAssets	6.25	2.16	4.67	6.17	7.67
BM	0.64	0.62	0.28	0.51	0.84
Firm Age	13.02	11.51	4.00	10.00	19.00
Leverage	0.92	2.28	0.03	0.40	1.12
Loss	0.25	0.44	0.00	0.00	1.00
OCF Vol	0.05	0.08	0.02	0.03	0.06
Sales Vol	0.15	0.20	0.04	0.09	0.19
% Δ Cash Sales	0.17	0.65	-0.04	0.08	0.24
Δ ROA	-0.00	0.07	-0.02	-0.00	0.01

Table 2: Difference in means in funds with (Un)Locked-up Investors

This table present the mean values of fund and family characteristics for funds who's asset under management are mostly unlocked (<percentile 25), and funds who manage assets with capital commitments (>percentile 75). * denotes significance at the 10% level, ** denotes significance at the 5% level and *** denotes significance at the 1% level.

	T-test by locked-up investors		
	Unlocked Investors	Locked Investors	Difference
Fund TNA	1184.543	2792.731	-1608.188***
Fund Age (yrs)	11.025	15.272	-4.248***
Family TNA	85391.912	85202.044	189.868
Team Managed	0.537	0.589	-0.052***
Fund Cash	5.255	4.322	0.934***
Turnover	0.950	0.855	0.096***
Expense Ratio	1.124	1.452	-0.328***
Gross Return	0.780	0.748	0.031
Net Returns	0.685	0.627	0.058***
Fund Flows	1.642	0.965	0.677***
Flow Volatility	5.805	4.755	1.050***

Table 3: Fund Flows and Capital Commitment

The table lists the results of regressing fund flow volatility and levels on investor capital commitment and fund characteristics. The dependent variables are flow volatility - the standard deviation of monthly flows in the next 24 months (columns 1-2), and the level of fund flows (column 3-6). We measure investor capital commitment with High %TNALocked-up - an indicator variable if the fraction of total TNA that is invested through share class with entry or exit loads (including share classes A and B) are above median. * denotes significance at the 10% level, ** denotes significance at the 5% level and *** denotes significance at the 1% level.

	Fund Flow Volatility		Fund Flows			
	(1)	(2)	(3)	(4)	(5)	(6)
High %TNALocked-up	-1.145***	-0.998***	0.235	0.321**	0.334	0.397
	(-5.99)	(-5.11)	(1.54)	(2.12)	(1.32)	(1.58)
Performance Rank			1.747***	1.811***		
			(10.78)	(11.47)		
High %TNALocked-up × Performance Rank			-0.357*	-0.463**		
			(-1.77)	(-2.34)		
Low Rank					0.496	0.381
					(0.47)	(0.37)
High %TNALocked-up × Low Rank					-0.824	-0.769
					(-0.62)	(-0.59)
Mid Rank					1.786***	1.873***
					(8.48)	(9.20)
High %TNALocked-up × Mid Rank					-0.536**	-0.644**
					(-2.04)	(-2.56)
High Rank					2.447**	2.507**
					(2.43)	(2.55)
High %TNALocked-up × High Rank					1.751	1.495
					(1.36)	(1.19)
Size (log(TNA))	-0.617***	-0.523***	-0.488***	-0.466***	-0.487***	-0.463***
	(-13.90)	(-13.03)	(-17.93)	(-16.51)	(-17.88)	(-16.47)
Family Size	0.182**	-0.045	0.080	0.065	0.080	0.065
	(2.26)	(-0.63)	(1.62)	(1.32)	(1.63)	(1.32)
Family Funds (log)	0.084	0.237**	0.146**	0.149**	0.148**	0.153**
	(0.74)	(2.23)	(2.09)	(2.15)	(2.14)	(2.21)
Expense Ratio	1.304***	0.410**	-0.396***	-0.490***	-0.410***	-0.511***
	(8.03)	(2.27)	(-4.20)	(-4.65)	(-4.35)	(-4.85)
Av Front Loads	5.352	5.507	-2.351	-2.027	-2.503	-2.197
	(1.33)	(1.59)	(-0.96)	(-0.87)	(-1.03)	(-0.94)
Av Back Loads	-20.608***	-14.558***	3.429	4.121	3.760	4.448
	(-3.56)	(-2.75)	(0.85)	(1.07)	(0.94)	(1.16)
Fund Age (log)	0.036	-0.089	-0.354***	-0.412***	-0.340***	-0.398***
	(0.36)	(-1.01)	(-6.78)	(-7.69)	(-6.52)	(-7.45)
Time FE	Y	N	Y	N	Y	N
Time x Objective FE	N	Y	N	Y	N	Y
Observations	256745	256745	239471	239471	239471	239471
Adjusted R2	0.184	0.265	0.237	0.313	0.237	0.313

Table 4: Flow Volatility and Capital Commitment: Inflows vs Outflows

The table lists the results of regressing fund flow volatility on investor capital commitment and fund characteristics. The dependent variables are the volatility (standard deviation in the next 24 months) of monthly net flows (columns 1-2), total flows (column 2-4), inflows (column 5-6), and outflows (column 7-8). We measure investor capital commitment with High %TNALocked-up - an indicator variable if the fraction of total TNA that is invested through share class with entry or exit loads (including share classes A and B) are above median. * denotes significance at the 10% level, ** denotes significance at the 5% level and *** denotes significance at the 1% level.

	Fund Flow Volatility							
	Net		Total		Inflows		Outflows	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
High %TNALocked-up	-1.354***	-1.242***	-2.207***	-2.272***	-1.423***	-1.399***	-1.182***	-1.182***
	(-8.52)	(-7.32)	(-4.65)	(-4.53)	(-5.04)	(-4.65)	(-5.94)	(-5.65)
Size (log(TNA))	-0.508***	-0.445***	-0.823***	-0.769***	-0.565***	-0.505***	-0.314***	-0.282***
	(-15.70)	(-14.87)	(-9.90)	(-8.96)	(-11.25)	(-10.02)	(-9.82)	(-8.66)
Family Size	0.033	-0.044	-0.147	-0.236	-0.063	-0.140	-0.031	-0.086
	(0.53)	(-0.77)	(-0.83)	(-1.44)	(-0.59)	(-1.41)	(-0.42)	(-1.22)
Family Funds (log)	0.142	0.147*	0.538**	0.595**	0.351**	0.374**	0.142	0.169
	(1.59)	(1.70)	(1.98)	(2.26)	(2.17)	(2.39)	(1.25)	(1.52)
Expense Ratio	0.301**	0.012	0.561*	0.356	0.563***	0.333	0.234*	0.078
	(2.48)	(0.08)	(1.68)	(0.87)	(2.82)	(1.34)	(1.78)	(0.49)
Av Front Loads	0.670	1.574	-2.917	-2.153	-0.614	0.410	-1.876	-1.422
	(0.32)	(0.75)	(-0.63)	(-0.46)	(-0.19)	(0.13)	(-1.02)	(-0.78)
Av Back Loads	-18.147***	-16.564***	-38.730***	-37.196***	-29.282***	-27.472***	-14.235***	-13.199***
	(-5.25)	(-4.89)	(-4.42)	(-4.34)	(-5.39)	(-5.12)	(-3.83)	(-3.64)
Fund Age (log)	0.022	-0.055	0.041	-0.018	-0.005	-0.079	0.096*	0.067
	(0.33)	(-0.84)	(0.28)	(-0.12)	(-0.06)	(-0.82)	(1.76)	(1.21)
Time FE	Y	N	Y	N	Y	N	Y	Y
Time x Objective FE	N	Y	N	Y	N	Y	N	Y
Observations	141705	141705	141705	141705	141705	141705	141705	141705
Adjusted R2	0.254	0.311	0.133	0.175	0.146	0.194	0.132	0.176

Table 5: Manager Trading and Investors Locked-up Assets

The table lists the results of following regression specification: $HorizonMeasure_{i,t} = \beta_0 + \beta_1 \%TNALockedup_{i,t} + controls + \epsilon_{i,t}$,where $HorizonMeasure_{i,t}$ is the Cremers and Pareek (2015) investment horizon measure for fund i at month t, $t+12$, or $t+24$ using quarter-end holdings.%TNALockedup is the fraction of total TNA that is invested through share classes with entry or exit loads (including share classes A and B). * denotes significance at the 10% level, ** denotes significance at the 5% level and *** denotes significance at the 1% level.

	Trading Duration t			Trading Duration t+12	Trading Duration t+24
	(1)	(2)	(3)	(4)	(5)
%TNALocked-up	0.688***	0.326**	0.688***	0.329**	0.363**
	(4.03)	(2.16)	(3.70)	(2.03)	(2.13)
Size (log(TNA))	0.200***	0.245***	0.245***	0.346***	0.390***
	(5.59)	(7.48)	(7.15)	(10.83)	(11.72)
Family Size	0.082	0.071	-0.070	0.079	0.087*
	(1.46)	(1.38)	(-1.18)	(1.57)	(1.72)
Family Funds (log)	-0.300***	-0.313***	-0.486***	-0.378***	-0.362***
	(-3.38)	(-3.90)	(-4.47)	(-4.89)	(-4.68)
Expense Ratio	-1.902***	-1.269***	-1.834***	-0.559***	-0.441***
	(-11.24)	(-8.75)	(-9.87)	(-4.53)	(-3.49)
Av Front Loads	-3.402	1.217	-7.459**	-1.766	-2.152
	(-0.99)	(0.40)	(-2.45)	(-1.06)	(-1.24)
Av Back Loads	-7.383	-1.733	-12.611***	-2.157	-1.584
	(-1.56)	(-0.40)	(-3.07)	(-0.96)	(-0.72)
Fund Age (log)	0.093	0.121	-0.018	0.291**	0.286**
	(1.00)	(1.43)	(-0.20)	(2.53)	(2.43)
Fund Cash	-0.007	-0.007	-0.018***	-0.005	-0.002
	(-1.12)	(-1.26)	(-3.27)	(-1.31)	(-0.41)
Manager Tenure	0.897***	0.975***	0.703***	0.448***	0.329***
	(9.56)	(11.35)	(9.21)	(7.77)	(5.64)
Fund Flows	-0.006***	-0.005***	-0.006***	-0.003***	-0.001**
	(-6.48)	(-5.97)	(-9.54)	(-6.83)	(-2.05)
Flow Volatility	-0.024***	-0.023***	-0.035***	-0.020***	-0.021***
	(-3.43)	(-4.28)	(-7.49)	(-6.13)	(-6.21)
Time FE	Y	N	Y	Y	Y
Time x Objective FE	N	Y	N	N	N
Family FE	N	N	Y	N	N
Fund FE	N	N	N	Y	Y
Observations	393029	393029	388680	366442	339807
Adjusted R2	0.251	0.370	0.402	0.293	0.272

Table 6: Manager Trading, Capital Commitment, Compensation and Tenure

The table lists the results of following regression specification: $HorizonMeasure_{i,t} = \beta_0 + \beta_1 \%TNALockedup_{i,t} + controls + \epsilon_{i,t}$,where $HorizonMeasure_{i,t}$ is the Cremers and Pareek (2015) investment horizon measure for fund i at time t.%TNALockedup is the fraction of total TNA that is invested through funds with entry or exit loads (including share classes A and B). The manager evaluation period comes from Ma, Tang and Gomez (2019), the redemption fee is obtained from Morningstar, and manager tenure from CRSP. * denotes significance at the 10% level, ** denotes significance at the 5% level and *** denotes significance at the 1% level.

	Trading Duration					
	(1)	(2)	(3)	(4)	(5)	(6)
Back Investors	2.281***					
	(6.80)					
Front Investors	0.488***					
	(2.81)					
%TNALocked-up		0.525***	0.469***	1.596***	0.568***	0.783***
		(2.63)	(2.63)	(4.75)	(3.11)	(4.73)
NoLoad Investors		-0.318*				
		(-1.73)				
Institutional Investors			-1.008***			
			(-5.07)			
Manager Evaluation Period				0.219		
				(1.22)		
Redemption Fee					-0.235	
					(-1.17)	
Redemption Fee × %TNALocked-up					0.700**	
					(2.14)	
High Manager Tenure						1.067***
						(6.95)
%TNALocked-up × High Manager Tenure						-0.306
						(-1.31)
Manager Tenure	0.891***	0.897***	0.907***	1.004***	0.897***	
	(9.49)	(9.61)	(9.78)	(5.86)	(9.57)	
Size (log(TNA))	0.178***	0.204***	0.201***	0.260***	0.201***	0.225***
	(4.96)	(5.72)	(5.70)	(3.63)	(5.65)	(6.26)
Family Size	0.071	0.070	0.047	0.312***	0.082	0.070
	(1.26)	(1.24)	(0.84)	(3.01)	(1.47)	(1.24)
Family Funds (log)	-0.312***	-0.281***	-0.241***	-0.799***	-0.303***	-0.314***
	(-3.53)	(-3.13)	(-2.71)	(-4.58)	(-3.42)	(-3.52)
Expense Ratio	-2.111***	-1.968***	-2.068***	-2.472***	-1.893***	-1.893***
	(-11.51)	(-11.41)	(-12.40)	(-6.52)	(-11.36)	(-11.16)
Av Front Loads	-1.764	-3.306	-1.336	-0.396	-3.433	-2.122
	(-0.51)	(-0.96)	(-0.39)	(-0.06)	(-1.00)	(-0.60)
Av Back Loads	-12.484***	-8.681*	-8.090*	0.158	-6.521	-5.823
	(-2.64)	(-1.84)	(-1.72)	(0.02)	(-1.40)	(-1.21)
Fund Age (log)	0.146	0.082	0.052	-0.040	0.101	0.206**
	(1.59)	(0.89)	(0.57)	(-0.22)	(1.09)	(2.18)
Fund Cash	-0.005	-0.007	-0.007	-0.005	-0.007	-0.005
	(-0.78)	(-1.14)	(-1.12)	(-0.51)	(-1.08)	(-0.82)
Fund Flows	-0.005***	-0.005***	-0.006***	-0.006***	-0.005***	-0.006***
	(-6.72)	(-7.02)	(-7.59)	(-3.80)	(-7.07)	(-7.31)
Flow Volatility	-0.022***	-0.024***	-0.026***	-0.049***	-0.024***	-0.027***
	(-3.15)	(-3.44)	(-3.90)	(-5.07)	(-3.47)	(-3.89)
Observations	393029	393029	393029	96529	393029	393029
Adjusted R2	0.254	0.251	0.256	0.318	0.251	0.245

Table 7: Stock Selection and Investors Locked-up Assets

The table lists the results of following stock-level regression specification: $StockCharacteristic_{i,t+3} = \beta_0 + \beta_1 \%TNALockedup_{i,t} + controls + \epsilon_{i,t}$,where $StockCharacteristic_{i,t+3}$ reflects the following liquidity proxies: the average Amihud illiquidity measure across the portfolio, the value weighted bid-ask spread across the portfolio, the change in cash holdings as fraction of TNA, and the value weighted stock turnover. The value weighted average R&D expense over assets from Compustat, or the value weighted number of patents from KPSS patent data (1926-2010) as obtained from Kogan, Papanikolaou, Seru, and Stoffman (2017) over assets. These variables are measured during the next quarter. %TNALockedup is the fraction of total TNA that is invested through funds with entry or exit loads (including share classes A and B). * denotes significance at the 10% level, ** denotes significance at the 5% level and *** denotes significance at the 1% level.

	Iliquidity	Spread	Cash Holdings	Turnover	R&D	Patents
%TNALocked-up	0.707***	0.060***	-0.024**	-0.067**	0.002**	0.002**
	(2.60)	(7.44)	(-2.08)	(-2.13)	(2.09)	(2.35)
Size (log(TNA))	-0.354***	-0.004***	0.001	-0.003	0.001***	-0.000
	(-7.46)	(-2.97)	(0.52)	(-0.28)	(3.52)	(-0.16)
Family Size	-0.187**	-0.005*	0.000	0.009	-0.000	0.000
	(-2.03)	(-1.86)	(0.14)	(1.16)	(-0.58)	(1.15)
Family Funds (log)	-0.065	-0.030***	-0.002	0.087***	-0.001	-0.001***
	(-0.57)	(-7.29)	(-0.98)	(4.81)	(-1.28)	(-4.77)
Expense Ratio	0.123	-0.010*	0.011*	-0.072*	0.003***	0.001**
	(0.62)	(-1.72)	(1.92)	(-1.77)	(3.71)	(2.32)
Av Front Loads	10.031***	0.425***	0.460	-0.944**	-0.026**	0.002
	(4.19)	(5.44)	(0.72)	(-2.33)	(-2.03)	(0.37)
Av Back Loads	1.206	0.137	-0.836	-0.823	0.031**	0.003
	(0.47)	(1.37)	(-0.82)	(-1.30)	(2.42)	(0.52)
Fund Age (log)	-0.744***	-0.144***	0.002	0.190***	-0.005***	-0.003***
	(-7.03)	(-39.16)	(0.41)	(7.98)	(-11.40)	(-15.08)
Manager Tenure	-0.115	0.002	0.001	-0.011	0.001***	0.000*
	(-1.51)	(0.67)	(0.27)	(-0.71)	(3.86)	(1.91)
Fund Flows	-0.009***	-0.000***	0.001	-0.000***	0.000***	0.000***
	(-8.59)	(-16.67)	(1.01)	(-2.90)	(8.33)	(6.36)
Fund FE	Y	Y	Y	Y	Y	Y
Observations	371558	371520	432687	371558	371558	307579
Adjusted R2	0.077	0.492	0.000	0.040	0.030	0.052

Table 8: Fund Performance and Investors Locked-up Assets

The table lists the results of following regression specification: $FundPerformance_{i,t} = \beta_0 + \beta_1 Duration_{i,t} + controls + \epsilon_{i,t}$,where $FundPerformance_{i,t}$ measures the horizon four-factor alphas of fund i at time t using the gross returns (before fees) or net returns. The gross monthly returns are computed by adding 1/12 of the expense ratio. For the share class with a front load we also add the front load assuming an average holding period of 7 years (84 months). To obtain horizon four-factor alphas, we follow Fama and French (1993), Kamara et al. (2015) and Lan et al. (2018) and calculate the risk-adjusted abnormal returns over the next n periods, ranging from one month to three years. The four-factor alpha is obtained by regressing buy-and-hold portfolio returns on the corresponding buy-and-hold Carhart four factors with the same holding horizon. The compounded alphas are then annualized. We decompose the holding duration into the part that comes from the underlying capital supply and the part that is orthogonal to the investors share class choice. The residual should capture the managers holding horizon choice net of the capital commitment observed among investors and the predicted holding period captures the holding horizon of fund managers due to the investors supply of capital. * denotes significance at the 10% level, ** denotes significance at the 5% level and *** denotes significance at the 1% level.

	Carhart 4F Alpha (Gross)				Carhart 4F Alpha (Net)			
	1m	12m	24m	36m	1m	12m	24m	36m
Duration Predicted	0.033**	0.030***	0.046***	0.084***	0.028**	0.024***	0.038***	0.073***
	(2.37)	(3.41)	(5.57)	(8.76)	(2.00)	(2.72)	(4.66)	(7.73)
Duration Residual	0.007***	-0.000	-0.001	0.001	0.007***	0.000	-0.000	0.001
	(3.60)	(-0.36)	(-0.66)	(0.37)	(3.90)	(0.06)	(-0.15)	(0.92)
Family Size	0.016**	0.006	0.001	0.004	0.014**	0.004	-0.001	0.002
	(2.28)	(1.53)	(0.35)	(0.86)	(2.05)	(1.07)	(-0.28)	(0.43)
Size (log(TNA))	-0.036***	0.000	0.016***	0.022***	-0.036***	0.001	0.017***	0.022***
	(-3.79)	(0.07)	(3.05)	(3.75)	(-3.71)	(0.19)	(3.18)	(3.66)
Expense Ratio	0.052	0.095***	0.131***	0.224***	-0.056	-0.024	-0.000	0.079***
	(1.41)	(4.06)	(6.08)	(8.57)	(-1.50)	(-1.03)	(-0.01)	(3.05)
Fund Age (log)	-0.025	-0.067***	-0.078***	-0.044***	-0.028*	-0.070***	-0.083***	-0.050***
	(-1.55)	(-6.35)	(-7.91)	(-3.80)	(-1.76)	(-6.58)	(-8.28)	(-4.39)
Fund Cash	0.004**	0.003***	0.004***	0.006***	0.004**	0.003***	0.004***	0.006***
	(2.00)	(3.26)	(4.58)	(5.98)	(2.05)	(3.41)	(4.69)	(5.99)
Fund Flows	0.008***	0.004***	0.003***	0.003***	0.008***	0.004***	0.003***	0.002***
	(10.16)	(10.34)	(11.46)	(8.40)	(10.09)	(10.07)	(10.69)	(7.48)
Past Year Returns	0.746***	1.649***	1.131***	0.698***	0.756***	1.562***	1.006***	0.549***
	(6.53)	(19.26)	(18.78)	(10.11)	(6.61)	(18.23)	(16.71)	(7.92)
Flow Volatility	-0.004**	0.002**	0.000	-0.000	-0.004**	0.002*	0.000	-0.001
	(-2.37)	(1.96)	(0.49)	(-0.43)	(-2.45)	(1.87)	(0.30)	(-0.57)
Time x Objective FE	Y	Y	Y	Y	Y	Y	Y	Y
Observations	394030	394081	394081	394081	394030	394081	394081	394081
Adjusted R2	0.254	0.327	0.338	0.268	0.254	0.322	0.333	0.270

Table 9: T-test: Discontinuity in Locked-up Investors

This table shows the differences in means in the quarter after funds are ranked 10 or 11 following the Wall Street journal "Category Kings" ranking list from Kaniel and Parham (2017). * denotes significance at the 10% level, ** denotes significance at the 5% level and *** denotes significance at the 1% level.

	T-Test Analysis: Ranked 10 vs Ranked 11		
	Ranked 10	Ranked 11	Difference
Next Quarter Flows	12.131	7.482	4.649*
Next Quarter Load-Level Flows	23.309	12.244	11.065**
Next Quarter Locked-up Flows	15.711	10.877	4.834
Next Quarter No-Load Flows	16.598	13.112	3.487
Next Year Turnover	0.957	0.969	-0.013
Next Year Duration	4.812	5.367	-0.554*
Next Year Active Share	0.860	0.832	0.028**
Next Year Evaluation Period	4.516	4.737	-0.221
Next Quarter Locked_up Assets	0.242	0.287	-0.045*
Next Quarter NoLoad Assets	0.403	0.368	0.034
Next Quarter Level Assets	0.229	0.199	0.030
Observations	1140		

Table 10: Manager Trading and Investors Locked-up Assets: WSJ RDD Approach

The table lists the results of following fund-level regression specification: $HorizonMeasure_{i,t+3} = \beta_0 + \beta_1 Discontinuity + \beta_2 Rank + \beta_3 \%TNALockedup_{i,t} + controls + \epsilon_{i,t}$,where $HorizonMeasure_{i,t+3}$ is the Cremers and Pareek (2016) investment horizon measure for fund i in the following quarter, at time $t+3$. %TNALockedup is the fraction of total TNA that is invested through share classes with entry or exit loads (including share classes A and B)..* denotes significance at the 10% level, ** denotes significance at the 5% level and *** denotes significance at the 1% level.

	Trading Duration$_{t+3}$			
	(1)	(2)	(3)	(4)
Discontinuity	-0.359***	-0.443***	-0.327***	-0.220***
	(-3.47)	(-4.28)	(-4.31)	(-3.92)
Rank	0.002***	0.001	0.002***	0.000
	(4.00)	(1.15)	(3.68)	(0.28)
Size (log(TNA))	0.399***	0.409***	0.415***	0.415***
	(8.72)	(9.12)	(9.45)	(9.54)
Family Size	0.123*	0.148**	-0.029	0.080
	(1.71)	(2.09)	(-0.38)	(1.35)
Family Funds (log)	-0.571***	-0.603***	-0.150	-0.276***
	(-5.52)	(-5.90)	(-1.22)	(-3.24)
Expense Ratio	-1.526***	-1.311***	-1.621***	-0.525***
	(-7.66)	(-6.50)	(-6.61)	(-2.84)
Av Front Loads	5.689	3.105	-6.089	-1.813
	(1.31)	(0.73)	(-1.53)	(-0.96)
Av Back Loads	2.350	1.297	-10.435**	-5.079**
	(0.42)	(0.23)	(-2.22)	(-2.33)
Fund Age (log)	0.394***	0.211*	0.077	0.575***
	(3.31)	(1.81)	(0.63)	(3.23)
Fund Cash	-0.004	-0.001	-0.027***	-0.015***
	(-0.53)	(-0.16)	(-4.17)	(-2.90)
Fund Flows	-0.017***	-0.016***	-0.012***	-0.008***
	(-9.23)	(-9.03)	(-9.37)	(-7.71)
Time FE	Y	N	Y	Y
Time x Objective FE	Y	N	Y	Y
Family FE	Y	N	Y	Y
Fund FE	Y	N	Y	Y
Observations	62495	62495	62477	62495
Adjusted R2	0.183	0.220	0.408	0.204

Table 11: Stock Selection and Investors Locked-up Assets: WSJ RDD Approach

The table lists the results of following stock-level regression specification: $StockCharacteristic_{i,t} = \beta_0 + \beta_1 Discontinuity + \beta_2 Rank + \beta_3 \%TNALockedup_{i,t} + controls + \epsilon_{i,t}$,where $StockCharacteristic_{i,t}$ reflects either the value or equally weighted average R&D expense from Compustat, the average Amihud illiquidity measure, the trading spread, the change in fund cash holdings as fraction of TNA, and the stock turnover. These variables are measured during the next quarter. We regress these measures on the on the discontinuity coming from WSJ rank while controlling for the rank, the fund and family characteristics and also introduce fund fixed effects to control for the influence of fund variation on the stock choice.* denotes significance at the 10% level, ** denotes significance at the 5% level and *** denotes significance at the 1% level.

	Iliquidity	Spread	Cash Holdings	Turnover	R&D VW	Patents
Discontinuity	-0.192**	-0.010***	0.223***	0.062***	0.000	0.000
	(-2.00)	(-4.39)	(2.99)	(3.71)	(0.57)	(1.15)
Rank	0.001**	-0.000***	-0.001***	-0.000	-0.000	-0.000***
	(2.41)	(-6.26)	(-4.02)	(-0.47)	(-0.61)	(-3.86)
Size (log(TNA))	-0.281***	-0.003*	-0.032**	0.007	0.001***	0.000**
	(-7.22)	(-1.85)	(-2.54)	(1.12)	(4.77)	(2.29)
Family Size	-0.283***	-0.006**	-0.034	0.038***	0.000	0.000
	(-3.62)	(-2.38)	(-1.16)	(3.55)	(0.82)	(0.80)
Family Funds (log)	0.346***	-0.006	0.034	-0.003	-0.001***	-0.001***
	(3.54)	(-1.57)	(1.37)	(-0.16)	(-2.65)	(-3.18)
Expense Ratio	-0.123	-0.059***	-0.120**	-0.247***	0.000	0.001**
	(-0.64)	(-8.65)	(-1.96)	(-6.06)	(0.12)	(1.97)
Av Front Loads	7.041**	0.023	-0.926	0.355	0.010	0.008
	(2.09)	(0.28)	(-0.61)	(0.60)	(0.90)	(1.18)
Av Back Loads	1.619	-0.434***	0.921	-0.128	0.003	-0.007
	(0.56)	(-4.55)	(0.41)	(-0.32)	(0.23)	(-0.90)
Fund Age (log)	-0.386***	-0.171***	0.052*	0.236***	-0.010***	-0.005***
	(-4.43)	(-35.59)	(1.76)	(9.10)	(-15.66)	(-12.78)
Manager Tenure	-0.006	0.005*	0.042	-0.029	0.000	0.000
	(-0.11)	(1.83)	(1.29)	(-1.41)	(0.08)	(0.10)
Fund Flows	-0.007***	-0.000***	0.004**	-0.002***	0.000***	0.000***
	(-4.99)	(-4.58)	(2.38)	(-3.94)	(10.22)	(9.32)
Fund FE	Y	Y	Y	Y	Y	Y
Observations	61903	61903	66196	61903	61903	54270
Adjusted R2	0.023	0.331	0.001	0.022	0.067	0.056

Table 12: Accrual Earnings Management and Investors Locked-up Assets

The table lists the results of following fund-level regression specification: $EarningsManagement_{i,t} = \beta_0 + \beta_1 \%Ownlockup_{i,t}$+controls+$\epsilon_{i,t}$,where $EarningsManagement_{i,t}$ is either the Absolute Discretionary Accruals (ADA) as in Dechow, Sloan, and Sweeney (1995) or Abnormal discretionary expense. ADA is the residual from the model: $TA_{i,t}$=β_0+$\beta_1 1/AT_{i,t-1}$+$\beta_2(\Delta REV_{i,t} - \Delta AR_{i,t})$+$\beta_3 PPE_{i,t}$+$\beta_4 ROA_{i,t-1}$+$\epsilon_{i,t}$,where $TA_{i,t}$ is total accruals calculated as the difference between income before extraordinary item and operating cash flows. $AT_{i,t}$ is total assets. $\Delta REV_{i,t}$ is the change in revenue. $\Delta AR_{i,t}$ is the change in receivables. $PPE_{i,t}$ is gross property, plant, and equipment. $ROA_{i,t}$ is income before extraordinary items. Variables are scaled by beginning assets. Abnormal expenses measured as the residual from the following model multiplied by negative one (Roychowdhury (2006)): $DISEXP_{i,t}$=β_0+$\beta_1 1/AT_{i,t-1}$+$\beta_2 REV_{i,t-1}$+$\epsilon_{i,t}$,where $DISEXPi,t$ is discretionary expenses calculated as the sum of $R\&D$ expenses, advertising expenses, and $SG\&A$ expenses. $AT_{i,t}$ is total assets. $REV_{i,t}$ is total revenue. Variables are scaled by beginning assets. The model is estimated by industry-year. $\%Ownlockup_{i,t}$ is the percentage ownership of the stock held by funds with front and back end loads.

	Absolute Discretionary Accruals			Abnormal Expenses		
	(1)	(2)	(3)	(4)	(5)	(6)
%OwnLockup	-0.012***	-0.008**	-0.008**	-0.026***	-0.030***	-0.026***
	(-3.14)	(-2.08)	(-2.13)	(-2.90)	(-3.13)	(-2.71)
lnAssets	-0.007***	-0.006***	-0.007***	-0.024***	-0.025***	-0.026***
	(-5.52)	(-5.07)	(-5.84)	(-5.68)	(-5.72)	(-5.77)
BM	-0.007***	-0.007***	-0.008***	-0.014***	-0.014***	-0.016***
	(-6.89)	(-7.00)	(-7.27)	(-7.33)	(-7.28)	(-7.86)
ln Firm Age	-0.005**	-0.005**	-0.003	-0.001	-0.001	-0.004
	(-2.09)	(-2.11)	(-1.07)	(-0.14)	(-0.11)	(-0.59)
Leverage	-0.000	-0.000	-0.000	0.000	0.001	0.001*
	(-1.02)	(-1.04)	(-0.72)	(1.10)	(1.13)	(1.80)
Loss	0.012***	0.012***	0.011***	0.013***	0.014***	0.014***
	(9.58)	(9.42)	(8.97)	(5.33)	(5.39)	(5.46)
OCF Vol	-0.049***	-0.050***	-0.053***	-0.022	-0.022	-0.033
	(-3.50)	(-3.54)	(-3.77)	(-0.53)	(-0.53)	(-0.78)
Sales Vol	0.003	0.003	0.001	-0.051***	-0.051***	-0.048***
	(0.92)	(0.87)	(0.22)	(-5.17)	(-5.16)	(-4.70)
% Δ Cash Sales	0.008***	0.008***	0.008***	0.042***	0.042***	0.043***
	(7.12)	(7.18)	(7.17)	(12.51)	(12.50)	(12.55)
ΔROA	-0.110***	-0.110***	-0.106***	0.003	0.002	0.003
	(-9.45)	(-9.48)	(-9.07)	(0.14)	(0.13)	(0.18)
Institutional Ownership		-0.007***	-0.007***		0.006	0.008
		(-2.95)	(-2.78)		(0.96)	(1.24)
Firm FE	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	N	Y	Y	N
Year x Industry FE	N	N	Y	N	N	Y
Observations	189328	189208	189208	171920	171793	171793
Adjusted R2	0.388	0.387	0.403	0.792	0.792	0.799

Table 13: EPS Forecast Horizon and Investors Locked-up Assets

The table lists the odds from a logit regression of following stock-level regression specification: $EPShorizon_{i,t} = \beta_0 + \beta_1\%\text{Ownlockup} + controls + \epsilon_{i,t}$,where $EPShorizon_{i,t}$ equals 1 for firms that provide earnings guidance for the corresponding horizon of between one and five years. % Ownlockup is the percentage ownership of the stock held by funds with front and back end loads (% Ownlockup).

	EPS Forecast Horizon (years)				
	One	Two	Three	Four	Five
%OwnLockup	0.678***	0.842**	1.921***	2.862***	3.876***
	(-5.48)	(-2.56)	(7.22)	(6.65)	(6.89)
lnAssets	0.878***	0.920***	1.131***	1.227***	1.303***
	(-25.31)	(-17.15)	(19.01)	(17.90)	(18.25)
BM	1.150***	1.057***	0.842***	0.705***	0.548***
	(10.72)	(4.36)	(-8.71)	(-9.33)	(-11.57)
ln Firm Age	1.052***	1.008	0.958***	1.008	1.004
	(4.07)	(0.67)	(-2.66)	(0.27)	(0.11)
Leverage	1.005	0.999	0.996	0.990	1.003
	(1.55)	(-0.30)	(-0.95)	(-1.64)	(0.39)
Loss	1.024	0.973*	1.099***	1.358***	1.414***
	(1.40)	(-1.66)	(4.12)	(7.88)	(7.31)
OCF Vol	1.042	0.589***	1.361	5.592***	7.161***
	(0.31)	(-3.93)	(1.58)	(6.38)	(6.37)
Sales Vol	1.078	0.935	0.883	0.653***	0.958
	(1.62)	(-1.45)	(-1.63)	(-3.31)	(-0.25)
% Δ Cash Sales	0.971**	0.990	1.034**	1.083***	1.079**
	(-2.35)	(-0.81)	(2.00)	(3.49)	(2.54)
ΔROA	1.031	1.407***	0.867	0.666*	0.639
	(0.32)	(3.40)	(-1.03)	(-1.81)	(-1.51)
Institutional Ownership	0.731***	0.930**	1.289***	0.915	1.119
	(-10.01)	(-2.31)	(5.87)	(-1.21)	(1.13)
Year x Industry FE	Y	Y	Y	Y	Y
Observations	167465	167414	166477	152816	141173
Pseudo R2	0.03	0.01	0.04	0.04	0.04

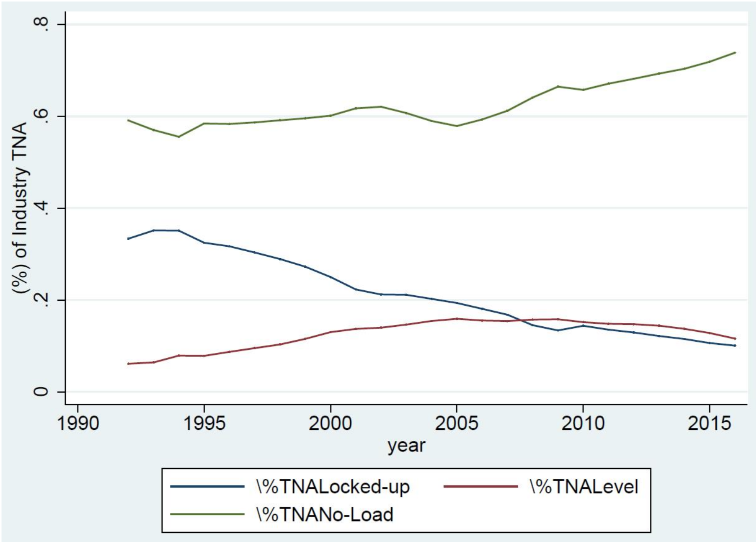

Figure 1: Investor Category over Time.

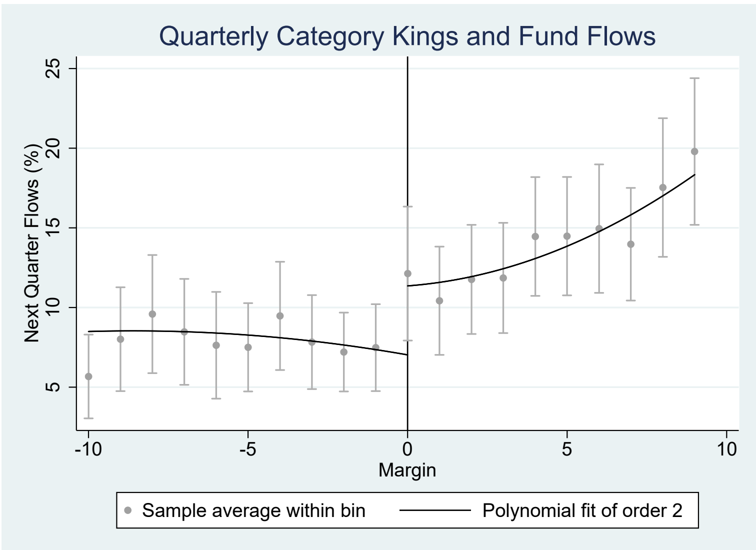

Figure 2: RDD analysis of post-publication fund flows by rank.

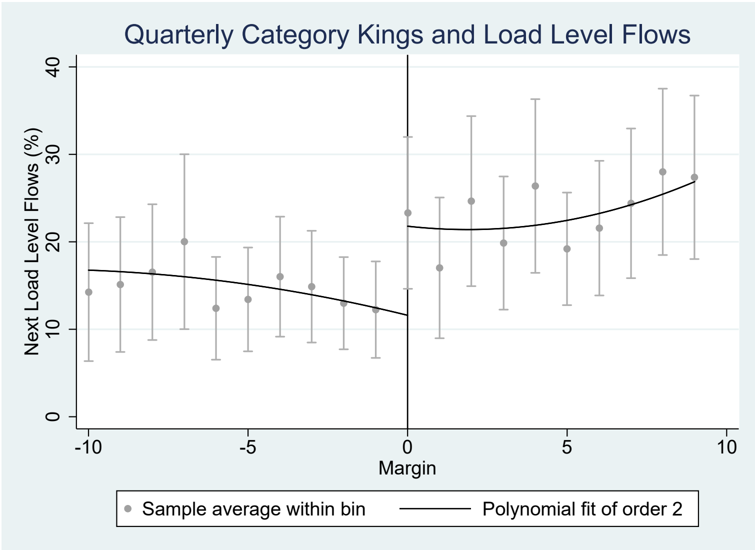

Figure 3: RDD analysis of post-publication load level fund flows by rank.

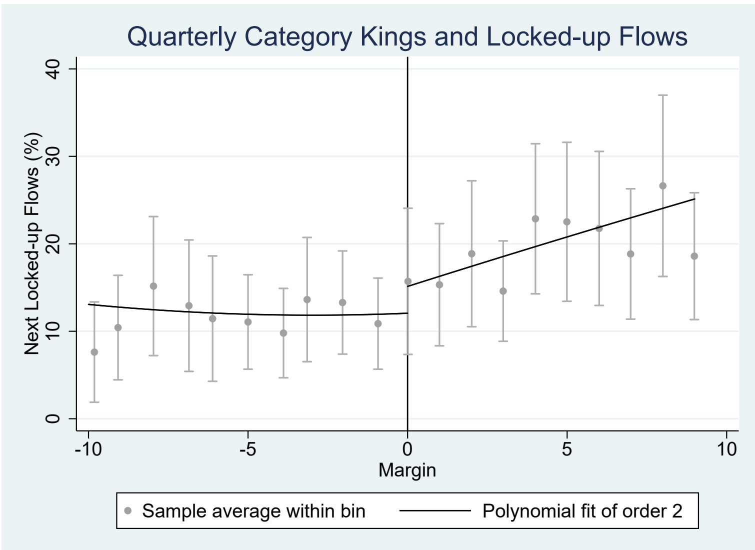

Figure 4: RDD analysis of post-publication locked-up fund flows by rank.

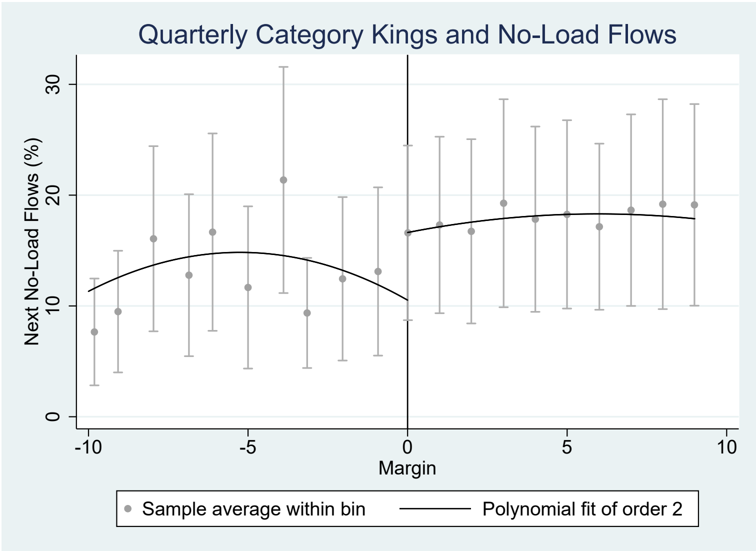

Figure 5: RDD analysis of post-publication no-load fund flows by rank.

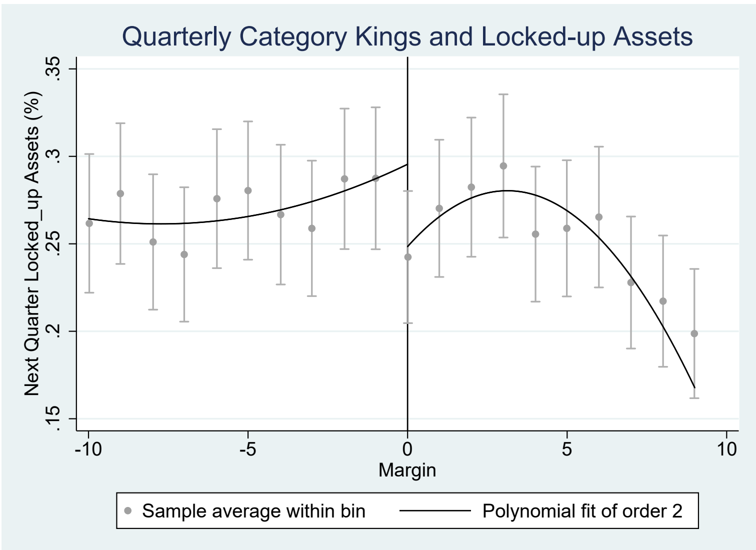

Figure 6: RDD analysis of post-publication locked-up assets by rank.

Appendix

Table A1: Variable definitions

Variable	Definition
Fund Level Characteristics	
%TNALocked-up	The fraction of total TNA that is invested through funds with entry or exit loads (including share classes A and B).
Size	Natural logarithm of TNA (Total Net Assets) under management (in US $m).
Fund Cash	The proportion of fund's asset invested in cash (in %).
Fund Flows	The net growth in fund assets beyond reinvested dividends (Sirri and Tufano, 1998) over the past one year.
Expense Ratio	Total annual expenses and fees divided by year-end TNA (in %).
Av Front Load	Average fund sales charge (in %)
Av Back Load	Average CDSL charge (in %)
Fund Age	Natural logarithm of the number of years since the fund inception date.
Gross Returns	Monthly portfolio gross return(in %).The gross monthly returns are computed by adding 1/12 of the expense ratio. For the share class with a front load we also add the front load assuming an average holding period of 7 years (84 months).
Net Returns	Monthly portfolio net return (in %).
Gross Performance	Portfolio gross return minus the median value of the return of all the funds within the same investment objective.
Manager Tenure	Natural logarithm of the number of years since the fund manager started working for the fund family.
Fund Turnover	Minimum of aggregate purchases and sales of securities divided by average TNA over the calendar year.
Family Funds	Natural logarithm of the number of funds within the fund family.
Family Size	Natural logarithm of TNA of all funds in the family, excluding the fund itself.

Stock level Characteristics	
$\%Ownlockup$	construct a stock-level metric that reflects aggregate holdings information from locked up capital share classes as the percentage ownership of the stock held by through funds with entry or exit loads.
Absolute Discretionary Accruals	The residual from the model as in Dechow, Sloan, and Sweeney (1995): $TA_{i,t}=\beta_0+\beta_1 1/AT_{i,t-1}+\beta_2(\Delta REV_{i,t}-\Delta AR_{i,t})+\beta_3 PPE_{i,t}+\beta_4 ROA_{i,t-1}+\epsilon_{i,t}$,where $TA_{i,t}$ is total accruals calculated as the difference between income before extraordinary item and operating cash flows. $AT_{i,t}$ is total assets. $\Delta REV_{i,t}$ is the change in revenue. $\Delta AR_{i,t}$ is the change in receivables. $PPE_{i,t}$ is gross property, plant, and equipment. $ROA_{i,t}$ is income before extraordinary items. Variables are scaled by beginning assets. The model is estimated by industry-year.
Abnormal Expenses	Abnormal discretionary expenses measured as the residual from the following model multiplied by negative one (Roychowdhury (2006)): $DISEXP_{i,t}=\beta_0+\beta_1 1/AT_{i,t-1}+\beta_2 REV_{i,t-1}+\epsilon_{i,t}$,where $DISEXPi,t$ is discretionary expenses calculated as the sum of R&D expenses, advertising expenses, and SG&A expenses. $AT_{i,t}$ is total assets. $REV_{i,t}$ is total revenue. Variables are scaled by beginning assets.The model is estimated by industry-year.
lnAssets	the natural log of total assets.
BM	the ratio of book value of equity to market value of equity.
ln Firm Age	log of the number of years elapsed since the firm first appeared in CRSP.
Leverage	the ratio of short term plus long-term debt to common equity.
Loss	indicator variable equal to one if the firm incurred a loss in the previous year and zero otherwise.
OCF Vol	the standard deviation of operating cash flows over the past five years scaled by total assets.
Sales Vol	the standard deviation of sales over the past five years scaled by total assets.
% Δ Cash Sales	the percentage change in sales minus the change in account receivable over the previous year.
ΔROA	is the change in net income scaled by average total assets in the past year.
Institutional Ownership	the percentage of shares outstanding held by instiutional investors (Thompson 13f).

Table A2: Fund Flows and Capital Commitment (II)

The table lists the results of regressing fund flow volatility and flow-performance sensitivity on investor capital commitment and fund characteristics. The dependent variables are flow volatility - the standard deviation of monthly flows in the next 24 months (columns 1-3), and the estimate coefficient from regressing flows on past performance (column 4-6). We measure investor capital commitment with the fraction of total TNA that is invested through share classes with exit loads (Back Investors), entry loads (Front Investors), or either of the two (%TNA Locked-up). * denotes significance at the 10% level, ** denotes significance at the 5% level and *** denotes significance at the 1% level.

	Fund Flow Volatility			Flow Performance		
	(1)	(2)	(3)	(4)	(5)	(6)
Back Investors	-4.603***			7.408		
	(-11.49)			(1.09)		
Front Investors	-1.545***			9.292		
	(-7.22)			(0.94)		
%TNALocked-up		-1.844***	-2.020***		3.526	11.568
		(-8.27)	(-8.06)		(0.98)	(0.99)
NoLoad Investors		0.168			-10.775	
		(0.87)			(-0.88)	
Institutional Investors			-0.348			11.125
			(-1.51)			(1.11)
Size (log(TNA))	-0.724***	-0.758***	-0.754***	4.985	5.074	4.943
	(-17.63)	(-17.96)	(-18.32)	(0.96)	(0.96)	(0.96)
Family Size	0.064	0.054	0.038	7.700	7.208	8.130
	(0.95)	(0.80)	(0.53)	(0.93)	(0.93)	(0.94)
Family Funds (log)	0.393***	0.359***	0.385***	-12.429	-11.686	-13.138
	(3.71)	(3.39)	(3.39)	(-0.89)	(-0.89)	(-0.90)
Expense Ratio	1.484***	1.228***	1.150***	15.918	13.466	17.811
	(9.67)	(8.39)	(8.56)	(0.99)	(1.02)	(1.02)
Av Front Loads	17.357***	20.472***	21.307***	314.927	320.199	303.143
	(4.75)	(5.59)	(5.52)	(1.01)	(1.01)	(1.00)
Av Back Loads	-16.165***	-25.263***	-26.156***	-1030.780	-1079.885	-1019.479
	(-3.80)	(-5.60)	(-5.71)	(-1.06)	(-1.05)	(-1.05)
Fund Age (log)	0.221**	0.310***	0.298***	-8.735	-9.081	-8.095
	(2.54)	(3.50)	(3.47)	(-0.92)	(-0.92)	(-0.91)
Time FE	Y	Y	Y	Y	Y	Y
Observations	437152	437152	437152	332616	332616	332616
Adjusted R2	0.158	0.153	0.153	0.001	0.001	0.001

Table A3: Flow Volatility and Capital Commitment: Inflows vs Outflows (II)

The table lists the results of regressing fund flow volatility on investor capital commitment and fund characteristics. The dependent variables are the volatility (standard deviation in the next 24 months) of monthly net flows (columns 1-2), total flows (column 2-4), inflows (column 5-6), and outflows (column 7-8). We measure investor capital commitment with %TNALocked-up - the fraction of total TNA that is invested through share class with entry or exit loads (including share classes A and B). * denotes significance at the 10% level, ** denotes significance at the 5% level and *** denotes significance at the 1% level.

	Fund Flow Volatility							
	Net		Total		Inflows		Outflows	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
%TNALocked-up	-1.320***	-1.113***	-2.749***	-2.432***	-1.779***	-1.527***	-1.236***	-1.097***
	(-9.24)	(-8.52)	(-7.80)	(-7.42)	(-7.69)	(-7.17)	(-9.17)	(-8.63)
Size (log(TNA))	-0.565***	-0.500***	-0.962***	-0.875***	-0.662***	-0.584***	-0.361***	-0.321***
	(-19.49)	(-20.82)	(-14.12)	(-13.72)	(-14.87)	(-14.78)	(-14.62)	(-13.84)
Family Size	0.003	-0.038	-0.242**	-0.292***	-0.141*	-0.183***	-0.052	-0.084*
	(0.07)	(-0.88)	(-2.12)	(-2.69)	(-1.90)	(-2.59)	(-1.11)	(-1.90)
Family Funds (log)	0.163**	0.115*	0.689***	0.603***	0.468***	0.396***	0.149**	0.124*
	(2.29)	(1.84)	(3.80)	(3.73)	(3.98)	(3.81)	(2.06)	(1.88)
Expense Ratio	0.492***	0.180*	1.114***	0.632**	0.902***	0.523***	0.394***	0.157
	(4.88)	(1.69)	(4.27)	(2.31)	(5.47)	(3.02)	(3.99)	(1.51)
Av Front Loads	0.381	0.447	5.114	3.556	5.729	5.254	-1.832	-2.541
	(0.16)	(0.19)	(0.90)	(0.61)	(1.52)	(1.38)	(-0.81)	(-1.10)
Av Back Loads	-23.649***	-19.813***	-42.501***	-35.107***	-30.759***	-25.361***	-18.179***	-14.909***
	(-8.27)	(-7.28)	(-5.92)	(-5.17)	(-6.69)	(-5.79)	(-6.31)	(-5.47)
Fund Age (log)	0.201***	0.107**	0.547***	0.425***	0.313***	0.196**	0.278***	0.229***
	(3.34)	(2.07)	(4.23)	(3.62)	(3.56)	(2.54)	(5.76)	(5.22)
Time FE	Y	N	Y	N	Y	N	Y	Y
Time x Objective FE	N	Y	N	Y	N	Y	N	Y
Observations	244416	244416	244416	244416	244416	244416	244416	244416
Adjusted R2	0.216	0.277	0.122	0.170	0.132	0.186	0.115	0.164

Table A4: Manager Trading and Investors Locked-up Assets: Other Trading Measures

The table lists the results of following regression specification: $HorizonMeasure_{i,t} = \beta_0 + \beta_1 \%TNALockedup_{j,t} + controls + \epsilon_{i,t}$,where $HorizonMeasure_{i,t}$ is the turnover ration as defined by CRSP and one of three horizon measures as introduced by Lan, Moneta, and Wermers (2015). The first measure is the "simple" horizon measure, which calculates the holding horizon of a stock in a given fund portfolio as the length of time from the initiation of a position to the time that the stock is fully liquidated by the fund. The second measure is the "Ex-Ante Simple" measure, that uses only current and past information.The third measure allows for the possibility that position changes may also be informative about the intended holding horizon, and tracks inventory layers of each stock held by each fund. It assumes that the stocks purchased first by a fund are sold first (FIFO).%TNALockedup is the fraction of total TNA that is invested through the A and B share class. * denotes significance at the 10% level, ** denotes significance at the 5% level and *** denotes significance at the 1% level.

		Alternative Duration Meassures		
	Turnover	Duration SHM	Duration Ex-ante	Duration FIFO
%TNALocked-up	-0.319***	1.603***	0.921***	1.084***
	(-9.10)	(3.32)	(3.59)	(3.37)
Size (log(TNA))	-0.054***	0.457***	0.255***	0.317***
	(-6.99)	(4.83)	(4.92)	(5.10)
Family Size	-0.028**	0.404**	0.223**	0.328***
	(-2.21)	(2.44)	(2.51)	(3.04)
Family Funds (log)	0.111***	-1.191***	-0.663***	-0.910***
	(5.84)	(-4.57)	(-4.49)	(-5.16)
Expense Ratio	0.426***	-5.414***	-2.137***	-3.117***
	(14.78)	(-9.37)	(-8.17)	(-9.27)
Av Front Loads	1.334*	3.274	1.696	1.209
	(1.90)	(0.33)	(0.31)	(0.18)
Av Back Loads	-4.356***	-22.044	-12.060*	-17.028*
	(-4.34)	(-1.58)	(-1.68)	(-1.88)
Fund Age (log)	0.171***	-0.082	0.633***	0.386**
	(8.53)	(-0.29)	(4.31)	(2.07)
Fund Cash	0.010***	0.003	-0.002	0.003
	(4.19)	(0.23)	(-0.32)	(0.28)
Manager Tenure	-0.087***	2.690***	1.589***	2.008***
	(-4.58)	(9.68)	(10.41)	(10.61)
Fund Flows	0.000	0.009***	-0.005***	0.010***
	(0.91)	(5.09)	(-4.59)	(7.80)
Flow Volatility	0.032***	-0.012	-0.013	-0.004
	(9.42)	(-0.65)	(-1.33)	(-0.34)
Observations	432174	417531	417531	417531
Adjusted R2	0.158	0.157	0.222	0.171