IPO Allocations and New Mutual Funds

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Abstract

Using an event time approach, we find that mutual funds outperform during the 6-month period after inception. This result is not driven by incubation bias; rather new fund outperformance concentrates among funds with access to initial public offerings (IPOs), especially to more underpriced IPOs. Favoritism among fund families, partly explains access to IPOs. Finally, funds with access to IPOs that signal preferential access to future IPOs display greater investment flow, even after controlling for performance. Overall, the evidence suggests that fund families strategically exploit access to IPO allocations to open new mutual funds that demonstrate strong investment performance and attract greater investment flow.

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1. Introduction

Globalization and the development of capital markets continue to fuel the growth of the mutual fund management industry. This growth, however, has varied from period to period; some periods have bursts of new funds while other periods have much lower new fund activity. For instance, Figure 1 shows that in the period 1998-2000 there were 1,337 new funds, whereas during the financial crisis in 2008-2010 there were only 138 new funds opened in the mutual fund industry. These periods of high/low new fund activity seem to be correlated with market performance and high/low initial public offerings (IPOs) activity (Investment Company Fact Book, 2016). For instance, in 1998-2000 there were 1,139 IPOs while in 2008-2010 there were only 153. Given that extant literature shows that mutual funds have preferential access to IPOs (Reuter, 2006; Agarwal, Prabhala and Puri, 2002), and that the typical IPO is substantially underpriced (Ritter and Welch, 2002), an interesting empirical question is whether the IPO activity creates opportunities for trade for new funds.

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In this study, we investigate whether new funds take advantage of such IPO-related opportunities for trade to generate superior performance. Using Carhart (1997) four-factor model to measure risk-adjusted performance, we find that new funds outperform more established funds. Particularly, during the first 6-month period after inception the average Alpha is 3.94% (annualized). Afterwards,

performance falls substantially. This result is unlikely to stem from incubation bias because, like Evans (2010), we restrict our sample to incubation-free funds, by selecting funds with inception dates in the database closed to the ticker creation date recorded in NASD. Moreover, during the *same* 6-month period after the inception of the new fund, we find positive and significant performance for already existing funds managed by the managers of those new funds.[1] Overall, these results suggest that new funds are attractive investment opportunities during their early months after inception.

Next, we investigate whether the new fund outperformance relates to IPO allocations. Consistent with opportunities for trade, we find that the new fund outperformance concentrates among funds that hold IPO stocks, particularly highly underpriced IPO stocks. If access to IPOs relates with superior managers, then we would also expect persistence in fund performance. Nevertheless, we find that new fund outperformance is relatively short-lived, and this short-lived effect is prevalent for both portfolios of new funds that exhibit the strongest or the weakest performance. Therefore, managerial skill is unlikely to relate to access to IPOs.

We then examine alternative explanations for new fund outperformance and the IPO effect. First, Bär, Kempf and Ruenzi (2010) argue that individuals, as opposed to teams, follow more extreme investment styles, hold more industry concentrated

[1] The already existing funds do not suffer from incubation bias because they have been surviving for a while in the sample.

portfolios and are more likely to achieve extreme performance outcomes. However, we find that the new fund outperformance and the IPO effect prevail both among funds managed by individual managers and funds managed by teams. Second, we test if the outperformance is related with the fund size. Chen, Hong, Huang and Kubik (2004) find an adverse scale effect on fund performance. We find that new fund outperformance prevails among funds with less than 100 million total net assets, measured at the first month after creation, but the IPO effect prevails among all fund sizes.

After documenting a strong IPO effect, we investigate the sources of the IPO effect on fund performance, by considering for which types of funds it is more prevalent. Gaspar, Massa and Matos (2006) find that fund families may favor funds that more likely increase overall family profits. We test the favoritism hypothesis by focusing on two fund family characteristics, size and age. Favoritism becomes more important as the family grows up or when the family is younger. We find a similar IPO effect for both small and large families. In addition, we find that the IPO effect prevails among both young and old fund families, but it is more prevalent among younger families. Thus, favoritism among younger families could partly explain the IPO effect.

Finally, we examine whether IPO allocations represent an effective strategy that enhances investment flows during the 6-month period after the inception of the fund. If so, investment flows may respond positively to (i) fund performance driven by IPO

allocations and/or (ii) signals for preferential access to future IPOs. Regarding performance, it is possible that investors may disregard this information because it is short-lived. We do not, however, expect investors to disregard the signal of preferential access to future IPOs. The results show that both before and after controlling for fund performance and fund characteristics, new funds with access to IPOs that also secure additional IPO allocations during the subsequent 12-month period still benefit from higher investment flows relative to non-IPO new funds. Therefore, investors consider signals about future IPO allocations that arises from access to current IPO allocations.

The study proceeds as follows: Section 2 outlines the contribution to the literature. Section 3 describes the data and methodology. Section 4 displays the empirical results. Finally, Section 5 concludes.

2. Contribution to the Literature

A considerable body of literature asks whether mutual funds outperform. The consensus is that, on average, mutual funds underperform, passive benchmarks (Grinblatt, Titman and Wermers, 1995; Carhart, 1997). In this study, we focus specifically on the new fund performance. Most of previous studies use fund age as another factor explaining performance using cross-sectional regressions in calendar time. Instead, we examine fund performance in event time where the event is the time when the fund starts. This approach is powerful because if outperformance

concentrates among new funds, the event time approach will capture it, but the calendar time analysis will miss it. In addition, our event time is measured in months since a short horizon provides a more precise method to identify outperformance when it is short-lived (Bollen and Busse, 2005). Reasons of short-lived outperformance include the competitive nature of mutual fund industry (Berk and Green, 2004) and managerial turnover (Chevalier and Ellison, 1999). We find that opportunities for trade such as IPO allocations, whose usefulness can fade away over time, could also induce a short-lived performance effect.

Our study also relates to the literature on IPO allocations and fund performance. It is well accepted that underwriters have considerable latitude on how to allocate IPO stocks. In this vein, Aggarwal, Prabhala and Puri (2002) find that underwriters allocate to institutional investors IPO stocks in excess of that explained by bookbuilding alone. Reuter (2006) looks within institutional investors and finds that allocations of underpriced IPOs are positively associated with the level of brokerage business directed to lead underwriters. Finally, Hwang, Titman and Wang (2015) find that school ties related with having a degree from an elite university facilitate preferential access to IPO allocations that improve fund performance. We extend this literature by linking IPO allocations to new fund performance. Thus, access to IPO allocations could be a motive for creating new funds. Other motives include whether the new fund helps the family to generate additional fee income and economies of scale within fund families (Khorana and Servaes, 1999).

In addition, we find that the IPO effect on new fund performance is more prevalent among younger families. Gaspar, Massa and Matos (2006) argue that fund families strategically transfer performance, through underpriced IPO stocks, across member funds to favor funds that likely increase overall family profits. Thus, favoritism among younger fund families could, partly, explain our results.

Finally, our study also contributes to the literature on fund flows. This literature largely focuses on the relationship between investment flows with past performance (Chevalier and Ellison, 1997; Sirri and Tufano, 1998), fund ratings (Del Guercio and Tkac, 2008), incubation bias (Evans, 2010), media coverage (Solomon, Soltes and Sosyura, 2014), and trendy mutual funds (Greene and Stark, 2016). We show that IPO allocations is an effective strategy that enhances investment flows during their early months after the inception of a new fund. The effectiveness of the strategy seems to relate with whether the fund is likely to secure additional IPO stocks in the future, rather than the performance that arises from current IPO allocations.

3. Data and Methodology

3.1 Data

We construct our sample using the CRSP U.S. Survivorship-Bias-Free Mutual Fund Database, which includes information about fund returns, total net assets, fund management structures, investment objectives, and other fund characteristics. We focus on actively managed diversified domestic equity mutual funds since the data on

the holdings of those funds are the most complete; thus, we exclude international, balanced, sector, bond, money market, and index funds. Further, to ensure that the sample consists of equity funds, we require that funds have an average of 90% or greater of assets held in common stock (CRSP variable per_com). Finally, we also remove all non-U.S. funds using investment objective codes.[2]

Next, we merge the CRSP mutual fund database with the Thomson Financial CDA/Spectrum holdings database using the MFLINKS (see Simutin, 2014; Wermers, 2004), to get the holding information of mutual funds in their emerging period. The Thomson Financial database provides long positions in domestic common stock holdings of mutual funds and the data are collected both from submitted reports of mutual funds to SEC (U.S. Securities and Exchange Commission) and from volunteer reports generated by some mutual funds (Huang, Sialm and Zhang, 2011). Quarterly holdings are not available for all the funds throughout the sample period. After 2004, SEC mandates all funds to report their holdings on a quarterly basis while only semi-annual reporting was required prior to that. As is common in the literature, for the missing quarters we assume that the funds follow a buy-and-hold strategy, and we fill the missing holdings with previous quarter's information. Our final sample spans the period January 1998 and December 2015.

[2] Specifically, we remove those observations where the CRSP variables icdi_obj, sp_style_cd, and policy_cd is equal to C&I, GE, IE, AGF, DSC, EAP, EAX, ECH, EEU, EGA, EIA, EJP, ELA, ESC, SCI, SGL.

3.2 Controlling for incubation bias

It is well known that fund families consistently use incubation as a strategy for initiating new funds. This strategy, however, could cause severe biases in fund performance measurement – incubation funds normally exhibit abnormal performance compared to incubation-free funds (Evans, 2010). Thus, given that the task of this study is to evaluate the performance of new funds, controlling for incubation bias is of first-order importance.

To control for this bias, Evans (2010) and Aggarwal and Jorion (2010) suggest to minimize the difference between the ticker creation date of the fund and the first information reporting date in the CRSP database. Therefore, we merge our sample with Evans' (2010) list of mutual fund ticker creation dates from the NASD.[3] This list covers the period January 1, 1999 to August 31, 2008; therefore, the analysis excludes all the new funds created after August 31, 2008. The NASD ticker creation date is the actual date when the NASD assigned a ticker to a fund. We then estimate the difference of this date with the date of the first reported monthly return. A negative difference likely indicates that funds apply for the ticker before the fund is created. Evans (2010) excludes funds with a negative difference that is greater than 3 months, based on the assumption that a more negative difference represents either an error in the ticker creation date data or an error in the ticker match. Likewise, we remove

[3] See http://www.afajof.org/supplements.asp.

the 4.26% of the sample with a negative difference greater than 3 months. A positive difference indicates a delay between the authorization of a ticker for the fund and the start of the fund; a positive difference is likely to be related to strategy of fund incubation. For our sample, the average positive difference is 13.09 months, which is substantial. About 74.58% of these funds have a 6-month or less difference while about 82.01% of these funds have a 12-month or less difference.

When the difference is large, it is more likely that the fund emerges as a result of an incubation strategy. In contrast, when the difference is small it may indicate gathering of assets than investing, which is entirely legitimate (Aggarwal and Jorion, 2010). Consistent with this idea, only 18.14% of the funds have 0-month difference. Therefore, to control for the incubation bias we must choose a cut-off point of the difference that is not too large, to exclude incubated funds, but also not too small, to prevent missing new funds. Evans (2010) sets a cut-off point of 12-month difference while Aggarwal and Jorion (2010) set a cut-off point of 6-month difference. In this study, like Evans (2010) we exclude funds with more than 12-month difference.[4] Nevertheless, given the uncertainty in setting an appropriate cut-off point, in section 3.1, we discuss alternative identification strategies that enable us to argue that the results are unlikely to be driven by incubation bias.

[4] For funds with multiple classes, we first exclude classes with more than 12-month difference and then we aggregate the remaining classes into the fund level using a total net asset value-weighted approach. This approach controls for the possibility that a fund seeds new classes which become public after the fund (and the new class) generates strong performance.

Table 1 reports summary statistics of the incubation-free sample. The dataset consists of 1,569 non-incubated domestic equity funds, with 166,556 fund-month observations. The average of total net assets (TNA) across funds is $483.5 million, ranging from $0.1 to $143 billion.[5] The average fund age is 10.72 years, with the oldest fund having survived for 17 years throughout the entire sample period. The average expense ratio is 1.27% per year and the average fund load is 0.18%. Finally, the average turnover is 85.66% which indicates that funds' holding positions are changed regularly while the average fund flow is 14.61%, indicating that mutual funds attract positive inflows.

[Please Insert Table 1 About Here]

3.3 Event time approach

We implement the main performance analysis using an event time approach. Specifically, we consider the first reported month of fund performance as month zero. During the period of January 1998 to December 2015, we have 204 months in event time. Starting from month 1 we have 1,569 funds. Afterwards, this number falls due to fund attrition. By month 178 we have less than 50 funds in the portfolio; therefore, we do not estimate portfolio performance due to the small number of funds. Nevertheless, the results are qualitative similar if we do not impose this restriction.

[5] The CRSP reported TNA of 0.1 indicates that the size of the fund is less than $100,000.

Overall, with this approach the largest number of funds is in month 1, and declines smoothly in event time.

3.4 Measure of mutual fund performance

Our measure of performance is based on the Carhart (1997) four-factor model, which controls for risk and style factors. This model is a popular measure in this type of literature and implicitly assumes that the riskiness of the manager's portfolio can be measured using the factors identified by Fama and French (1995), Carhart (1997) and Jegadeesh and Titman (1993). A drawback of this model is that there is no theoretical argument that justifies why these factors measure systematic risk in the economy. Fama and French (2010) acknowledge this limitation but argue that one can interpret the factors as simply alternative (passive) investment opportunities. Particularly, we estimate the following regression model:

$$R_{i,t} - R_{f,t} = \alpha_i + \beta_{i,m}(R_{m,t} - R_{f,t}) + \beta_{i,smb}SMB_t + \beta_{i,hml}HML_t + \beta_{i,mom}MOM_t + \varepsilon_t^j \quad (1)$$

The dependent variable $R_{i,t}-R_{f,t}$ is the monthly return of a portfolio in a certain month minus the risk-free rate, and the independent variables are the returns of four zero-investment factor portfolios. $R_{m,t}-R_{f,t}$ measures the excess return of the market portfolio over the risk-free rate, which is also known as the "market premium" that equals the difference between the net return and the value-weighted aggregate proxy

portfolio (Chen and Pennacchi, 2009); SMB_t is the return difference between small and large capitalization stocks; HML_t is the return difference between high and low book-to-market stocks; and MOM_t is the return difference between stocks with high and low past returns. The intercept of the model (Jensen's α_i) is the main measure of fund performance.

4. Empirical Results

4.1 New fund performance

Panel A of Table 2 presents Jensen's Alpha for the event-time portfolio. For brevity, we report results ranging from one to 12 months after fund inception. The results show that during the 6-month period after the inception of the fund, the Alphas are consistently positive and statistically significant. Afterwards, the Alphas fall substantially and vary between positive and negative values.

Panel B of Table 2 presents results from a regression of monthly portfolio Alphas on a constant and a New Fund indicator variable that equals 1 during the 6-month period after inception, and zero during the remaining months. The coefficient on the new fund indicator variable is greater by 0.333% (or by 3.99 % per annum) relative to the remaining months ($p<0.01$). The R^2 of the regression is 20.39%. This evidence is consistent with the view that new funds perform significantly better during their initial months after the inception of the fund.

[Please Insert Table 2 About Here]

It is possible that some residual incubation bias still affects the results and drives the observed new fund outperformance. To address such concerns, we restrict the difference between the inception of the fund and the first entry date into the database to 1-month difference. This is a much more stringent approach relative to the 12-month window used in Evans (2010) and the 6-month window used in Aggarwal and Jorion (2010). Note, however, that while this approach is very conservative with respect to the impact of incubation bias on fund returns, it may also exclude funds that gather assets than investing, which may equally provide valuable information. Therefore, this analysis is more subject to reduced statistical power. Table 3 reports the results (in the spirit of Table 2). The results show that the patterns remain qualitatively similar; albeit they are less significant due to the reduced number of new funds.

[Please Insert Table 3 About Here]

As an alternative test of incubation bias, we examine the performance of already existing funds managed by the managers of new funds. Already existing funds do not suffer from incubation bias, and if the new fund outperformance is due to either greater managerial incentives and/or opportunities for trade, we would expect these same reasons to affect also already existing funds during the 6-month period after new fund inception. Thus, already existing funds represent an ideal identification approach to preclude incubation bias as an explanation that fully drives our results.

To perform this analysis, we verify whether new fund managers are running other funds within the CRSP U.S. Survivorship-Bias-Free Mutual Fund Database (CRSP variable mgr_name).[6]

Among our sample of individual money managers, we match 92 managers that manage 207 new funds and 145 already existing funds. Interestingly, the average size of new funds and already existing funds is not statistically different, and thus we do not expect any erosion in fund performance due to size differences (Chen, Hong, Huang and Kubik, 2004). Table 4 reports the results. Consistent with the previous findings, both new funds and already existing funds exhibit positive and statistically significant Alphas during the 6-month period after the inception of the new funds.

[Please Insert Table 4 About Here]

Overall, the results demonstrate that new funds outperform during the 6-month period after inception, and this outperformance is not an artifact of incubation bias.

4.2 New fund performance and IPOs

In this section, we analyze the role of IPOs on new fund performance. Previous literature on IPOs find evidence that the typical IPO provides substantial first-day returns, a phenomenon known as underpricing (Ritter and Welch, 2002). In addition, mutual funds seem to have preferential treatment in IPOs. Reuter (2006), for instance,

[6] Note that this approach does not account for managers not reported by the CRSP database.

finds a positive relation between underpriced IPO allocations to mutual fund families and brokerage commissions that families paid the underwriters in the months surrounding the IPO. Similarly, Agarwal, Prabhala and Puri (2002) argue that underwriters may favor institutional investors by allocating them more shares in hot issues. Therefore, access to IPOs could be a potential explanation about new mutual fund outperformance. We test this hypothesis by investigating whether the new fund outperformance concentrates among funds that hold IPO stocks, particularly underpriced IPO stocks.

Further, we examine the implications of this IPO effect on performance persistence. If on average fund managers consistently have access to IPO stocks, then we would expect performance persistence. However, IPO stocks come in the market in cycles (Ibbotson, Sindelar and Ritter, 1994), and thus during certain periods there might be more opportunities for accessing IPO stocks while in other periods may not. In addition, IPO stocks may belong to certain industries (Ritter, 1984), or may have certain firm characteristics such as small size or exhibit greater risk; especially in periods where the market is hot (Maksimovic and Pichler, 2001; Stoughton, Wong and Zechner, 2001). It may be therefore difficult for new funds to maintain consistent access to IPO stocks, on average, because some of these characteristics may not match with the investment objectives of the new fund. If so, access to IPO stocks could be a temporary phenomenon and we would expect new fund outperformance to be short-lived.

4.2.1 New fund performance and IPO allocations

We use the Securities Data Company's (SDC) New Issues database to identify IPOs issued in North America during the period 1998-2008, which is the same as our new fund creation period. For each of these IPOs, SDC provides the ISIN and the underpricing (defined as the percentage increase from the offer price to the first-day closing price) of the issuing firm. Because IPO allocations are not publicly available, we construct a proxy for IPO allocations by matching the IPO information with the mutual fund holdings using all the reports who's the start of the reporting period is within the 6-month after the inception.[7]

Then, we identify funds which hold IPO stocks where their first-day closing price date is within the 6-month period after the inception of the fund. If a new fund holds at least one IPO stock holding, then we classify the fund as IPO new fund, alternatively as a non-IPO new fund. This classification, like Reuter (2006) and Gaspar, Massa and Matos (2006), assumes that the matching procedure best approximates whether a fund was allocated IPO shares at the offer date.[8] Among our 1,569 new

[7] This matching approach addresses a main problem that arise due to the infrequent reporting of fund holdings. Particularly, it is possible that a fund manager has access to an IPO stock during the period of 6-month after the inception, but reports this IPO stock holding after that period. Therefore, by requesting the start of the reporting period to be within the 6-month after inception is useful to circumvent such a problem.

[8] A bias may arise when mutual funds buy or sell stocks during the period between the time of the IPO and the time of the holdings report. This bias is unlikely to affect our results. Particularly, if mutual funds buy stocks, given long-run IPO underperformance (Ritter 1991; Ritter and Welch, 2002), we would expect the performance of IPO new funds to be negatively biased. This is opposite to our expectations. If mutual funds sell stocks, then it is likely that some funds that had access to IPO would wrongly

funds, 698 funds (or 44.49% of the sample) are identified as IPO funds, while 871 funds (or 55.51% of the sample). This shows that access to IPO allocations is popular among new mutual funds.

Table 5 reports results for the sub-samples of IPO and non-IPO funds. The results show that the Alpha in the 6-month period after inception for IPO funds is consistently positive and significant. In contrast, for non-IPO funds only for month 2 the Alpha is positive and marginally significant. Turning next to the regression analysis, the New-Fund indicator is positive and significant only for IPO Funds.

[Please Insert Table 5 About Here]

Additionally, we more explicitly control for the fact that we observe reported IPO holdings than IPO allocation, by splitting the IPO funds into two groups based on the profit that the fund gains from IPO holdings during the 6 months' period after inception. Specifically, we assume that the fund purchases IPO at the issue price, and we calculate the IPO profits by multiplying the first-day closing price change from the offering price with the shares held by the fund. Then, we aggregate the profits across all IPO stocks held by the fund during the 6-month period after inception. Such aggregated profit is expected to positively correlate with funds returns *only* when our matching procedure best represent allocation of IPO shares at the offer date and *not* stock buy/sells after the IPO. Using IPO profits, we separate the IPO funds into funds

classified as non-IPO funds. Given underpricing, the performance of non-IPO funds is positively biased, which again is opposite to our expectations.

that belong in the top 25% of the distribution, and the rest. The results remain qualitatively similar if we use alternative cut-off points such as the 50% percentile. Table 6 reports the result. Both funds with high and low IPO profit show significant positive Alpha, but as expected, high IPO profit funds exhibit greater Alpha than low IPO profit funds. This result is intuitive and implies that IPO allocations, especially to highly underpriced IPOs, drive new fund outperformance.

[Please Insert Table 6 About Here]

4.2.2 New fund performance persistence

In this section, we examine how persistent is the new mutual fund performance. We form portfolios of funds based on performance quintiles in each of months 1-6, separately. For each portfolio, we then estimate Jensen's Alpha. Carpenter and Lynch (1999) argue that portfolio groupings reduce estimation errors in the performance measures. We then, observe the performance of each portfolio during the subsequent or preceding months. For instance, when forming portfolios using performance at month 1, we observe the performance of each portfolio during each of months 2-6. When forming portfolios using performance at month 2, we observe the performance of each portfolio during month 1 and each of months 3-6 etc..

Table 7 reports the results. As expected, the highest Alpha is in Q5 and the lowest in Q1 of the month we form the portfolio. Interestingly, the portfolios show a mean reverting behavior. If we consider portfolios formed in month 1, Q5 portfolio

show statistically significant performance persistence up to month 4. Interestingly, however, the magnitude of Alphas decline substantially to 1.61% in month 2 from 8.03% in month 1, suggesting that the outperformance is relatively short-lived. Consistent with this interpretation, the bottom performance portfolio Q1 shows no statistical significant persistence from months 2 to 5, but peaks in month 6 with the statistically significant value of 0.80%. The spreads between Q5 and Q1 (Q5 – Q1) are positive and statistically significant from month 1 to month 5, with values of 12.28%, 1.50%, 0.84%, 0.95% and 0.83%, respectively. The difference becomes -0.37% in month 6 which consistently indicates the reverting behavior. Overall, similar patterns exist for the other portfolios formed at different months.

[Please Insert Table 7 About Here]

To conclude, both top and bottom portfolios do not show persistent performance. The result implies that the average outperformance of new funds is not driven by specific funds (grouped into portfolios) that perform well during the early months after the fund inception.

4.3 Alternative explanations

In this section, we evaluate whether the new fund outperformance and the IPO effect is related to managerial/fund characteristics. First, many mutual funds opt for a team management approach while others choose single managers. Extant literature suggests that the team opinion is the average opinion of the team members. Because

individual team members might have different opinions, the team decision will be a compromise (e.g., Sah and Stiglitz, 1986; 1988). Therefore, extreme opinions of members in a team are averaged out and teams eventually make less extreme decisions than individuals do (Bär, Kempf and Ruenzi, 2010). If less extreme decisions relate to less extreme performance, then the new fund outperformance and the IPO effect could be an artifact of extreme decisions made by individual managers. We examine this explanation by separating the new mutual funds by the type of management. In our sample, out of the 1,569 new funds, 862 (or 54.94%) are managed by teams, while 707 (or 45.06%) are managed by individual managers. Using each of these sub-samples, we re-estimate the Jensen's Alpha for the even-time portfolio.

Table 8 reports the results. The results show that the Alphas for both funds managed by an individual manager or a team are positive and statistically significant. In addition, the Alphas are positive and significant among the IPO funds rather than non-IPO funds, independent on whether the fund is managed by an individual or a team. Therefore, the results are not driven by less extreme decisions made by individual managers.

[Please Insert Table 8 About Here]

Second, Chen, Hong, Huang and Kubik (2004) find that fund returns decline with fund size. Therefore, it is possible that the outperformance of new funds is driven by the small size of the funds. We evaluate the merit of this explanation by sorting

funds based on their size at the time of the inception. We create five categories: very small size funds defined as funds with total net assets less than or equal to 1 million, small size funds defined as funds with total net assets greater than 1 million but less than or equal to 10 million, medium size funds defined as funds with total net assets greater than 10 million but less than or equal to 25 million, large size funds defined as funds with total net assets greater than 25 million but less than or equal to 100 million and very large size funds defined as funds with total net assets greater than 100 million. Then, we keep the assigned classification constant over time and we re-estimate Jensen's alpha for each size portfolio in event time. Table 9 presents the results. The results show that the new fund outperformance persist among all size categories, except the very large size funds. Nevertheless, the IPO effect is robust across all fund sizes. Thus, the IPO effect is distinct from fund size effect.

[Please Insert Table 9 About Here]

4.4 When the IPO effect is more prevalent?

Gaspar, Massa and Matos (2006) find that fund families strategically transfer performance across member funds, to increase overall family profits. Such favoritism may take the form of better allocations of underpriced IPOs and concentrate among large than small families and among old than young families. We examine this favoritism hypothesis by splitting new funds based on the median of their family (ii)

size, measured by total net assets, and (ii) age. Within our sample, we have 584 fund families.

Tables 10 and 11 report the results based on family size and age, respectively. The results show that new funds that belong to both small or large families tend to outperform during the 6-month period after inception. We obtain similar results for funds that belong to young or old families. Notably, the difference in new fund performance is not statistically different between small and large families, thus, favoritism among large families is unlikely to heighten the IPO effect in our sample. Remarkably, the difference in new fund performance is statistically different between young and old families; new fund outperformance is more prevalent among young families. Given that Chevalier and Ellison (1997) find that the flow-performance relation is stronger for younger funds, Gaspar, Massa and Matos (2006) hypothesize that favoritism should be stronger for younger funds. They do find, however, that old families help young funds, but young families favor older funds, presumably to create a flagship. Instead, consistent with theoretical expectations, we find a stronger IPO effect among younger families.

[Please Insert Tables 10 and 11 About Here]

4.5 New fund performance, IPO allocations and investment flows

From the previous analysis, it seems that new funds outperform during the 6-month period after inception, and that largely fund outperformance is driven by preferential

access to IPOs, especially more underpriced IPOs. On one hand, given that outperformance is relatively short-lived, investors may not give credence to these returns, and thus provide no additional investment flow. On the other hand, preferential access to IPOs may signal access to *future* IPOs. If so, we would expect investors to reward such IPO funds with greater investment flows. We investigate these perspectives by analyzing investments flows over the life of the fund or until the end of the sample period, whichever comes first. Table 12 reports the results.

The dependent variable is the monthly net dollar flow to the fund, starting from month 2, ranked by year and month. Given that news funds exhibit substantial variation in the total net assets, a fractional rank variable relative to the commonly used percentage measure is less subject to outlier effects (Evans, 2010). In addition, there is substantial variation in the net dollar flow across different market states. Thus, ranking flows within year and month controls for this variation.

First, we examine whether the 6-month outperformance of IPO funds leads to greater investment flows. Particularly, in specification 1, we include indicator variables for IPO and non-IPO funds that equal 1 during the 6-month period after inception, and zero otherwise. As control variable, we include only year/month fixed effects to control for time trends on flows. The results show that IPO and non-IPO funds have similar net dollar-flow rank. In specification 2, we further separate IPO funds into those that had high IPO profit relative to low IPO profit. Still, the results show that

both high IPO profit and low IPO profit funds have similar net dollar-flow rank relative to non-IPO funds. These results support the view that investors recognize the short-lived nature of IPO outperformance and do not provide additional investment flow to IPO funds relative to non-IPO funds.

Next, we examine whether the signaling hypothesis has any impact on investment flows. To do so, in specification 3, we split high and low IPO funds into those funds that managed to access IPOs during the period 6-18 months after inception. Interestingly, high IPO profit funds with access to future IPOs have a higher net dollar-flow rank than non-IPO funds (0.145 versus 0.095). The difference, shown at the bottom of Table 12, is statistically significant ($p<0.01$). In specification 4, we test whether this difference is due to other known determinants of investment flows. Consistent with previous literature, we include control variables such as fund size, measured the log of fund's total net assets (Log TNA), log of fund family's total net asset (Log Family TNA), fund age in year (Fund Age), the demeaned monthly fractional rank (between 0 and 1) of fund's expense ratio (Expense Ratio Rank), turnover ratio (Turnover Rank) and load (Fund Load Rank). Largely, the coefficient estimates of the control variables are consistent with prior literature. Specifically, fund size and family size have a positive impact on investment flows, while funds expense ratio and turnover affect negatively flows. Most importantly, however, the inclusion of control variables does not affect our previous findings. The results continue to show that high IPO profit funds with access to future IPOs have significantly greater net dollar-flow

rank than non-IPO funds ($p<0.01$). In addition, it worth noting that now low IPO profit funds with access to future IPOs also exhibit significantly greater net dollar-flow rank than non-IPO funds ($p<0.05$). In specification 5, we include the fractional rank variable of one-month lag fund flow (Lag Fund Flow Rank) as an additional control variable. Essentially, this specification addresses concerns about a potential dynamic endogeneity impact on investment flows. Such impact may arise from (latent) fund characteristics that make certain funds more appealing to investors than others. The results show that lagged fund flows have a positive impact on the net dollar-flow rank. In addition, the inclusion of lagged fund flows makes the difference in flows between high and low IPO funds with access to future IPOs relative to non-IPO funds to become smaller, but it remains highly significant ($p<0.01$ and $p<0.05$, respectively). Finally, in specification 6 we include the fund's cumulative return since inception (Cumulative Total Return). Cumulative return is positively related to flows. Notably, however, it does not help to explain the difference in flows between high and low profit IPO funds with access to future IPOs relative to non-IPO funds. Overall, these results are consistent with the view that investors differentiate among new funds with access to IPOs, especially to more underpriced IPOs, that exhibit the ability to secure additional IPOs in the future, and reward them with additional flow during the 6-month period after inception.

[Please Insert Table 12 About Here]

5. Conclusions

While prior literature has analyzed different facets of mutual fund performance, little is known about new fund performance. The creation of new funds seems to correlate with IPO activity, which provides opportunities for trade to enhance new fund performance. This study examines how mutual funds perform over time and what role IPO allocations play in performance. Prior studies that examine fund performance mostly utilize a cross-sectional approach in calendar time and misses the role of fund age and IPO allocations on fund performance. Instead, our event time analysis shows that new funds outperform during the 6-month period after inception. This result is unlikely to relate to incubation bias since (i) we select funds with inception dates in the database closed to the ticker creation date recorded in NASD, and (ii) we find positive and significant performance for already existing funds managed by the managers of new funds during the same 6-month period after the inception of the new fund.

In addition, consistent with an opportunity for trade hypothesis, we find that new fund outperformance concentrates among funds that hold IPO stocks, particularly highly underpriced IPO stocks, and it is relatively short-lived. New fund outperformance is prevalent both among funds managed by individual managers and funds managed by teams. Further, consistent with Chen, Hong, Huang and Kubik (2004), we find that new fund outperformance prevails among funds with different

sizes, except very large funds. Interestingly, however, the IPO effect on performance prevails among all fund sizes.

We also provide evidence about the sources of the IPO effect on fund performance. The results show that the IPO effect on performance is more prevalent among younger families. Gaspar, Massa and Matos (2006) argue that fund families have incentives to increase overall family profits by transferring performance across funds. Thus, favoritism among younger families, partly, explains the IPO effect on fund performance.

Finally, investors reward funds with additional investment flows not because of performance arising from IPO allocations, but rather because of a signal for access to future IPO allocations. This result suggests that signaling future IPO allocation is an effective strategy because investors distinguish between funds which have such preferential access to future IPOs from those that do not.

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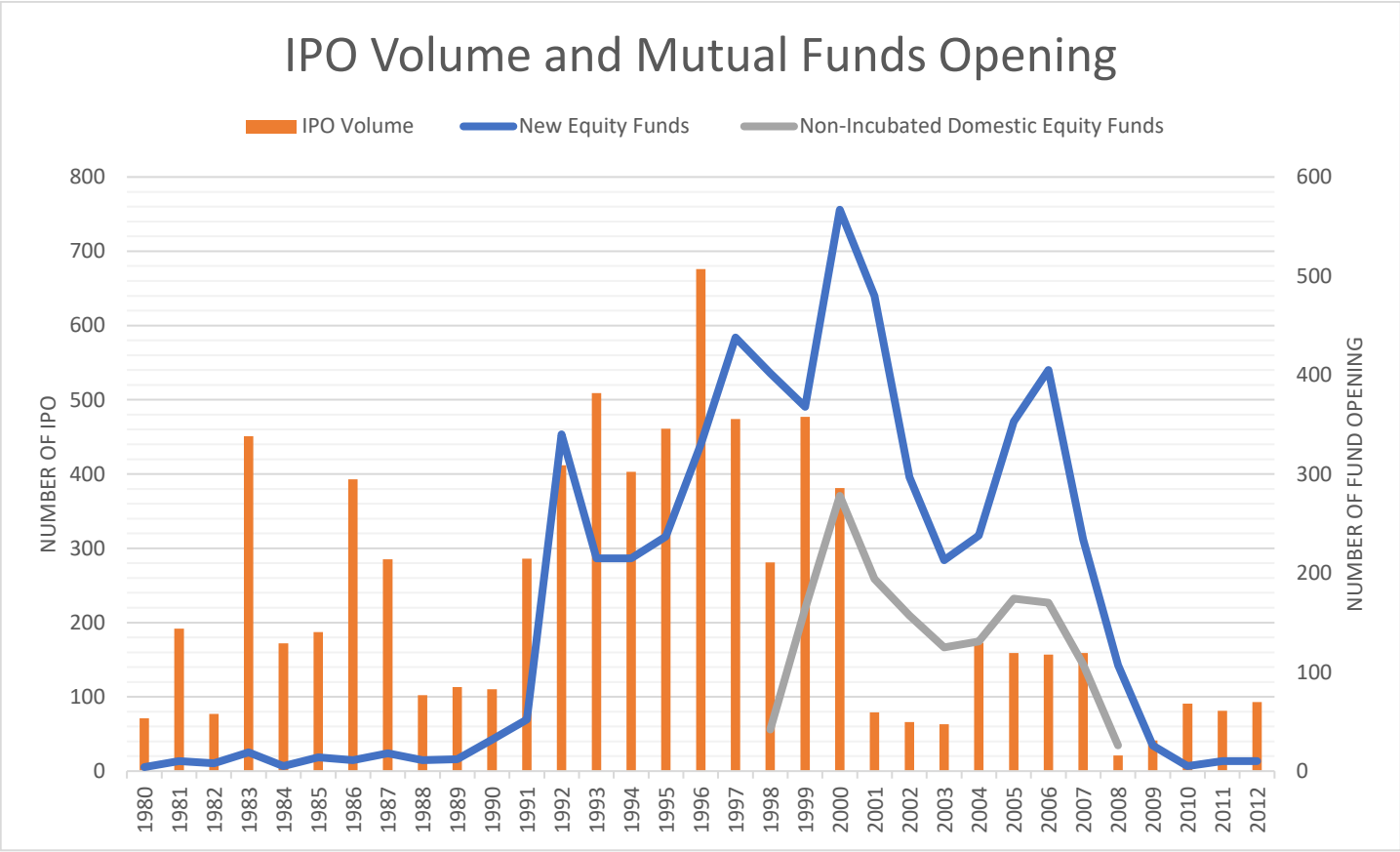

Figure 1. Number of Initial Public Offerings (bars) and New Funds Opening (lines) in Years, 1980-2012

Source: IPO volume is obtained from Jay Ritter, University of Florida, using data from Dealogic and Thomson Reuters. Only operating company IPOs with an offer price of at least $5 per share are included. Banks and S&Ls, natural resource limited partnerships, and ADRs are also not counted. Numbers of mutual funds opening in years are obtained from CRSP U.S. Survivorship-Bias-Free Mutual Fund Database.

Table 1. Descriptive Statistics

This table contains the summary statistics of the sample included in this study. The Mean, Standard deviation, Minimum and Maximum are reported for the total net assets of the fund ($M), fund age in years, expense ratio (%), turnover ratio (%), fund load (%), return after expenses (%) and fund flow (%). The table also reports the number of funds, individual fund managers and fund families.

Variable	Mean	Std. Dev.	Min	Max
Total Net Assets (TNA) (in Millions)	483.5	2,879	0.1	143,043
Fund Age (in Years)	10.72	3.65	0.08	17
Expense Ratio (%)	1.27	0.62	-0.03	14.71
Turnover Ratio (%)	85.66	147.61	0	5,466
Fund Load (%)	0.18	0.63	0	6.01
Raw Return (%)	0.51	5.51	-41.6	48.87
Fund Flow (%)	14.61	880	-131	185,492
Total Number of Funds	1,569			
Total Number of Observations	166,556			
Total Number of Recognizable Managers	959			
Total Number of Fund Families	584			

Table 2. Non-Incubated Fund Portfolios in Event Times: 12 Months Cut-offs

This table presents the performance of portfolios aligned by event time, which is based on the fund age in months after inception. Event portfolios are constructed as equal-weighted averages of fund return before expenses during each month. The sample includes non-incubated domestic equity funds using a 12-month cut-off point. The Carhart Four-Factor model is applied to estimate the portfolio performance (Alphas). Panel A presents results of monthly portfolio alphas in the first 12 month after fund inception, a pooled regression of returns in month 1-6 and the remaining period. Panel B presents the results of a regression of portfolio alphas on a New Fund dummy which equals 1 if the observation is within the first 6 months after inception and 0 otherwise. Sample period is 1998 to 2015. The significance levels are abbreviated with asterisks: *, ** and *** donate significance at the 10%, 5% and 1% levels, respectively. Clustered standard errors are in parentheses.

Panel A. Event Portfolio Abnormal Performance, by Month

Month	Alpha (%)		S.E.(%)	N
1	0.446	***	0.108	1,569
2	0.537	***	0.103	1,568
3	0.315	***	0.096	1,568
4	0.175	*	0.101	1,568
5	0.231	**	0.107	1,568
6	0.264	***	0.100	1,568
7	0.040		0.090	1,568
8	-0.014		0.094	1,568
9	0.071		0.105	1,568
10	-0.119		0.090	1,567
11	0.003		0.092	1,567
12	0.065		0.092	1,566
1 - 6	0.323	***	0.048	9,409
7 - End	0.008		0.006	157,147

Panel B. Regression of Portfolio Alphas on New-Fund Dummy (monthly)

	12 Month Cutoff Non-Incubation Funds	
Independent Variables:		
New-Fund Dummy	0.333	***
	(0.048)	
Constant	-0.005	
	(0.009)	
R-squared (%)	20.390	
N	190	

Table 3. Non-Incubated Fund Portfolios in Event Times: 30 Days Cut-offs

This table presents the performance of portfolios aligned by event time, which is based on the fund age in months after inception. Event portfolios are constructed as equal-weighted averages of fund return before expenses during each month. The sample includes non-incubated domestic equity funds using a 30 days cut-off point. The Carhart Four-Factor model is applied to estimate the portfolio performance (Alphas). Panel A presents results of monthly portfolio alphas in the first 12 month after fund inception, a pooled regression of returns in month 1-6 and the remaining period. Panel B presents the results of a regression of portfolio alphas on a New Fund dummy which equals 1 if the observation is within the first 6 months after inception and 0 otherwise. Sample period is 1998 to 2015. The significance levels are abbreviated with asterisks: *, ** and *** donate significance at the 10%, 5% and 1% levels, respectively. Clustered standard errors are in parentheses.

Panel A. Event Portfolio Abnormal Performance, by Month

Month	Alpha (%)		S.E.(%)	N
1	0.262	**	0.111	1,103
2	0.365	***	0.107	1,102
3	0.104		0.099	1,102
4	0.070		0.105	1,102
5	0.096		0.102	1,102
6	0.147		0.103	1,102
7	-0.142		0.093	1,102
8	-0.153		0.091	1,102
9	0.011		0.109	1,102
10	-0.082		0.095	1,101
11	-0.032		0.097	1,101
12	0.108		0.091	1,100
1 - 6	0.172	***	0.043	6,613
7 - End	0.007		0.008	102,822

Panel B. Regression of Portfolio Alphas on New-Fund Dummy (monthly)

	30 Days Cutoff Non-Incubation Funds	
Independent Variables:		
New-Fund Dummy	0.184	***
	(0.056)	
Constant	0.056	
	(0.010)	
R-squared (%)	5.920	
N	177	

Table 4. Non-Incubated Fund Portfolios Alpha Analysis: Manager's Existing Funds

This table presents the performance of event portfolios of the subsample based on the manager's existing funds, and new funds created by those managers. Based on the manager name and time information, existing funds are identified as funds that have been surviving for a while when the same manager's other new funds are being created. New funds includes all emerging funds that are being started by the same managers of existing funds. Carhart Four-Factor model is applied to estimate the portfolio performance (Alphas). Panel A presents results of portfolio alphas of new funds and existing funds. Panel B presents the regression results of portfolio alphas on a New Fund dummy which equals 1 if the observation is within the first 6 months after inception and 0 otherwise. Sample period is 1998 to 2015. The significance levels are abbreviated with asterisks: *, ** and *** donate significance at the 10%, 5% and 1% levels, respectively. Clustered standard errors are in parentheses.

Panel A: Event Portfolio Abnormal Performance: Sub-Group

	New Funds				**Existing Funds**			
Month	Alpha (%)		S.E.(%)	N	Alpha (%)		S.E.(%)	N
1	0.427	*	0.246	207	0.365		0.446	145
2	0.704	**	0.317	207	1.354	***	0.516	145
3	0.821	***	0.282	207	0.879	**	0.366	145
4	0.668	**	0.262	207	0.954	**	0.382	145
5	-0.042		0.290	207	0.253		0.454	145
6	0.460	*	0.264	207	0.568		0.451	145
7	0.202		0.229	207	0.478		0.350	145
8	-0.055		0.244	207	-0.219		0.350	145
9	0.082		0.318	207	0.390		0.443	145
10	0.296		0.258	206	0.036		0.439	145
11	0.121		0.240	206	0.633		0.403	145
12	0.254		0.251	206	0.383		0.448	145
1 - 6	0.466	***	0.135	1,242	0.714	***	0.215	870
7 - End	-0.008		0.017	22,507	0.018		0.020	18,124

Panel B. Regression of Portfolio Alphas on New-Fund Dummy (monthly). Sub-Group

	New Funds		Existing Funds	
Independent Variables:				
New-Fund Dummy	0.516	***	0.726	***
	(0.105)		(0.121)	
Constant	-0.010		0.003	
	(0.021)		(0.023)	
R-squared (%)	13.66		18.26	
N	155		164	

Table 5. Non-Incubated Fund Portfolios Alpha Analysis: IPO Holding

This table presents the performance of portfolios separated in two categories: Non-IPO new funds and IPO new fund. Funds with at least one IPO stock held in the 6 months after inception are considered as IPO new funds, and none IPO stock held to be Non-IPO new funds. The Carhart Four-Factor model is applied to estimate the portfolio performance (Alphas). Panel A presents results of portfolio alphas of funds without/with IPO stocks, respectively. Panel B presents the regression result of portfolio alphas on a New Fund dummy which equals 1 if the observation is within the first 6 months after inception and 0 otherwise. Sample period is 1998 to 2015. The significance levels are abbreviated with asterisks: *, ** and *** donate significance at the 10%, 5% and 1% levels, respectively. Clustered standard errors are in parentheses.

Panel A: Event Portfolio Abnormal Performance, IPO Holding Sub-Groups

	Funds with non-IPO Holding				**Funds with IPO Holding**			
Month	Alpha (%)		S.E.(%)	N	Alpha (%)		S.E.(%)	N
1	0.026		0.116	871	0.942	***	0.192	698
2	0.172	*	0.093	870	0.832	***	0.196	698
3	-0.031		0.098	870	0.732	***	0.170	698
4	-0.076		0.102	870	0.431	**	0.176	698
5	0.074		0.098	870	0.418	**	0.192	698
6	0.145		0.097	870	0.414	**	0.182	698
7	-0.031		0.097	870	0.040		0.156	698
8	-0.107		0.086	870	0.019		0.171	698
9	-0.120		0.109	870	0.176		0.192	698
10	-0.086		0.091	870	-0.152		0.164	697
11	-0.028		0.095	870	0.031		0.167	697
12	0.091		0.093	869	-0.014		0.177	697
1 - 6	0.053		0.043	5,221	0.620	***	0.088	4,185
7 - End	0.023	***	0.008	80,906	-0.004		0.009	76,241

Panel B. Regression of Portfolio Alphas on New-Fund Dummy (monthly). Sub-Groups Split by whether the fund holds at least one IPO stock in the first 6 months or not.

	Non-IPO Fund	IPO Fund	
Independent Variables:			
New-Fund Dummy	0.066	0.625	***
	(0.063)	(0.06)	
Constant	-0.014	0.003	
	(0.012)	(0.01)	
R-squared (%)	0.64	34.78	
N	174	187	

Table 6. Non-Incubated Fund Portfolios Alpha Analysis: IPO Profit

This table presents the performance of portfolios separated in two categories: High IPO Profit and Low IPO Profit new fund. The IPO profit is calculated as the aggregation of multiplying IPO shares held within the 6 months after inception with the first day closing price change of IPO stock comparing to the offering price. Funds with top 25% IPO profit are considered as high IPO profit new funds, while funds with the rest 75% IPO profit are considered as low IPO profit funds. The Carhart Four-Factor model is applied to estimate the portfolio performance (Alphas). Panel A presents results of portfolio alphas of funds with high and low IPO profit. Panel B presents the regression result of portfolio alphas on a New Fund dummy which equals 1 if the observation is within the first 6 months after inception and 0 otherwise for two subgroups. Sample period is 1998 to 2015. The significance levels are abbreviated with asterisks: *, ** and *** donate significance at the 10%, 5% and 1% levels, respectively. Clustered standard errors are in parentheses.

Panel A: Abnormal performance split by IPO holdings

	Funds with High IPO Profit				**Funds with Low IPO Profit**			
Month	Alpha (%)		S.E.(%)	N	Alpha (%)		S.E.(%)	N
1	2.333	***	0.412	216	0.277	*	0.167	482
2	1.682	***	0.420	216	0.319	*	0.174	482
3	1.697	***	0.390	216	0.342	**	0.151	482
4	0.960	**	0.399	216	0.215		0.167	482
5	0.772	*	0.416	216	0.227		0.178	482
6	0.996	**	0.408	216	0.258		0.170	482
7	0.538		0.369	216	-0.036		0.147	482
8	0.199		0.387	216	-0.057		0.151	482
9	1.017	**	0.404	216	0.011		0.192	482
10	-0.289		0.353	216	0.073		0.157	481
11	0.549		0.360	216	0.073		0.151	481
12	0.092		0.407	216	0.136		0.136	481
1 - 6	1.411	***	0.209	1,296	0.292	***	0.070	2,892
7 - End	-0.052	***	0.019	22,506	0.027	***	0.010	53,735

Panel B. Regression of Portfolio Alphas on New-Fund Dummy (monthly). Sub-Groups Split by whether the profit generated from IPO holdings is greater than 75% or below.

	High Profit IPO		Low Profit IPO	
Independent Variables:				
New-Fund Dummy	1.406	***	0.262	**
	(0.118)		(0.06)	
Constant	0.001		0.011	
	(0.022)		(0.01)	
R-squared (%)	45.62		9.91	
N	170		181	

Table 7. Non-Incubated Fund Portfolios Performance Persistence

This table presents the performance persistence analysis. Quintile portfolios based on fund performance in each of the months 1-6 are constructed separately. Quintile 1 (Q1) refers to the worst performing quintile while Quintile 5 (Q5) stands for the best performing one. The differences between the best and worst performance quintiles (Q5-Q1) are also reported. Afterwards, performances of each portfolio during the subsequent or preceding months are estimated. For instance, if quintile portfolios based on fund performance at month 1 are formed, we estimate the performance of each portfolio during each of the months 2-6. When constructing quintiles benchmarking on the performance at month 2, the performance of each portfolio during month 1 and each of the months 3-6 should be observed. Sample period is 1998 to 2015. The significance levels are abbreviated with asterisks: *, ** and *** donate significance at the 10%, 5% and 1% levels, respectively.

Table 7. Non-Incubated Fund Portfolios Performance Persistence (Part 1)

	Month 1			Month 2			Month 3			Month 4			Month 5			Month 6		
	Alpha (%)		S.E .(%)	Alpha (%)		S.E. (%)	Alpha (%)		S.E. (%)	Alpha (%)		S.E. (%)	Alpha (%)		S.E. (%)	Alpha (%)		S.E. (%)
Quintiles based on Month 1 Performance:																		
Q1	-4.251	***	0.413	0.104		0.268	0.038		0.265	-0.269		0.229	-0.418	*	0.243	0.800	**	0.318
Q2	-1.620	***	0.060	0.566	***	0.199	-0.037		0.200	0.054		0.197	0.174		0.244	0.674	***	0.198
Q3	0.686	***	0.044	0.229		0.196	0.228		0.175	0.178		0.208	0.266		0.181	0.160		0.157
Q4	3.127	***	0.077	0.621	***	0.227	0.058		0.182	0.245		0.164	0.654	***	0.184	0.341	*	0.178
Q5	8.028	***	0.632	1.608	***	0.436	0.879	***	0.289	0.684	**	0.340	0.414		0.334	0.434	*	0.246
Q5-Q1	12.280	***	0.755	1.504	***	0.512	0.841	**	0.392	0.953	**	0.410	0.831	**	0.413	-0.366		0.402
Quintiles based on Month 2 Performance:																		
Q1	0.507	*	0.265	-4.477	***	0.391	0.268		0.296	-0.106		0.252	0.010		0.240	0.089		0.237
Q2	0.455	*	0.234	-1.831	***	0.069	0.447	***	0.154	0.108		0.162	0.010		0.182	0.054		0.170
Q3	0.279		0.243	0.152	***	0.036	-0.042		0.199	0.294	**	0.121	0.133		0.191	0.154		0.198
Q4	0.319		0.205	2.345	***	0.064	0.508	***	0.195	-0.125		0.201	0.205		0.189	0.645	***	0.211
Q5	0.959	***	0.282	6.104	***	0.665	0.733	**	0.342	0.856	**	0.366	0.910	***	0.332	0.089		0.262
Q5-Q1	0.452		0.387	10.581	***	0.771	0.465		0.453	0.962	**	0.444	0.900	**	0.409	0.000		0.353
Quintiles based on Month 3 Performance:																		
Q1	0.183		0.281	1.045	***	0.365	-3.547	***	0.371	-0.122		0.259	-0.180		0.278	0.395		0.276
Q2	0.239		0.234	0.422	*	0.232	-1.843	***	0.058	0.237		0.190	0.058		0.179	0.207		0.199
Q3	0.628	***	0.186	0.570	***	0.163	0.537	***	0.043	0.448	**	0.192	0.058		0.176	0.211		0.148
Q4	0.071		0.180	0.302	*	0.178	2.539	***	0.078	0.122		0.189	0.087		0.220	0.016		0.147
Q5	0.655	**	0.256	0.322		0.261	7.240	***	0.641	0.775	**	0.373	0.784	**	0.331	0.555	*	0.307
Q5-Q1	0.472		0.380	-0.723		0.449	10.787	***	0.741	0.897	**	0.454	0.964	**	0.432	0.159		0.412

Table 7. Non-Incubated Fund Portfolios Performance Persistence (Part 2)

	Month 1			Month 2			Month 3			Month 4			Month 5			Month 6		
	Alpha (%)		S.E. (%)	Alpha (%)		S.E. (%)	Alpha (%)		S.E. (%)	Alpha (%)		S.E. (%)	Alpha (%)		S.E. (%)	Alpha (%)		S.E. (%)
Quintiles based on Month 4 Performance:																		
Q1	0.856	**	0.382	1.294	***	0.273	0.578	*	0.332	-6.152	***	0.494	-0.245		0.275	0.750	**	0.330
Q2	0.520	**	0.219	-0.126		0.181	-0.053		0.233	-2.212	***	0.069	0.217		0.162	-0.151		0.182
Q3	-0.172		0.214	0.077		0.203	0.140		0.153	0.075	*	0.041	0.187		0.172	0.231		0.151
Q4	0.332	*	0.179	0.198		0.167	0.535	***	0.163	2.301	***	0.075	0.186		0.179	-0.010		0.182
Q5	0.543	**	0.260	0.698	**	0.289	0.272		0.268	6.863	***	0.566	1.030	***	0.342	0.570	**	0.274
Q5-Q1	-0.313		0.462	-0.595		0.398	-0.305		0.427	13.015	***	0.751	1.275	***	0.439	-0.180		0.429
Quintiles based on Month 5 Performance:																		
Q1	0.783	**	0.315	0.274		0.275	0.512	*	0.275	0.567		0.410	-4.301	***	0.540	0.606	**	0.281
Q2	0.217		0.225	0.458	*	0.249	0.437	**	0.217	0.072		0.242	-2.084	***	0.086	0.273		0.216
Q3	0.243		0.165	0.179		0.182	0.037		0.168	0.397	**	0.172	0.333	***	0.045	-0.193		0.133
Q4	0.202		0.146	-0.041		0.151	0.209	*	0.122	0.397	***	0.148	2.477	***	0.087	0.248		0.192
Q5	1.261	***	0.459	1.109	***	0.309	0.401		0.265	0.391		0.284	5.932	***	0.569	0.651	*	0.336
Q5-Q1	0.478		0.557	0.835	**	0.414	-0.110		0.382	-0.176		0.498	10.233	***	0.785	0.044		0.438
Quintiles based on Month 6 Performance:																		
Q1	0.803	***	0.311	1.141	***	0.347	0.034		0.344	0.354		0.312	0.610	*	0.337	-5.186	***	0.368
Q2	-0.028		0.181	0.009		0.184	0.236		0.207	0.058		0.189	0.454	**	0.202	-1.731	***	0.056
Q3	0.035		0.197	0.118		0.142	-0.053		0.206	0.039		0.177	0.390	**	0.181	0.386	***	0.040
Q4	0.432	**	0.220	0.336	*	0.180	0.158		0.148	0.168		0.192	0.511	*	0.279	2.478	***	0.089
Q5	0.815	***	0.240	1.398	***	0.304	0.436	*	0.245	0.363		0.251	-0.602	**	0.235	6.142	***	0.520
Q5-Q1	0.012		0.392	0.258		0.461	0.403		0.423	0.009		0.401	-1.211	***	0.411	11.328	***	0.638

Table 8. Non-Incubated Fund Portfolios Alpha Analysis: Managerial Characteristics (Part 1)

This table presents the event portfolio performance of funds separated into two categories: new funds created by individual and multiple manager, using the number of manager for each fund at month 1. Panel A presents results of portfolio alphas of individual and multiple manager new funds. Panel B presents further results of portfolio alphas of individual manager new funds without and with IPO holdings. Panel C presents results of portfolio alphas of multiple manager new funds without and with IPO holdings. Panel D presents the regression result of portfolio alphas on a New Fund dummy of each separation subgroup. The significance levels are abbreviated with asterisks: *, ** and *** donate significance at the 10%, 5% and 1% levels, respectively. Clustered standard errors are in parentheses.

Panel A: Abnormal Performance Split by Managerial Characteristics

	Funds with Individual Managers				**Funds with Multiple Managers**			
Month	Alpha (%)		S.E.(%)	N	Alpha (%)		S.E.(%)	N
1	0.544	***	0.170	707	0.375	***	0.136	862
2	0.645	***	0.161	707	0.439	***	0.136	861
3	0.520	***	0.147	707	0.147		0.126	861
4	0.337	**	0.164	707	0.046		0.125	861
5	0.252		0.166	707	0.234		0.142	861
6	0.262	*	0.149	707	0.278	**	0.135	861
7	0.202		0.143	707	-0.101		0.117	861
8	0.015		0.158	707	-0.003		0.116	861
9	0.155		0.177	707	-0.017		0.128	861
10	-0.068		0.143	706	-0.164		0.116	861
11	0.121		0.145	706	-0.087		0.119	861
12	-0.051		0.146	706	0.157		0.117	860
1 - 6	0.416	***	0.075	4,242	0.250	***	0.062	5,167
7 - End	0.014		0.009	75,714	0.002		0.008	81,433

Panel B: Abnormal Performance of Individual Manager New Funds Split by IPO Holding

	Individual Manager Non-IPO Funds				**Individual Manager IPO Funds**			
Month	Alpha (%)		S.E.(%)	N	Alpha (%)		S.E.(%)	N
1	0.270	*	0.164	367	0.792	***	0.302	340
2	0.122		0.153	367	1.122	***	0.280	340
3	0.021		0.151	367	1.060	***	0.254	340
4	0.100		0.180	367	0.495	*	0.267	340
5	0.151		0.144	367	0.299		0.288	340
6	0.234		0.166	367	0.374		0.247	340
7	0.176		0.153	367	0.242		0.242	340
8	-0.006		0.157	367	-0.089		0.263	340
9	-0.221		0.183	367	0.451		0.308	340
10	-0.084		0.143	367	-0.148		0.243	339
11	0.093		0.156	367	0.122		0.251	339
12	-0.013		0.151	367	-0.134		0.267	339
1 - 6	0.154	**	0.064	2,202	0.673	***	0.135	2,040
7 - End	0.032	**	0.013	36,391	0.002		0.013	39,323

Table 8. Non-Incubated Fund Portfolios Alpha Analysis: Managerial Characteristics (Part 2)

Panel C: Abnormal Performance of Multiple Manager New Funds Split by IPO Holding

	Multiple Manager Non-IPO Funds				Multiple Manager IPO Funds			
Month	Alpha (%)		S.E.(%)	N	Alpha (%)		S.E.(%)	N
1	-0.156		0.166	504	1.073	***	0.228	358
2	0.210	*	0.114	503	0.523	*	0.278	358
3	-0.087		0.127	503	0.439	**	0.223	358
4	-0.207	*	0.116	503	0.403	*	0.231	358
5	0.040		0.133	503	0.588	**	0.254	358
6	0.064		0.118	503	0.455	*	0.254	358
7	-0.190		0.125	503	-0.132		0.203	358
8	-0.175	*	0.101	503	0.180		0.226	358
9	-0.083		0.124	503	-0.105		0.248	358
10	-0.101		0.118	503	-0.157		0.219	358
11	-0.125		0.118	503	-0.058		0.230	358
12	0.153		0.117	502	0.096		0.236	358
1 - 6	-0.021		0.057	3,019	0.573	***	0.113	2,148
7 - End	0.016		0.010	44,515	-0.010		0.013	36,918

Panel D. Regression of Portfolio Alphas on New-Fund Dummy (monthly). Sub-Group

	Individual Managers		Multiple Managers		Difference	
New-Fund Dummy	0.424	***	0.254	***	-0.170	**
	(0.063)		(0.049)		(0.080)	
Constant	0.003		-0.001			
	(0.011)		(0.009)			
R-squared (%)	20.07		12.94			
N	182		181			
	Individual Non-IPO		Individual IPO		Difference	
New-Fund Dummy	0.163	*	0.683	***	0.519	***
	(0.090)		(0.080)		(0.121)	
Constant	-0.014		0.008			
	(0.017)		(0.015)			
R-squared (%)	2.01		29.07			
N	162		178			
	Multiple Non-IPO		Multiple IPO		Difference	
New-Fund Dummy	-0.012		0.577	***	0.588	***
	(0.062)		(0.069)		(0.093)	
Constant	-0.011		0.003			
	(0.012)		(0.013)			
R-squared (%)	0.02		28.86			
N	163		174			

Table 9. Non-Incubated Fund Portfolios Alpha Analysis: Size Groups (Part 1)

This table presents the event portfolio performance of funds separated into 5 categories based on funds' initial total net asset (TNA) at month 1. Funds started with the TNA less than 1 million are identified as very small funds; with TNA between 1 and 10 million are small funds; with TNA between 10 and 25 million are medium funds; with TNA between 25 and 100 million are large funds and with TNA greater than 100 million are identified as very large funds. Panel A presents results of portfolio alphas of funds within size groups. Panel B presents portfolio alphas of IPO new funds in different size groups. Panel C presents results of portfolio alphas of Non-IPO new funds in different size groups. Panel D presents the regression result of portfolio alphas on a New Fund dummy of each size subgroup. The significance levels are abbreviated with asterisks: *, ** and *** donate significance at the 10%, 5% and 1% levels, respectively. Clustered standard errors are in parentheses.

Panel A: Abnormal performance split by mutual funds started within different size categories

	Very Small Fund: TNA <= 1				**Small Fund: 1 < TNA <= 10**				**Medium Fund: 10 < TNA <= 25**				**Large Fund: 25 < TNA <= 100**				**Very Large Fund: TNA > 100**			
Month	Alpha (%)		S.E.(%)	N	Alpha (%)		S.E.(%)	N	Alpha (%)		S.E.(%)	N	Alpha (%)		S.E.(%)	N	Alpha (%)		S.E.(%)	N
1	0.33	*	0.19	492	0.57	***	0.17	469	-0.11		0.30	249	1.19	***	0.34	207	0.32		0.38	152
2	0.33	**	0.14	492	0.74	***	0.19	468	0.66	*	0.34	249	0.42		0.29	207	0.71	**	0.33	152
3	0.10		0.13	492	0.47	**	0.19	468	0.35		0.24	249	0.20		0.29	207	0.55		0.40	152
4	0.12		0.18	492	0.36	*	0.20	468	0.37		0.28	249	0.06		0.29	207	-0.48		0.31	152
5	0.40	**	0.18	492	0.33	*	0.20	468	0.40		0.27	249	-0.23		0.35	207	0.03		0.38	152
6	0.20		0.13	492	0.52	***	0.18	468	0.27		0.27	249	0.16		0.33	207	-0.12		0.44	152
7	0.21		0.15	492	-0.01		0.16	468	-0.26		0.21	249	-0.03		0.33	207	0.41		0.33	152
8	-0.08		0.14	492	0.17		0.17	468	0.00		0.26	249	0.27		0.35	207	-0.57	*	0.32	152
9	-0.10		0.17	492	0.20		0.21	468	0.04		0.26	249	-0.06		0.37	207	0.38		0.34	152
10	-0.19		0.13	491	0.01		0.19	468	0.40	*	0.21	249	-0.66	**	0.29	207	-0.31		0.29	152
11	0.01		0.14	491	0.15		0.18	468	-0.20		0.23	249	-0.07		0.27	207	-0.37		0.36	152
12	-0.19		0.13	490	0.37	**	0.17	468	0.37		0.24	249	-0.23		0.27	207	-0.30		0.45	152
1 - 6	0.23	***	0.08	2,952	0.50	***	0.09	2,809	0.29	**	0.13	1,494	0.28	**	0.13	1,242	0.16		0.17	912
7 - End	0.03	***	0.01	46,567	0.02		0.01	45,098	0.00		0.01	25,839	-0.01		0.02	22,476	-0.04	**	0.02	17,167

Table 9. Non-Incubated Fund Portfolios Alpha Analysis: Size Groups (Part 2)

Panel B: Abnormal performance of New Funds with IPO Holding split by Initial TNA

	Very Small Fund: TNA <= 1				**Small Fund: 1 < TNA <= 10**				**Medium Fund: 10 < TNA <= 25**				**Large Fund: 25 < TNA <= 100**				**Very Large Fund: TNA > 100**			
Month	Alpha (%)		S.E.(%)	N	Alpha (%)		S.E.(%)	N	Alpha (%)		S.E.(%)	N	Alpha (%)		S.E.(%)	N	Alpha (%)		S.E.(%)	N
1	0.42		0.33	201	0.98	***	0.31	185	0.63		0.52	114	2.09	***	0.49	119	1.19	*	0.71	79
2	0.50	**	0.25	201	1.48	***	0.38	185	1.17	*	0.67	114	0.30		0.49	119	0.99		0.70	79
3	0.40		0.24	201	0.92	**	0.38	185	0.67	*	0.37	114	0.82	*	0.46	119	1.00	*	0.58	79
4	0.26		0.31	201	0.62	*	0.37	185	0.90	*	0.47	114	0.38		0.44	119	-0.40		0.58	79
5	0.48		0.32	201	0.86	**	0.40	185	0.86	*	0.48	114	-0.12		0.56	119	-0.19		0.58	79
6	0.32		0.23	201	0.99	***	0.37	185	0.44		0.48	114	0.08		0.50	119	0.09		0.71	79
7	0.42		0.26	201	0.15		0.33	185	-0.54		0.34	114	-0.13		0.47	119	0.21		0.46	79
8	0.17		0.24	201	0.33		0.31	185	0.27		0.48	114	0.07		0.49	119	-1.06	*	0.55	79
9	0.01		0.30	201	0.88	**	0.43	185	0.28		0.53	114	-0.47		0.59	119	0.52		0.62	79
10	0.03		0.23	200	-0.21		0.38	185	0.40		0.37	114	-0.77	**	0.38	119	-0.35		0.54	79
11	-0.02		0.24	200	0.77	**	0.37	185	0.01		0.34	114	-0.09		0.45	119	-0.56		0.71	79
12	-0.39	*	0.21	200	0.55		0.40	185	-0.08		0.38	114	-0.59		0.41	119	-0.20		0.78	79
1 - 6	0.37	***	0.14	1206	0.97	***	0.19	1110	0.72	***	0.24	684	0.58	***	0.19	714	0.46		0.29	474
7 - End	0.02		0.02	20,347	0.01		0.02	20,108	0.00		0.02	12,249	-0.04		0.02	13,522	-0.04	**	0.02	10,015

Table 9. Non-Incubated Fund Portfolios Alpha Analysis: Size Groups (Part 3)

Panel C: Abnormal performance of New Funds without IPO Holding split by Initial TNA

	Very Small Fund: TNA <= 1				**Small Fund: 1 < TNA <= 10**				**Medium Fund: 10 < TNA <= 25**				**Large Fund: 25 < TNA <= 100**				**Very Large Fund: TNA > 100**			
Month	Alpha (%)		S.E.(%)	N	Alpha (%)		S.E.(%)	N	Alpha (%)		S.E.(%)	N	Alpha (%)	S.E.(%)	N		Alpha (%)		S.E.(%)	N
1	0.20		0.20	291	0.24		0.18	284	-0.66	**	0.33	135	-0.20	0.31	88		-0.31		0.30	73
2	0.20		0.16	291	0.15		0.17	283	0.05		0.26	135	0.33	0.26	88		0.28		0.23	73
3	-0.18		0.15	291	0.16		0.18	283	0.01		0.24	135	-0.19	0.25	88		-0.55		0.38	73
4	-0.02		0.18	291	-0.01		0.19	283	-0.04		0.29	135	-0.18	0.33	88		-0.51	**	0.21	73
5	0.25		0.16	291	0.03		0.17	283	-0.13		0.24	135	-0.14	0.31	88		0.10		0.38	73
6	0.17		0.15	291	0.24		0.17	283	0.23		0.28	135	0.01	0.26	88		0.03		0.26	73
7	0.18		0.17	291	-0.02		0.16	283	-0.10		0.25	135	-0.06	0.32	88		0.20		0.29	73
8	-0.19		0.15	291	-0.02		0.16	283	-0.08		0.20	135	0.00	0.30	88		-0.16		0.30	73
9	-0.25		0.19	291	-0.04		0.21	283	-0.15		0.21	135	0.17	0.30	88		-0.03		0.28	73
10	-0.33	**	0.14	291	-0.03		0.16	283	0.52	**	0.26	135	-0.29	0.41	88		-0.06		0.25	73
11	0.12		0.16	291	-0.11		0.16	283	-0.35		0.27	135	0.13	0.26	88		0.05		0.24	73
12	-0.08		0.14	290	0.14		0.15	283	0.61	**	0.29	135	0.10	0.30	88		-0.22		0.42	73
1 - 6	0.11		0.07	1746	0.16	**	0.08	1699	-0.13		0.10	810	-0.06	0.13	528		-0.18		0.15	438
7 - End	0.04	***	0.01	26,220	0.03	**	0.02	24,990	0.00		0.02	13,590	0.02	0.02	8,954		-0.02		0.02	7,152

Table 9. Non-Incubated Fund Portfolios Alpha Analysis: Size Groups (Part 4)

Panel D. Regression of Portfolio Alphas on New-Fund Dummy (monthly), Size Groups

	Very Small	Small	Medium	Large	Very Large
New-Fund Dummy	0.248 ***	0.491 ***	0.343 ***	0.311 ***	0.182
	(0.072)	(0.070)	(0.081)	(0.093)	(0.114)
Constant	-0.001	0.008	-0.021	-0.010	-0.013
	(0.014)	(0.013)	(0.016)	(0.018)	(0.022)
R-squared (%)	6.910	22.380	10.400	6.270	1.580
N	161	171	158	168	162
	Very Small IPO	Small IPO	Medium IPO	Large IPO	Very Large IPO
New-Fund Dummy	0.382 ***	0.956 ***	0.789 ***	0.636 ***	0.447 **
	(0.085)	(0.109)	(0.130)	(0.130)	(0.186)
Constant	0.016	0.018	-0.012	-0.046	0.000
	(0.017)	(0.021)	(0.029)	(0.027) *	(0.041)
R-squared (%)	12.420	32.850	23.430	14.700	4.570
N	145	158	122	140	123
	Very Small Non-IPO	Small Non-IPO	Medium Non-IPO	Large Non-IPO	Very Large Non-IPO
New-Fund Dummy	0.107	0.121	-0.080	-0.070	-0.157
	(0.088)	(0.086)	(0.093)	(0.099)	(0.118)
Constant	-0.004	0.012	-0.011	0.008	-0.004
	(0.018)	(0.018)	(0.020)	(0.025)	(0.031)
R-squared (%)	1.030	1.420	0..59	0.540	2.140
N	144	140	126	94	84

Table 10. Non-Incubated Fund Portfolios Alpha Analysis: Family Size (Part 1)

This table presents the event portfolio performance of funds separated into funds started by small and large family TNA, based on the median of family TNA of each fund at month 1. Panel A presents results of portfolio alphas of new funds created by small and large fund family. Panel B presents further results of portfolio alphas of large family new funds without and with IPO holdings. Panel C presents results of portfolio alphas of small family new funds without and with IPO holdings. Panel D presents the regression result of portfolio alphas on a New Fund dummy of each separation subgroup. The significance levels are abbreviated with asterisks: *, ** and *** donate significance at the 10%, 5% and 1% levels, respectively. Clustered standard errors are in parentheses.

Panel A: Abnormal Performance of New Funds split by Fund Family Size

	Funds with Small Family Size				**Funds with Large Family Size**			
Month	Alpha (%)		S.E.(%)	N	Alpha (%)		S.E.(%)	N
1	0.430	**	0.169	731	0.515	***	0.150	777
2	0.520	***	0.156	731	0.599	***	0.131	777
3	0.226		0.148	731	0.449	***	0.128	777
4	0.290		0.179	731	0.048		0.126	777
5	0.176		0.152	731	0.214		0.148	777
6	0.510	***	0.153	731	0.078		0.140	777
7	0.117		0.141	731	0.003		0.122	777
8	0.128		0.145	731	-0.103		0.120	777
9	0.154		0.172	731	0.070		0.136	777
10	-0.046		0.141	730	-0.184		0.128	777
11	0.046		0.146	730	-0.126		0.120	777
12	0.063		0.150	729	-0.002		0.114	777
1 - 6	0.343	***	0.076	4,386	0.316	***	0.062	4,662
7 - End	0.009		0.009	75,628	-0.001		0.009	75,483

Panel B: Abnormal Performance of Large Family Size New Funds split by IPO holdings

	Large Family Non-IPO Fund			**Large Family IPO Fund**			
Month	Alpha (%)	S.E.(%)	N	Alpha (%)		S.E.(%)	N
1	-0.040	0.128	390	1.058	***	0.267	387
2	0.205	0.130	390	0.848	***	0.233	387
3	0.088	0.141	390	0.711	***	0.209	387
4	-0.128	0.129	390	0.205		0.218	387
5	-0.026	0.117	390	0.428		0.263	387
6	0.125	0.135	390	0.207		0.223	387
7	0.034	0.134	390	-0.222		0.193	387
8	0.034	0.113	390	-0.288		0.211	387
9	-0.079	0.129	390	0.034		0.232	387
10	-0.019	0.117	390	-0.389	*	0.225	387
11	-0.176	0.124	390	-0.176		0.204	387
12	-0.131	0.116	390	0.118		0.228	387
1 - 6	0.017	0.053	2,340	0.589	***	0.106	2,322
7 - End	0.009	0.011	33,891	-0.010		0.013	41,592

Table 10. Non-Incubated Fund Portfolios Alpha Analysis: Family Size (Part 2)

Panel C: Abnormal Performance of Small Family Size New Funds split by IPO holdings

	Small Family Non-IPO Fund				**Small Family with IPO Fund**			
Month	Alpha (%)		S.E.(%)	N	Alpha (%)		S.E.(%)	N
1	0.053		0.205	420	0.868	***	0.283	311
2	0.226	*	0.137	420	0.734	**	0.293	311
3	-0.158		0.142	420	0.781	***	0.266	311
4	-0.068		0.170	420	0.751	**	0.301	311
5	0.071		0.149	420	0.380		0.276	311
6	0.191		0.148	420	0.837	***	0.285	311
7	-0.030		0.150	420	0.365		0.249	311
8	-0.127		0.132	420	0.359		0.269	311
9	-0.056		0.176	420	0.417		0.329	311
10	-0.099		0.147	420	0.084		0.265	310
11	-0.034		0.145	420	0.306		0.279	310
12	0.176		0.148	419	-0.160		0.278	310
1 - 6	0.065		0.070	2,520	0.685	***	0.140	1,866
7 - End	0.000	**	0.012	40,979	0.003		0.013	34,649

Panel D. Regression of Portfolio Alphas on New-Fund Dummy (monthly). Sub-Group

	Small Family		Large Family		Difference	
New-Fund Dummy	0.311	***	0.375	***	0.064	
	(0.058)		(0.061)		(0.085)	
Constant	0.006		-0.016			
	(0.011)		(0.011)			
R-squared (%)	14.07		16.95			
N	176		186			

	Large Family Non-IPO		Large Family IPO		Difference	
New-Fund Dummy	0.038		0.571	***	0.532	***
	(0.059)		(0.078)		(0.098)	
Constant	-0.001		0.005			
	(0.012)		(0.015)			
R-squared (%)	0.3		23.8			
N	144		173			

	Small Family Non-IPO		Small Family IPO		Difference	
New-Fund Dummy	0.088		0.734	***	0.646	***
	(0.078)		(0.083)		(0.113)	
Constant	-0.035		-0.009			
	(0.015)	***	(0.015)			
R-squared (%)	0.78		30.67			
N	166		180			

Table 11. Non-Incubated Fund Portfolios Alpha Analysis: Family Age (Part 1)

This table presents the event portfolio performance of funds separated into funds started by young and old fund family, based on the median of family age of each fund at month 1. Panel A presents results of portfolio alphas of new funds created by young and old fund family. Panel B presents further results of portfolio alphas of young family new funds without and with IPO holdings. Panel C presents results of portfolio alphas of old family new funds without and with IPO holdings. Panel D presents the regression result of portfolio alphas on a New Fund dummy of each separation subgroup. The significance levels are abbreviated with asterisks: *, ** and *** donate significance at the 10%, 5% and 1% levels, respectively. Clustered standard errors are in parentheses.

Panel A: Abnormal Performance of New Funds split by Fund Family Age

	Funds with Young Fund Family				**Funds with Old Fund Family**			
Month	Alpha (%)		S.E.(%)	N	Alpha (%)		S.E.(%)	N
1	0.656	***	0.191	676	0.283	**	0.121	832
2	0.856	***	0.176	676	0.246	**	0.115	832
3	0.472	***	0.164	676	0.236	**	0.110	832
4	0.313		0.192	676	0.117		0.111	832
5	0.187		0.190	676	0.217	*	0.115	832
6	0.398	**	0.186	676	0.168		0.111	832
7	0.152		0.175	676	-0.040		0.092	832
8	0.039		0.177	676	0.005		0.098	832
9	0.183		0.204	676	-0.009		0.105	832
10	-0.204		0.168	675	-0.061		0.097	832
11	0.191		0.176	675	-0.184	*	0.100	832
12	0.071		0.178	674	-0.019		0.096	832
1 - 6	0.456	***	0.092	4,056	0.215	***	0.045	4,992
7 - End	0.008		0.009	74,001	0.000		0.008	77,110

Panel B: Abnormal Performance of Young Family New Funds split by IPO holdings

	Young Family Non-IPO Fund				**Young Family IPO Fund**			
Month	Alpha (%)		S.E.(%)	N	Alpha (%)		S.E.(%)	N
1	-0.104		0.248	329	1.273	***	0.281	347
2	0.356	**	0.151	329	1.187	***	0.297	347
3	-0.220		0.163	329	1.092	***	0.259	347
4	-0.116		0.193	329	0.596	**	0.299	347
5	0.013		0.178	329	0.447		0.300	347
6	0.287		0.200	329	0.518	*	0.291	347
7	0.085		0.195	329	0.141		0.272	347
8	-0.031		0.155	329	0.012		0.290	347
9	-0.044		0.210	329	0.262		0.341	347
10	-0.173		0.176	329	-0.169		0.286	346
11	0.072		0.179	329	0.463		0.299	346
12	0.142		0.185	328	0.017		0.298	346
1 - 6	0.030		0.086	1,974	0.805	***	0.146	2,082
7 - End	0.030	**	0.014	32,872	-0.001		0.012	41,129

Table 11. Non-Incubated Fund Portfolios Alpha Analysis: Family Age (Part 2)

Panel C: Abnormal Performance of Old Family New Funds split by IPO holdings

	Old Family Non-IPO Fund			Old Family IPO Fund			
Month	Alpha (%)	S.E.(%)	N	Alpha (%)		S.E.(%)	N
1	0.044	0.117	481	0.658	***	0.235	351
2	0.094	0.121	481	0.412	*	0.212	351
3	0.043	0.119	481	0.461	**	0.199	351
4	-0.012	0.128	481	0.294		0.203	351
5	0.034	0.103	481	0.377	*	0.223	351
6	0.046	0.104	481	0.416	**	0.208	351
7	-0.091	0.106	481	-0.054		0.160	351
8	-0.020	0.100	481	0.080		0.189	351
9	-0.138	0.110	481	0.069		0.193	351
10	0.021	0.107	481	-0.301	*	0.175	351
11	-0.175 *	0.105	481	-0.351	*	0.192	351
12	-0.058	0.098	481	-0.075		0.207	351
1 - 6	0.051	0.046	2,886	0.453	***	0.082	2,106
7 - End	0.005	0.010	41,998	-0.009		0.013	35,112

Panel D. Regression of Portfolio Alphas on New-Fund Dummy (monthly). Sub-Group

	Young Family Fund		Old Family Fund		Difference	
New-Fund Dummy	0.488	***	0.210	***	-0.278	***
	(0.063)		(0.048)		(0.079)	
Constant	-0.007		0.002			
	(0.011)		(0.009)			
R-squared (%)	24.14		10.17			
N	189		169			

	Young Family Non-IPO	Young Family IPO		Difference
New-Fund Dummy	0.056	0.853	***	0.797
	(0.082)	(0.088)		(0.120)
Constant	-0.019	-0.001		
	(0.015)	(0.016)		
R-squared (%)	0.28	33.82		
N	169	187		

	Old Family Non-IPO	Old Family IPO		Difference	
New-Fund Dummy	0.045	0.430	***	0.385	***
	(0.056)	(0.070)		(0.089)	
Constant	-0.004	0.006			
	(0.011)	(0.013)			
R-squared (%)	0.45	19.08			
N	147	163			

Table 12. Investor Flow and IPO Allocation (Part 1)

This table presents the coefficients from regressions of fund's investor flows on performance and fund IPO characters. The dependent variable is the monthly net dollar flow to the fund, starting from month 2, ranked by year and month. Indicator variable IPO equals 1 if the fund holds IPO stock(s) within the 6 months after fund inception and 0 otherwise. Similarly, indicator variable Non-IPO equals 1 if the fund does not hold any IPO stock within the 6 months after fund inception and 0 otherwise. Further, IPO indicator variable is split into High IPO Profit (equals 1 if the fund's profit in holding IPO stocks in creation period is greater than median profit and 0 otherwise) and Low IPO Profit (equals 1 if the fund's profit in holding IPO stocks in creation period is less than median profit and 0 otherwise). Additionally, we split High/Low Profit IPO into High/Low IPO Continue/Non-Continue, based on if the fund continues to allocate IPO during month 7-18 (the following year after 6 months since inception). Control variables include fund size, measured the natural log of fund's total net assets (Log TNA), log of fund family's total net asset (Log Family TNA), fund age in year (Fund Age), the demeaned monthly fractional rank (between 0 and 1) of fund's expense ratio (Expense Ratio Rank), turnover ratio (Turnover Rank) and load (Fund Load Rank), one month lag of fund flow rank (Lag Fund Flow Rank) and fund's cumulative return since inception (Cumulative Total Return). The differences between indicator variables and Non-IPO dummy are reported. Monthly fixed effect are included in regressions and clustered standard errors are in parentheses. The significance levels are abbreviated with asterisks: *, ** and *** donate significance at the 10%, 5% and 1% levels, respectively.

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
IPO	0.11***					
	(0.009)					
Non-IPO	0.095***	0.095***	0.095***	-0.006	-0.002	-0.005
	(0.007)	(0.007)	(0.007)	(0.009)	(0.005)	(0.005)
High IPO Profit		0.137***				
		(0.0153)				
Low IPO Profit		0.10***				
		(0.010)				
High IPO Continue			0.145***	0.083***	0.034***	0.037***
			(0.016)	(0.019)	(0.01)	(0.01)
High IPO Non-Continue			0.042	0.026	0.008	0.014
			(0.047)	(0.052)	(0.031)	(0.03)
Low IPO Continue			0.103***	0.025**	0.014**	0.012*
			(0.011)	(0.012)	(0.006)	(0.006)
Low IPO Non-Continue			0.089***	0.026	0.018*	0.015
			(0.02)	(0.022)	(0.01)	(0.011)

Table 12. Investor Flow and IPO Allocation (Part 2)

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Log(Family TNA)				0.005***	0.002***	0.0036***
				(0.001)	(0.001)	(0.001)
Log(TNA)				0.007***	0.002**	0.000
				(0.002)	(0.001)	(0.001)
Fund Age				-0.027***	-0.011***	-0.014***
				(0.001)	(0.001)	(0.001)
Expense Ratio Rank				-0.076***	-0.038***	-0.043***
				(0.012)	(0.005)	(0.005)
Turnover Rank				-0.052***	-0.023***	-0.021***
				(0.01)	(0.004)	(0.004)
Fund Load Rank				-0.007	-0.003	-0.002
				(0.011)	(0.005)	(0.005)
Lag Fund Flow Rank					0.554***	0.549***
					(0.008)	(0.008)
Cumulative Total Return						0.045***
						(0.005)
Constant	0.405	0.405	0.405	0.546***	0.143*	0.152**
	(0.354)	(0.354)	(0.354)	(0.091)	(0.074)	(0.074)
Difference	0.016					
IPO vs. Non-IPO	(0.010)					
Difference		0.042***				
High IPO Profit vs. Non-IPO		(0.016)				
Difference		0.005				
Low IPO Profit vs. Non-IPO		(0.012)				
Difference			0.050***	0.089***	0.036***	0.043***
High IPO-Continue vs. Non-IPO			(0.017)	(0.020)	(0.011)	(0.011)
Difference			-0.053	0.032	0.010	0.019
High IPO Non-Continue vs. Non-IPO			(0.047)	(0.052)	(0.031)	(0.031)
Difference			0.008	0.031**	0.016**	0.017**
Low IPO-Continue vs. Non-IPO			(0.013)	(0.014)	(0.007)	(0.007)
Difference			-0.006	0.031	0.020*	0.020*
Low IPO Non-Continue vs. Non-IPO			(0.021)	(0.023)	(0.011)	(0.011)
Monthly Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
R-squared (%)	0.486	0.494	0.500	5.89	34.6	34.9
Observations	164962	164962	164962	122491	121733	121733
Number of Cluster	1568	1568	1568	1508	1507	1507