# Productivity Changes around Childbirth — Evidence from the Mutual Fund Industry

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**Abstract**

Societal expectations that new mothers may be less committed to their careers contribute to a persistent child penalty on women's labor market outcomes. Using novel data on fund managers' maternity leaves from 2008 to 2022, we show that the persistent child penalty in the mutual fund industry cannot be explained by sustained productivity changes. We document that women's productivity declines only temporarily around childbirth. In particular, funds of managers entering motherhood underperform by 2.3% to 2.8% p.a. during pregnancy and the first six months after returning from maternity leave. Our evidence suggests that childbirth-related distractions prevent female managers from devoting full attention to their work during this period. They reduce the number of corporate site visits and manage their portfolios less actively. Despite the transient nature of this productivity dip, which lasts until the initial six months after returning from maternity leave, children impose persistent penalties on women's careers in the mutual fund industry. We document a persistent decline in the participation rate of female managers after childbirth, and conditional on staying in the fund industry, new mothers face lower promotion prospects.

*JEL-Classification Codes*: J13, J16, G11, G23

*Keywords*: Mutual fund performance, child penalty, women's careers

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# 1 Introduction

Despite the grand gender convergence, women continue to experience different labor market outcomes than men (Goldin, 2014). Existing research has documented that the differential effects of children on the career trajectories of women relative to men play a significant role in the persistence of gender inequality in the labor market (Kleven, Landais, and Søgaard, 2019). In particular, parenthood imposes a substantial and persistent child penalty on wages, hours worked, and participation rates of women, while men do not experience comparable effects (Kleven, Landais, and Søgaard, 2019, Kleven, Landais, Posch, Steinhauer, and Zweimüller, 2019). Societal expectations that new mothers may be less committed to their careers contribute to this gender gap (Correll, Benard, and Paik, 2007, Heilman and Okimoto, 2008, He, Li, and Han, 2023).

Using novel data covering Chinese fund managers' maternity leaves from 2008 to 2022, we examine whether the persistent effects of motherhood on women's careers can be explained by a sustained productivity decline due to childbirth. In China, mutual fund companies are required to report and disclose fund management changes. Specifically, they need to inform the China Securities Regulatory Commission and disclose relevant information about when and why a manager leaves if the leave length exceeds thirty days.[2] This allows us to determine the day on which female fund managers enter maternity leave, infer the approximate time of when they became pregnant, and observe their career trajectories after they return from maternity leave. In addition, the mutual fund setting allows us to precisely measure productivity changes during the time of childbirth, as daily fund returns can be used for a timely and accurate performance evaluation of a fund manger.

We adopt a quasi-experimental approach surrounding childbirth and document that female managers' performance declines only temporarily during this period. Our univariate results based on single-managed funds show that during pregnancy, performance of female fund managers decreases by about 1.8% to 2.9% p.a., respectively, depending on whether raw returns or risk-adjusted returns are examined. In the first six months after returning from maternity leave, fund perfor-

[2] According to the Announcement of the China Securities Regulatory Commission (CSRC) 2009 No.3 it is compulsory for a fund to release a report to the CSRC and release the information to the public if a fund manager takes a leave that is longer than 30 days. The same requirement applies if the managing role is taken by another manager. There is no clear guidance concerning the return of managers from temporary leaves, but for 93% of our observations, the fund company reports whether the manager returns or decides to leave the company.

mance of female fund managers is about 2.1% to 3.8% lower p.a. For the period between six and thirty-six months after returning from maternity leave, performance rebounds to pre-pregnany levels.

In the next step, we run multivariate panel regressions on performance of managers who enter motherhood, controlling for fund and manager characteristics, as well as fund, manager, and month fixed effects. We still find a significant deterioration in fund performance during pregnancy and in the first six months after returning to work, ranging between 2.8% and 4.4% p.a. The results also obtain when estimating the effect of childbirth on performance relative to managers without children.

One concern is that our findings may be driven by endogenous timing of pregnancy. For example, female fund managers might time their motherhood to coincide with business cycle downturns to reduce the opportunity cost of having children. Furthermore, our findings could be driven by other unobservable systematic differences between managers who become mothers and managers without a childbirth event. To address any such concerns, we use a matching approach to select a plausible counterfactual of how performance would have evolved absent childbirth. In a matched-sample difference-in-differences setting surrounding childbirth, we find that on average, female fund managers entering motherhood underperform their matched peers by 2.3% to 2.8% p.a. For the period between six to thirty-six months after returning from maternity leave, we find no performance differences between fund managers with and without children. Results also hold in a specification with manager fixed effects, i.e., comparing the performance of the same manager before and after pregnancy and childbirth. In summary, our conservative matched sample results further strengthen the notion that managers who become mothers are only temporarily impaired from devoting full attention to work, as their performance rebounds in the medium term after returning from maternity leave.

Our results are consistent with the view that childbirth-related distractions, i.e., the psychological and physiological consequences of pregnancy, delivery, and breastfeeding, only temporarily prevent female managers from devoting full attention to their work. The negative impact of entering motherhood on fund performance is strongest for busy managers who manage a larger number of funds simultaneously. These managers, once pregnant, pursue a less active portfolio

management strategy, and make fewer corporate site visits to their portfolio companies, the latter of which have been shown to be a predictor of superior fund performance (Cheng, Du, Wang, and Wang, 2018).

Despite the transitory nature of the childbirth-related productivity decline, children impose large and persistent penalties on the career trajectories of female managers in the mutual fund industry. In particular, we document a persistent decline in the mutual fund industry participation rate of female managers after childbirth. Moreover, we find that new mothers face lower promotion prospects conditional on staying in the fund industry. These effects extend beyond the year of childbirth and persist over the three to six subsequent years. While we cannot distinguish between supply and demand explanations, we can shed light on whether the persistent child penalty on female fund managers' career trajectories can be explained by sustained differences in performance. Our findings challenge the notion that children limit the career advancement of new mothers due to persistent performance declines. Only six months post-childbirth, new mothers' performance aligns with that of other fund managers again.

Our paper contributes to different strands of literature. First, we relate to the extensive body of literature examining the impact of parenthood on women's labor market outcomes in general and career trajectories in particular. A substantial body of research has documented that having children imposes large and persistent penalties on women's careers across various countries and different time periods (Kleven, Landais, Posch, Steinhauer, and Zweimüller, 2019, Kleven, Landais, and Søgaard, 2019, Kleven, Landais, and Leite-Mariante, 2023). Such child penalties are not borne by men to the same extent, and existing research suggests a causal relationship with childbearing (Lundborg, Plug, and Rasmussen, 2017). However, the mechanisms through which parenthood disproportionately affects women's careers are less well understood. Kleven, Landais, and Søgaard (2021) estimate child penalties in biological and adoptive families and conclude that biology is not a key driver of the differential effect of childbirth on men and women. Lundborg, Plug, and Rasmussen (2017) document that upon parenthood, women reconsider their job choices more frequently than men, and self-select in lower-paid jobs that are closer to home. Andrade, González, and Pifarré Arolas (2021) show that employers disproportionately lay off new mothers after maternity leave, suggesting that part of the child penalty is also driven by demand-side factors. We

contribute to this literature by examining whether the adverse effects on women's careers can be explained by sustained productivity changes due to childbirth. To our knowledge, we are the first to precisely document childbirth-related productivity changes, exploiting the high-frequency availability of individual performance measures in the mutual fund setting, and Chinese regulation mandating fund companies to document maternity leaves.

Second, we contribute to the literature on the negative psychological and physiological effects associated with pregnancy and childbirth. Shorey, Chee, Ng, Chan, San Tam, and Chong (2018) document that women are likely to suffer from depression during and immediately after pregnancy. In addition, childbirth may have a greater negative impact on the mental health of mothers than fathers (Ahammer, Glogowsky, Halla, and Hener, 2023). The underlying reason is that women are often the primary caregivers, which is typically associated with cognitive load and mental stress. Similarly, Jiang and Yang (2022) document for the Chinese labor market that fertility has significant negative effects on the physical and mental health of women of childbearing age. As active portfolio management requires a high level of manager attention, any distractions associated with childbirth, such as pregnancy, delivery, and breastfeeding, as well as child-rearing duties are likely to be reflected in fund performance.

Finally, our results contribute to the literature on gender imbalances in the financial sector in general and the mutual fund sector in particular. Women are underrepresented in academic finance (Sherman and Tookes, 2022), corporate boardrooms (Niessen-Ruenzi and Zimmerer, 2021), hedge fund portfolio management (Aggarwal and Boyson, 2016), and the mutual fund industry (Niessen-Ruenzi and Ruenzi, 2019). Our paper provides an additional explanation for the persistent gender imbalance in the mutual fund market. Despite the temporary nature of the childbirth-related productivity decline, our results suggest that having children has a persistent negative impact on women's careers. This suggests that parenthood may be an obstacle to a successful career in mutual fund management.

Investigating why and how parenthood affects the productivity of working mothers sheds light on the sources of remaining gender inequalities in the labor market in general, and the mutual fund industry in particular. Although the temporary productivity decline surrounding childbirth rebounds six months after return to work, our results reveal a persistent reduction in participation

and promotion rates for new mothers over the mid to long term. This phenomenon may arise from new mothers either not actively seeking employment and promotions or fund companies hesitating to employ and promote them due to concerns that new mothers may be less committed to their careers. Our results should mitigate potential concerns of employers that child rearing leads to persistent career distractions of women. Six months after returning from maternity leave, new mothers do not perform differently from other fund managers anymore.

## 2 Institutional Background

The national Chinese maternity leave policy guarantees a minimum of 98 days of paid maternity leave for female employees. It has been in place since 1951 when the length of maternity leave was originally set at 56 days, extended to 90 days in 1988, and to 98 days in 2012. Fertility rates in China have been strictly controlled by the country's one-child policy. Initially introduced in late 1979, the policy experienced only modest adjustments over the following decades. However, faced with a rapidly aging population and low birth rates, the Chinese government introduced a number of policies to encourage fertility in recent years. After some relaxations in 2013[3], the one-child policy was replaced by a two-child policy in 2016 and eventually transformed into a three-child policy in 2021.

These new policies also included further extensions of paid maternity leave at the province level. Figure 1 illustrates the evolution of maternity leave days across provinces in China over time. Most provinces introduced additional maternity leave days around 2016, coinciding with the Chinese government's relaxation of birth control policies. Initially, the additional maternity leave was typically 30 days in most provinces. From 2021 on, many provinces further extended the additional maternity leave to a range of 60 to 90 days. For example, women in Shanghai and Beijing are currently entitled to a total of 158 days of paid maternity leave, while Guangdong grants a total of 178 days of paid maternity leave. Maternity protection usually starts 15 days before the expected date of birth.[4]

[3] In November 2013, a new policy allowed couples to have two children if at least one parent had no siblings.

[4] Unlike maternity leave entitlements, which have increased significantly over time, paternity leave entitlements have improved only modestly. Before 2012, fathers were entitled to just three days of paid leave, which has since been extended to a leave of 10 to 25 days.

Similar to other countries, Meng, Zhang, and Zou (2023) document substantial labor market penalties for Chinese mothers, with large declines in labor force participation, hours worked and earnings in the year of childbirth. Notably, the labor market outcomes of mothers in China recover to pre-motherhood levels more quickly than in countries such as the US, UK, Austria, Denmark, Sweden, and Germany where the motherhood penalty is more persistent (Kleven, Landais, Posch, Steinhauer, and Zweimüller, 2019, Kleven, Landais, and Leite-Mariante, 2023). While Chinese women experience a motherhood penalty in the year of childbirth, the negative effect recovers to pre-motherhood levels within five years after giving birth (Meng, Zhang, and Zou, 2023, Kleven, Landais, and Leite-Mariante, 2023). Notably, child penalties tend to be higher for women living in urban areas rather than in rural areas (Kleven, Landais, and Leite-Mariante, 2023). This pattern has also been confirmed when comparing Beijing to China as a whole (Kleven, Landais, and Leite-Mariante, 2023).

The comparatively rapid recovery of the motherhood penalty in China can be mainly attributed to two institutional characteristics. First, multi-generational co-residence is very common in China and the active role of grandparents in childcare is deeply rooted in China's traditional family values and norms (e.g., Rosenzweig and Zhang, 2014). Meng, Zhang, and Zou (2023) show that young mothers receive substantial help from grandmothers, who reduce their labor market supply to take care of their grandchildren. Second, the public sector historically provided flexible working arrangements for mothers (Zhang, Han, Liu, and Zhao, 2008, Meng, Zhang, and Zou, 2023).

The Chinese mutual fund industry serves as a well-suited laboratory for investigating the impact of pregnancy and childbirth on women's productivity and career trajectories for several reasons. First, the *Guidance on the Management of Fund Management Firms' Managers (No.3 Announcement)*, released by the China Securities Regulatory Commission (CSRC) on March $17^{th}$, 2009, and implemented on April $1^{st}$, 2009, mandates mutual fund companies to publicly disclose when a fund manager is absent from the fund for more than 30 days. This requirement encompasses maternity leaves, as such leaves generally extend beyond 30 days. Second, active portfolio management requires a high level of managerial attention since stock prices move quickly and a large number of portfolio firms needs to be monitored regularly. Therefore, any psychological and

physical distractions associated with childbirth are likely to be reflected in inferior fund performance. Third, the mutual fund industry provides us with daily information on fund returns, such that managers' productivity changes surrounding childbirth events can be measured at a high frequency. Fourth, unlike the US mutual fund industry, where team management is more prevalent, Chinese mutual funds are largely managed by individual managers. As we are interested in attributing fund performance directly to a specific individual, Chinese mutual fund data serve our purpose well. Finally, China's mutual fund industry has grown rapidly over the past three decades and is becoming increasingly important. By the end of 2022, China had 10,491 mutual funds with total net assets under management reaching 25.7 trillion Chinese Yuan (3.8 trillion USD). This provides us with a sufficiently large number of pregnancies and maternity leaves for statistical analysis.

# 3 Data and Descriptive Statistics

Before conducting our main analyses, we provide a detailed overview of the Chinese mutual fund market. We document fund and manager characteristics, female representation, and maternity leave events in the Chinese mutual fund industry. We also introduce our fund performance measures.

## 3.1 Fund and manager characteristics

Our primary data source is the RESSET Mutual Fund database, which is a survivor-bias-free database for Chinese open-ended mutual funds. The database provides information on daily returns and quarterly total net assets, as well as fund characteristics such as fund type, investment style, fund age, and fees. Furthermore, we obtain data on fund management structures and individual fund managers, including their name, gender, age, career path within the fund industry, and educational background. All variables are described in detail in Appendix Table A1.

Our study covers the time period from January 2008 to December 2022. We choose January 2008 as the starting point, as we observe the first maternity leave in December 2011 and we include a

pre-treatment-period of 36 months in our analyses.[5] We focus on actively-managed equity, bond, and hybrid funds and exclude money market funds and index funds. This ensures that the fund managers we observe take an active part in determining fund performance. Moreover, we concentrate on single-managed funds and exclude all team-managed funds, i.e., funds for which the RESSET database gives multiple manager names, from most of our analysis. Including management teams would be problematic as team outcomes are influenced by several managers. Looking at single-managed funds only allows us to assign fund performance to a specific fund manger.

In our sample, the number of single-managed funds rises from 226 in the year 2008 to approximately 5600 in the year 2022. This increase reflects the tremendous expansion of the Chinese mutual fund market over the past years. With the first open-ended fund emerging in 2001, China's mutual fund industry is relatively young, but has grown considerably since its inception. Across the entire sample period, single-managed funds comprise around 62.5% of the mutual fund industry in China, i.e., Chinese mutual funds are largely managed by single managers. This contrasts with the US, where team management has become the dominant management structure in the mutual fund industry (Adams, Nishikawa, and Rao, 2018, Patel and Sarkissian, 2017).

### 3.2 Female representation in the Chinese mutual fund industry

Our sample includes 344,230 fund-month observations, of which 74,357 (21.6%) have a female manager and 269,873 (78.4%) have a male manager. Figure 2, Panel A presents the total number of (female-managed) funds (lines) and the share of female-managed funds (bars) over our sample period.

In total, we observe 7,438 funds over the years 2008 to 2022. During this period, the number of female-managed funds increases from 20 to 1,296, reflecting the growth of the Chinese mutual fund market. However, the share of female-managed funds remains low, ranging between just 8.8% in 2008 and around 23.2% in 2022. Notably, the increase in the relative representation of female-managed funds primarily occurred between the years 2008 to 2017, with the proportion of female-managed funds remaining stable since then.

[5] While disclosure rules regarding maternity leaves came into effect on April $1^{st}$ 2009, the first maternity leave in our data is observed in 2011, presumably because the number of female fund managers is small at the beginning of our sample (58 female managers in 2008, 65 in 2009, and 93 in 2010).

Turning to the manager level, Panel B plots the total number of (female) managers (lines) and the share of female managers (bars). The absolute number of female managers rises from just 26 in 2008 to 595 in 2022, and the fraction of female managers rises from 9.9% in 2008 to 26.1% in 2022. Over the entire sample period, our sample comprises 3,896 unique managers of single-managed funds: 3,038 (78%) of them are male, and 858 (22%) of them are female. The representation of women is slightly higher at the manager level than at the fund level because male managers are more likely to manage multiple single-managed funds at the same time than female managers.

Overall, Figure 2 illustrates that women, who make up around 49% of China's population in 2022 (World Bank, 2022), are significantly underrepresented in China's mutual fund industry. Despite some progress over time, the relative representation of women remains low and has stagnated in recent years. The picture is similar to that documented in the US mutual fund industry. Niessen-Ruenzi and Ruenzi (2019) report that the proportion of equity funds managed by women was around 10% for the years 1992 to 2009.

In Table 1, Panel A, we report descriptive statistics for fund and manager characteristics in the sample used for our baseline panel regressions, respectively. Panel B presents differences in means between female- and male-managed funds. The last column reports the *t*-statistic of the difference-in-means test with standard errors clustered by fund. The univariate comparison between female- and male-managed funds in Panel B reveals that female-managed funds do not differ in size, but the average age is slightly lower than that of male-managed funds. In addition, female-managed funds show slightly worse performance in terms of raw and abnormal returns and lower (idiosyncratic) risk. We also observe that female-managed funds receive significantly higher money inflows than male-managed funds, which contrasts findings for the US in Niessen-Ruenzi and Ruenzi (2019).

Female managers tend to manage different types of funds than male managers. Specifically, female managers are significantly more likely to manage bond funds and less likely to manage equity and hybrid funds. Thus, differences in flows, returns, and risk can partly be attributed to the gender disparities in the types of funds managed, as shown in Appendix Table A2, which mandates to include fund type fixed effects in all regressions. In addition, female fund managers are of similar age and have a similar tenure with a particular fund as their male colleagues. However,

they are significantly less likely to hold a PhD and, in turn, more likely to hold a master's degree only.

We account for the differences between male and female fund managers in several ways in our analyses. First, we saturate our panel regressions with fund and manager controls as well as fund and manager fixed effects. Fund fixed effects account for time-invariant heterogeneity between fund types and between different funds, while manager fixed effects control for unobserved constant manager characteristics. Note that our analyses do not compare female versus male managers of single-managed funds. Instead, we compare female managers who become mothers during our sample period with managers who do not become a parent. Second, we employ a difference-in-differences analysis in which we match funds with a maternity event with control funds based on manager and fund characteristics. The exact matching procedure is presented in Section 4.3. Panel C of Table 1 reports means and differences in fund and manager characteristics for our treatment versus matched control groups in the 36-month pre-treatment period. We observe 11,120 fund-month observations for the matched sample, of which 3,628 fund-month observations belong to the treatment group and 7,492 fund-month observations belong to the control group. There are no major differences in fund and manager characteristics between the treatment and the control groups pre-treatment.

### 3.3 Maternity leave events

The RESSET Mutual Fund database allows us to track the career paths of individual managers over time. If a manager permanently or temporarily leaves a fund, the database records the leave date, the reason for leave, the replacement manager(s), and, in certain cases, the expected return date or length of leave, as well as the actual return date (if applicable). Maternity leaves are typically categorized as temporary leaves, even if the manager ultimately decides not to return. Therefore, we search the reports for phrases such as "temporary leave", "stop temporarily", "leave temporarily", or "temporarily replacing" to specifically identify temporary leaves. In total, we identify 974 distinct fund events classified as temporary leaves. To identify maternity leave events, we manually examine the reports to determine if they mention the term "maternity leave". This manual check

allows us to identify 833 maternity leave events.[6] After restricting maternity leaves to managers in charge of single-managed bond, equity, and hybrid funds, we are left with 200 unique fund-level maternity leaves.

In Figure 3, Panel A, we present the distribution of the total number of maternity leaves at the fund level (line) as well as the share of female funds with a maternity leave (bars) over time. In our sample, the first maternity leave takes place in the year 2011. From 2016 onward, we observe a pronounced and persistent increase in the number of maternity leaves, coinciding with the end of the Chinese one-child policy. However, due to the continuously growing absolute number of female-managed funds, the relative proportion of maternity leaves remains low, averaging at $3.4\%$. Turning to the manager level, Panel B illustrates the distribution of the total number (line) and share (bars) of female managers on maternity leave over time. Resembling Panel A, the number of managers on maternity leave sharply increases from 2016 onwards, while the relative share remains at a relatively low level of $3.5\%$, on average. Overall, we observe 102 unique managers who go on maternity leave during our sample period. The overall number of managers on maternity leave is lower than the number of maternity leaves at the fund level, as some managers who go on maternity leave are responsible for single-managed funds simultaneously.

In China, the maternity protection period typically starts around 15 days before the due date. Consequently, we estimate the approximate pregnancy date by considering the starting date of managers' leaves due to childbirth. We observe the date of return from maternity leave for 162 out of the 200 maternity leaves. In 8 cases, the manager permanently leaves the fund within one year after going on maternity leave. 15 maternity leaves in our sample occur in mid to end of 2022 so that the return date is not observable in our sample. For the remaining 15 cases, no return date is reported. The average leave length in our sample is 155 days.

### 3.4 Productivity measures

We measure fund performance using raw monthly returns, as well as raw abnormal returns. Barber, Huang, and Odean (2016) document that investors pay most attention to market risk when evaluating funds. Moreover, Dickerson, Mueller, and Robotti (2023) demonstrate that the bond

[6]The remaining events are either sick leaves or cases where we cannot determine the reason for the leave. To ensure a precise analysis, we only include events that we can identify as maternity leaves without any doubt.

CAPM is not dominated by either traded- or nontraded-factor models. As our sample includes equity, hybrid and bond funds, we use a combined factor model that includes an equity market factor and a bond market factor. The market factor is the value-weighted excess return of stocks listed in mainland China, and the information is taken from the RESSET Stock database. The bond factor is taken from WIND, a leading commercial financial information provider in China, and is the daily return of the ChinaBond Composite Index Full Price Index. For each fund $f$, manager $m$, and trading day $d$, we estimate rolling-window regressions of the form

$$R_{fms} = \alpha_{fm} + \beta_{fme} F_{se} + \beta_{fmb} F_{sb} + \varepsilon_{fms} \tag{1}$$

using daily returns of the past 12 months ($-365 \leq s \leq d-1$). $F_{se}$ and $F_{sb}$ denote the stock market and bond market factors, respectively. Then, we use the factor loadings, $\hat{\beta}_{fme}$ and $\hat{\beta}_{fmb}$, factor realizations, $F_{de}$ and $F_{db}$, and the excess return of day $d$, $R_{fmd}$, to compute the abnormal return on day $d$,

$$AR_{fmd} = R_{fmd} - \hat{\beta}_{fme} F_{de} - \hat{\beta}_{fmb} F_{db}. \tag{2}$$

Finally, we aggregate daily abnormal returns at a monthly frequency.

## 4 Productivity Changes around Childbirth

To estimate the impact of motherhood on the performance of female mutual fund managers, we adopt a quasi-experimental approach based on event studies around childbirth. In particular, we observe managers who become mothers during three different time periods. The *Before* period refers to the 36 months prior to pregnancy. The *Pregnancy* ($0 \leq t_P < 9$) period refers to the months from becoming pregnant to the beginning of managers' maternity leave, and lasts about 9 months. *Post Maternity Leave* refers to the 36 months after returning from maternity leave. Figure 4 illustrates our empirical setting.

We are interested in productivity changes during the 9-month *Pregnancy* period because potential pregnancy-related distractions, such as regular check-ups, and common physical symptoms of pregnancy, such as fatigue and sleep disturbances, may temporarily prevent managers from

focusing on their work responsibilities (Warren and Brewis, 2004, Jarvis and Nelson-Piercy, 2014). Pregnant managers' effective working hours may also be reduced compared to pre-pregnancy levels due to legal prohibitions on overtime or night work during late pregnancy[7]. In addition, medical research documents that some pregnant women suffer from psychological problems in and immediately after pregnancy (Shorey, Chee, Ng, Chan, San Tam, and Chong, 2018).

Our choice of the length of the *Post Maternity Leave* period (and the symmetric *Before* period) is guided by the fact that most childcare centers in China do not accept children under the age of three. Instead, public kindergartens or preschools are designed for children between the ages of three and six (Wang, Zhang, Yu, Hu, and Yang, 2021). Consequently, childcare responsibilities are likely to be highest in the first three years after birth. Guryan, Hurst, and Kearney (2008) document that mothers generally take on significantly more childcare responsibilities than fathers. In line with this view, Ahammer, Glogowsky, Halla, and Hener (2023) document that childbirth has a much greater negative impact on the mental health of mothers than fathers, as being the primary caregivers is typically associated with cognitive load and mental stress. Similarly, Jiang and Yang (2022) document for the Chinese labor market that fertility has significant negative effects on the physical and mental health of women of childbearing age. Our setting ensures that the *Post Maternity Leave* period effectively captures the potential changes in performance induced by heightened childcare responsibilities for mothers after giving birth.

To allow for a more in-depth analysis and to account for differential effects during the *Post Maternity Leave* period, we therefore examine three sub-periods: *Post Maternity Leave* ($0 < t_{PM} \leq 6$), *Post Maternity Leave* ($6 < t_{PM} \leq 12$) *Post Maternity Leave* ($12 < t_{PM} \leq 36$). We decide to split the *Post Maternity Leave* period at 6 and 12 months for the following rationale: Breastfeeding mothers in China are entitled to lactation breaks until their child reaches the age of one[8]. These breaks could affect the productivity of working mothers by reducing effective working hours and distracting from work responsibilities. The Chinese government promotes the World Health Organization's recommendation of exclusive breastfeeding for the first six months of an infant's life among Chinese mothers (China State Council, 2015, 2021). China is one of the largest consumers of infant

[7]The Labor Law of the People's Republic of China prohibits overtime and night work for employees after seventh month of pregnancy.

[8]Since 1988, female employees in China have been entitled to two half-hour breaks per day to breastfeed their children under the age of one when they return to work.

formula, so the rates and duration of (exclusive) breastfeeding are relatively low, and the majority of women (exclusively) breastfeed their infants for (six) twelve months after giving birth (Yang, Lai, Yu, Duan, Pang, Jiang, Bi, Wang, Zhao, and Yin, 2016). Therefore, we conjecture that the first six to twelve months after returning from maternity leave are likely to capture the distractions induced by breastfeeding and lactation breaks, depending on the length of maternity leave taken by the mother.

### 4.1 Univariate analysis

To gauge to what extent childbirth-related efforts prevent managers from devoting full attention to work responsibilities, we first document differences in average monthly raw returns and average monthly abnormal returns between the aforementioned periods in event time. That is, we compare the average monthly (abnormal) returns over the three different event periods for our treatment sample.

Table 2 shows the results. For the 36 months prior to pregnancy, the average monthly raw return is 0.6%, which is close to the figure reported for the entire sample period in Table 1. The average monthly abnormal return is 0.4%. Notably, we find a decrease in all performance measures for the *Pregnancy* ($0 \leq t_P < 9$) period and the first six months after returning from maternity leave, i.e., *Post Maternity Leave* ($0 < t_{PM} \leq 6$). During the pregnancy period, performance decreases on average by about 1.8% to 2.9% p.a., depending on whether raw returns or risk-adjusted returns are examined.. For the first six months after returning from maternity leave, performance decreases by about 2.1% to 3.8% lower p.a. compared to the pre-pregnancy period. Columns (6) and (7) show that these differences are mostly statistically significant at the 10% level. However, as shown in columns (8) and (9), performance returns to pre-pregnancy levels six to 36 months after returning from maternity leave. The differences in average monthly (abnormal) returns between *Post Maternity Leave* ($6 < t_{PM} \leq 12$) and *Post Maternity Leave* ($12 < t_{PM} \leq 36$) and the *Before* period are positive and in some cases statistically significant.

Overall, our descriptive evidence suggests that female managers' productivity is impaired during pregnancy and the first six months after returning from maternity leave. However, the productivity drop is only temporary and (abnormal) returns rebound to pre-pregnancy levels in the

medium to long term.

Of course, these descriptive findings can be driven by other factors influencing mutual fund returns. For instance, fund managers may time their motherhood to coincide with business cycle downturns so that the opportunity cost of having children is lower. In this case, underperformance during pregnancy and in the first six months after returning from maternity leave relative to the pre-pregnancy period could be due to worsening market conditions rather than to childbirth. To address such concerns, we perform multivariate panel regressions saturated with fixed effects in the following section.

### 4.2 Multivariate panel regressions

We estimate the following multivariate regression for each fund $f$, manager $m$, and month $t$:

$$
\begin{aligned}
Performance_{fmt} = \; & \beta_0 + \beta_1 \textit{ Pregnancy } (0 \leq t_P < 9) + \beta_2 \textit{ Post Maternity Leave } (0 < t_{PM} \leq 6) \\
& + \beta_3 \textit{ Post Maternity Leave } (6 < t_{PM} \leq 12) + \beta_4 \textit{ Post Maternity Leave } (12 < t_{PM} \leq 36) \\
& + \beta_5 \, X_{fmt} + \Phi_{fmt} + \varepsilon_{fmt},
\end{aligned} \tag{3}
$$

where $Performance_{fmt}$ denotes raw monthly returns or monthly abnormal returns, *Pregnancy* $(0 \leq t_P < 9)$ refers to the months from becoming pregnant to the start of maternity leave, *Post Maternity Leave* $(0 < t_{PM} \leq 6)$, *Post Maternity Leave* $(6 < t_{PM} \leq 12)$, and *Post Maternity Leave* $(12 < t_{PM} \leq 36)$ are indicators for the sub-periods after returning from maternity leave, $X_{fmt}$ are fund and manager controls such as fund size, fund age, fund type, manager education, and manager age, while $\Phi_{fmt}$ denotes various sets of fixed effects such as month fixed effects, fund fixed effects, and manager fixed effects. The benefit of this specification is that the coefficient estimates are estimated specifically for treated funds. Hence, it amounts to a before-after comparison for the set of funds affected by childbirth, controlling for several potential confounds.

In addition, we estimate Equation (3) on the full fund sample using the following modified

regression specification:

$$
\begin{aligned}
Performance_{fmt} = \; & \beta_0 + \beta_1 \textit{ Pregnancy } (0 \leq t_P < 9) + \beta_2 \textit{ Post Maternity Leave } (0 < t_{PM} \leq 6) \\
& + \beta_3 \textit{ Post Maternity Leave } (6 < t_{PM} \leq 12) + \beta_4 \textit{ Post Maternity Leave } (12 < t_{PM} \leq 36) \\
& + \beta_5 \textit{ Treated} + \beta_6 \, X_{fmt} + \Phi_{fmt} + \varepsilon_{fmt},
\end{aligned} \tag{4}
$$

where *Treated* is an indicator variable that takes a value of one if the fund manager becomes a mother at some point during the entire sample period. The advantage of (4) is that we estimate the effect of motherhood relative to a set of untreated funds and with more precision.

Table 3 presents our first set of results. Panel A shows results for the group of treated funds. In columns (1) to (3), we employ raw monthly returns as the dependent variable. In columns (4) to (6), we use monthly abnormal returns as the dependent variable. All specifications include controls for various fund and manager characteristics, as well as month fixed effects to capture time trends. In our more restrictive specifications, we saturate the model with fund fixed effects and manager fixed effects, respectively. Fund fixed effects account for time-invariant heterogeneity across fund types and individual funds, while manager fixed effects control for unobserved constant manager characteristics.

Our results suggest that the ability of female managers to generate (abnormal) returns is constrained during pregnancy, as captured by the negative coefficient estimates on *Pregnancy* $(0 \leq t_P < 9)$. Notably, the more restrictive model specifications lead to larger coefficient estimates in terms of magnitude. In particular, they indicate that pregnancy reduces a manager's monthly (abnormal) return by between 0.2% and 0.4%, on average, relative to pre-pregnancy levels. Considering the entire event period of nine months, managers experience an average performance decrease of between 2.1% and 3.2% during pregnancy. The results are in line with the view that pregnancy-related distractions impair managers' ability to focus on work responsibilities.

Consistent with the view that the time and effort costs associated with childrearing are highest for very young children, we also find that female managers' performance in the first six months after returning from maternity leave is impaired relative to their pre-pregnancy performance. In our most stringent specifications, the coefficient estimate on *Post Maternity Leave* $(0 < t_{PM} \leq$

6) ranges from -0.2% to -0.4%. This means that the ability of female fund managers to generate (abnormal) returns is reduced by 1.3% to 2.3% during the first six months after returning from maternity leave.

With an average monthly raw (abnormal) return of 0.6% (0.4%), the effect sizes are also economically meaningful. In annualized terms, we find a significant deterioration in fund performance during pregnancy and in the first six months after returning to work, ranging between 2.8% and 4.4%[9] p.a. In addition, the estimated coefficients are mostly statistically significant at conventional levels. Overall, the results indicate that fund managers are falling behind their pre-pregnancy performance during pregancy and in the first six months after returning from maternity leave. It is important to note that the decline in (abnormal) returns measures the relative performance of fund managers with respect to their own expected return, given their past return history. Hence, it can be interpreted as the monetary measure of the change in productivity when entering motherhood. These changes can be negative even if the actual performance is positive.

Notably, becoming a mother does not prevent managers from performing well at work in the medium and long term. After six months from returning to work, managers performance rebounds to pre-pregnancy levels. The coefficient estimates on *Post Maternity Leave* $(6 < t_{PM} \leq 12)$ and *Post Maternity Leave* $(12 < t_{PM} \leq 36)$ are mostly positive but statistically insignificant. These results are in line with the view that childbirth-related efforts only hinder women from devoting full attention to work responsibilities when alternative childcare arrangements, such as grandparents, cannot yet effectively take over childrearing duties.

The controls for fund size and fund age are positively correlated with returns and abnormal returns. This finding may be due to the tremendous growth of the Chinese mutual fund market over the past few decades. In contrast to the US mutual fund market, the Chinese market may not yet have reached the point of diminishing returns to scale. However, the coefficient estimates are relatively small, indicating a modest effect only. We also find that equity and hybrid funds have higher returns than bond funds. Manager age and education do not seem to play a major role in determining fund returns, as the coefficient estimates are insignificant and negligible in magnitude.

[9]The compound returns for the fifteen months are calculated based on Table 3 Panel A columns (3), $((1-0.00364)^9 \times (1-0.00388)^6)^{12/15} - 1$, and (6), $((1-0.00234)^9 \times (1-0.00221)^6)^{12/15} - 1$.

Panel B reports the results when we estimate Equation (4) on the full sample of single-managed funds. Overall, the results confirm the patterns presented in Panel A. The coefficient estimates on *Pregnancy* $(0 \leq t_P < 9)$ and *Post Maternity Leave* $(0 < t_{PM} \leq 6)$ are negative and similar in terms of magnitude and statistical significance. Compared to their peers, funds of managers entering motherhood underperform by 2.3% to 2.7% p.a. In the later months of the *Post Maternity Leave* period, performance rebounds to pre-pregnancy levels. The relatively small but positive coefficient estimates on *Treated* make a selection of poorly performing managers into pregnancy unlikely. Women who become mothers during our sample period even tend to slightly outperform their peers pre-pregnancy.

As a robustness check, we also estimate Equations (3) and (4) separately for the pregnancy and post-maternity leave periods. As shown in Appendix Tables A3 and A4, the results remain qualitatively and quantitatively unchanged. In addition, in Appendix Table A5 we show that our results also hold if we calculate performance based on multifactor models.

### 4.3 Difference-in-differences analysis

To test for robustness, we present a difference-in-differences extension of our event study approach, where the effect of childbirth is estimated relative to a set of matched control funds. While the multivariate regression results reported in Table 3 control for several confounds, it might still be that systematic differences between treated and untreated funds drive the results. To address such concerns, we use a matching approach to select a plausible counterfactual of how performance would have evolved absent childbirth.

Specifically, for each fund in the treatment group, we identify two control funds that are as similar as possible to the treated fund ex ante. To construct the matched control group, we use several matching criteria. First, among the pool of single-managed funds, we require the control fund to be of the same fund type as the treated fund. Second, out of the remaining candidates, we select the two nearest neighbors based on fund performance in the 36 months before pregnancy and fund size. The two nearest neighbors are the funds with the lowest Mahalanobis distance to the treated fund across these matching characteristics. We match with replacement; i.e., we allow for a control fund to be matched to more than one treated fund. This matching procedure

is designed to ensure that control funds are highly similar to treated funds before treatment. In particular, using fund performance in the 36 months before pregnancy as a matching characteristic ensures that treated and control funds have similar performance in the year before pregnancy.

The final matched sample contains 11,120 fund-month observations. 3,628 fund-month observations belong to the treatment group and 7,492 belong to the control funds. To illustrate the similarity between treatment and control funds, Panel C of Table 1 reports means and differences in various fund and manager characteristics for our treatment and matched control groups in the pre-treatment period. The last column reports the *t*-statistic of the difference-in-means test with standard errors clustered at the fund level. It is evident that there are no major differences in fund and manager characteristics between the treatment and the control group pre-treatment. We conclude that our control group closely matches treated funds on all relevant criteria and is therefore likely to provide a reliable counterfactual of how treated funds would have evolved in the absence of childbirth.

The identifying assumption is that treated funds, in the absence of a childbirth event, would have evolved similarly to the set of untreated funds. As observing the treatment group absent treatment in the post-treatment period is not possible, we evaluate whether treated and control funds share parallel trends before the treatment, i.e., whether they do not differ in their (abnormal) returns prior to pregnancy. The summary statistics presented in Table 1, Panel C, support this notion. To bolster the evidence supporting the parallel trends assumption, we present evidence that (abnormal) returns are not statistically different between treated and control funds over the six half-year pre-event windows in Table 4. There are no statistically significant differences between treatment and control funds in any of the sub-periods and for any of the performance measures.

Next, we run the following difference-in-differences regressions on the matched sample:

$$
\begin{aligned}
Performance_{fmt} = \beta_0 &+ \beta_1 \textit{ Pregnancy } (0 \leq t_P < 9) \times \textit{Treated} + \beta_2 \textit{ Post Maternity Leave } (0 < t_{PM} \leq 6) \times \textit{Treated} \\
&+ \beta_3 \textit{ Post Maternity Leave } (6 < t_{PM} \leq 12) \times \textit{Treated} \\
&+ \beta_4 \textit{ Post Maternity Leave } (12 < t_{PM} \leq 36) \times \textit{Treated} \\
&+ \beta_5 \textit{ Pregnancy } (0 \leq t_P < 9) + \beta_6 \textit{ Post Maternity Leave } (0 < t_{PM} \leq 6) \\
&+ \beta_7 \textit{ Post Maternity Leave } (6 < t_{PM} \leq 12) + \beta_8 \textit{ Post Maternity Leave } (12 < t_{PM} \leq 36) \\
&+ \beta_9 \textit{ Treated} + \beta_{10} X_{fmt} + \Phi_{fmt} + \varepsilon_{fmt},
\end{aligned} \tag{5}
$$

where variable definitions for *Pregnancy*, *Post Maternity Leave* $(0 < t_{PM} \leq 6)$, *Post Maternity Leave* $(6 < t_{PM} \leq 12)$, *Post Maternity Leave* $(12 < t_{PM} \leq 36)$, *Treated*, and $X_{fmt}$ are as in Equations (3) and (4). Notably $\Phi_{fmt}$ now denotes month-by-cohort fixed effects, fund fixed effects, and manager fixed effects. That is, we compare treatment funds with their matched control funds within each month, while also accounting for unobserved fund and manager heterogeneity.

Table 5 presents the estimation results from Equation (5). Our primary variables of interest are the interaction terms *Pregnancy* $(0 \leq t_P < 9) \times$ *Treated*, *Post Maternity Leave* $(0 < t_{PM} \leq 6) \times$ *Treated*, *Post Maternity Leave* $(6 < t_{PM} \leq 12) \times$ *Treated*, and *Post Maternity Leave* $(12 < t_{PM} \leq 36) \times$ *Treated*, which capture the treatment effect over the different event periods. Overall, the results indicate that even after accounting for the performance of the matched funds in our control group, managers who become mothers experience a short-term drop in performance around childbirth. Relative to the period before pregnancy and relative to the set of control funds, (abnormal) returns of managers who become mothers are temporarily negatively affected by childbirth-related efforts, as indicated by the negative interaction terms on *Pregnancy* $(0 \leq t_P < 9) \times$ *Treated* and *Post-Maternity Leave* $(0 < t_{PM} \leq 6) \times$ *Treated*. Compared to the evidence presented in Table 3, these results represent a lower bound to the coefficient estimates. Although somewhat smaller in magnitude, the effects are still economically meaningful and statistically significant in the majority of cases. In particular, our most restrictive specifications indicate that, compared to the period before pregnancy and compared to the funds in the control group, managers experience an average performance decline of between 1.7% and 2.2% during pregnancy and between 1.2% and 1.3%

within the first six months after returning from maternity leave, respectively. In annualized terms, we find that managers entering motherhood underperform their matched peers by 2.3% to 2.8%[10] p.a.

Moreover, consistent with the evidence presented in Panel B of Table 3, the performance of treated managers rebounds to pre-pregnancy levels in the medium and long term. The coefficient estimates on *Post-Maternity Leave* $(6 < t_{PM} \leq 12) \times$ *Treated* and *Post-Maternity Leave* $(12 < t_{PM} \leq 36) \times$ *Treated* are statistically insignificant in all cases. In these later months after childbirth, alternative childcare arrangements such as grandparents, might take over some of the childrearing duties, allowing managers to devote more time to work again.These results further strengthen the notion that the productivity dip is only temporary.

To test for robustness, we also separately estimate Equation (5) for the periods of pregnancy and post-maternity leave. As shown in Appendix Tables A6 and A7, the results remain qualitatively and quantitatively unchanged.

# 5 What Causes the Productivity Decline?

In this section, we shed light on the mechanism underlying the temporary drop in performance of female managers who become mothers. Specifically, we examine whether entering motherhood temporarily prevents female managers from devoting full attention to their work responsibilities. As a first test, we test whether the productivity decline is stronger for busy managers who manage a relatively large number of funds simultaneously. Second, we investigate whether female managers who become mothers become less active in their management strategies. Finally, we use data on managers' site visits to their portfolio companies to examine whether the frequency declines around childbirth.

## 5.1 Fund manager busyness

To measure manager busyness, we take advantage of the granularity of the RESSET mutual fund database, which provides detailed information on fund management structures. We suspect that

[10]The compound returns for the fifteen months are calculated based on Table 5 Panel A columns (3), $((1-0.00243)^9 \times (1-0.0022)^6)^{12/15} - 1$, and (6), $((1-0.00187)^9 \times (1-0.00194)^6)^{12/15} - 1$.

fund managers who are responsible for multiple single-managed funds may be more time-constrained than their colleagues with fewer single-managed funds under management. We perform a simple median split at the time of pregnancy and classify managers who simultaneously manage more than the median number of single-managed funds as busy managers.[11]

In Table 6, we report coefficients from multivariate regressions of fund performance around childbirth on the full fund sample after sorting treated managers by the number of funds they manage. We find that the impact of childbirth is confined to instances where the fund manager can ill afford distractions. In particular, the coefficient estimates on *Pregnancy* $(0 \leq t_P < 9)$ and *Post-Maternity Leave* $(6 < t_{PM} \leq 12)$ are always negative and in most cases statistically significant for busy managers (Panel A), while they are insignificant and small in economic terms for the sample of non-busy managers (Panel B).

During the periods *Post Maternity Leave* $(6 < t_{PM} \leq 12)$ and *Post Maternity Leave* $(12 < t_{PM} \leq 36)$ both busy and non-busy managers show no performance differences relative to the pre-pregnancy period and relative to the set of control funds. The coefficient estimates are insignificant in most cases, both for busy and non-busy managers. Overall, the results support the notion that childbirth events temporarily distract fund managers from their work responsibilities and that busy managers are more affected by these distractions.

### 5.2 Trading behavior

Distracted managers may pursue a less active portfolio management strategy. Existing research suggests that such behavior could be detrimental to fund performance (Kacperczyk, Sialm, and Zheng, 2005, Cremers and Petajisto, 2009). Alternatively, the performance dip around childbirth could be due to a change in fund managers' risk preferences, as parenthood is generally associated with an increase in risk aversion (Görlitz and Tamm, 2020). To assess the extent to which the decline in fund performance around childbirth is due to less active portfolio management or a change in risk preferences, we construct several measures of fund manager activity and risk-taking and estimate multivariate regressions on the full fund panel, similar to Equation 4.. Unfortunately, we cannot examine changes in fund managers' portfolios in this context because this information

[11] The median number of single-managed funds under management is three.

is not available at a sufficient granularity.[12]

In Panel A of Table 7, we analyze total risk and idiosyncratic risk around childbirth. *Total Risk* is the standard deviation of fund returns within a month, annualized by multiplying the square root of $252/12$. *Idiosyncratic Risk* is the standard deviation of the residuals from the regression of daily fund returns on the combined market factor model within a month, annualized by multiplying the square root of $252/12$. When a fund's portfolio deviates from the market portfolio, it is exposed to idiosyncratic risk. Therefore, higher idiosyncratic risk might be interpreted as fund managers pursuing a more active fund management strategy. In Panel B of Table 7, we analyze non-market variation and market beta around childbirth. *Non-Market Variation* is calculated as one minus the $R^2$ from the regression of fund excess returns on the combined market factor model within a month. This measure is defined such that an increase indicates a more active portfolio. $\beta_{Market}$ is the sum of the coefficients on the market factors from the regression of daily fund returns on the combined market factor model within a month. If the performance changes around childbirth are driven by an increase in risk aversion rather than less active portfolio management, we would expect to see a change in the market factor loadings.

The results reported in Table 7 indicate that the portfolios of managers entering motherhood have lower total risk and lower idiosyncratic risk in the months surrounding childbirth. In particular, the coefficient estimates on *Pregnancy* ($0 \leq t_P < 9$) and *Post Maternity Leave* ($0 < t_{PM} \leq 6$) are negative and significant in most cases. Accordingly, we also find a decrease in non-market variation during these periods. In contrast, we find no significant change in market factor loadings around childbirth. In the medium to long term, i.e., *Post Maternity Leave* ($6 < t_{PM} \leq 12$) and *Post Maternity Leave* ($12 < t_{PM} \leq 36$), the coefficient estimates for all outcome variables are small and insignificant in the vast majority of cases.

Overall, the evidence presented in Table 7 suggests that managers engage in less active portfolio management around childbirth and supports the notion that childbirth temporarily distracts managers from their job responsibilities.

[12] We only observe fund managers' portfolio holdings on a semi-annual basis. Since we are interested in examining the mechanisms underlying monthly performance changes, the semi-annual data do not allow us to perform granular analyses of the underlying mechanisms.

### 5.3 Corporate site visits

Pregnant workers may reduce their business travel due to the physical challenges of pregnancy, while mothers with newborn babies may also reduce their travel due to the demands of caring for the baby, such as breastfeeding. Company visits and related social interactions are important channels for information gathering. Exploiting a database of company visit records in China, Cheng, Du, Wang, and Wang (2018) show that mutual funds managers' portfolio adjustments around site visits significantly predict future firm performance. Notably, face-to-face social interaction plays a pivotal role in influencing managers' investment decisions and their subsequent performance. Lee (2023) highlights that the decline in face-to-face social interaction during COVID-19 lockdowns led to a deterioration in mutual fund managers' performance on local stocks. Dong, Peng, Qiu, and Xiao (2023) further establish that face-to-face interactions foster portfolio similarity among visitors (to the same firm at the same time), whereas online interactions have no such effect. A potential explanation for the temporary decline in fund returns surrounding female fund managers' pregnancies is the reduced information gathering through company visits.

We investigate this potential channel using the same database of company visits employed by Cheng, Du, Wang, and Wang (2018) and Dong, Peng, Qiu, and Xiao (2023). Beginning in July 2012, firms listed on the Shenzhen exchange have been mandated to report company visits of investors and analysts.[13] The dataset is obtained from the China Stock Market & Accounting Research Database (CSMAR) and merged with our mutual fund manager data through fund firm names and manager names.

Due to the potential differences between face-to-face and online interactions (Lee, 2023, Dong, Peng, Qiu, and Xiao, 2023), we differentiate the on-site and the online company visits. We identify digital meetings by searching the meeting descriptions or addresses for keywords such as "email," "phone," "websites," "apps," or "online meeting rooms." After merging the data with our sample, we identify 33,220 on-site visits and 13,542 online visit records. This translates to an average of 0.15 on-site visits and 0.02 online visits per manager and month.

The extensive lockdown imposed during the COVID-19 pandemic in China had a significant

[13] Firms listed on the Shenzhen exchange account for 55.8% of listed firms in terms of number and 41.1% in terms of value among all the firms that are listed in the mainland.

impact on fund managers' company visit behavior, as illustrated in Figure 5.[14] In particular, the number of online visits increased significantly during the pandemic. To account for altered company visit patterns over time, we analyze the frequency of on-site and online company visits around childbirth both for the sample period preceding January 2020, the onset of the COVID-19 pandemic in China, and for the entire sample period. We aggregate our fund-manager panel to the manager level and estimate an equivalent to the multivariate panel regression in Equation 4 on the full manager panel.

We present the results in Table 8. Panel A documents the estimation results for the entire sample period, while Panel B documents the results for the period preceding the COVID pandemic. We find a decrease in the frequency of on-site and online visits by fund managers around the time of childbirth. Specifically, the results in columns (2) and (4) of Panel A show an average decrease of 0.058 and 0.081 in monthly on-site visits and monthly online visits, respectively, during the pregnancy period. In economic terms, this corresponds to a reduction of 38.7% and 22.5%, respectively, in the average number of on-site visits (0.15) and online visits (0.36) per month. Notably, Panel B reveals that the reduction in online visits during pregnancy in concentrated in the post-COVID period. Moreover, we find some evidence of reduced on-site visit frequency in the first twelve months after returning from maternity leave, the period when women tend to breastfeed. However, the observed decrease in on-site visit frequency diminishes after one year.

Overall, the findings suggest a temporary reduction in information acquisition through company visits around childbirth, paralleling the temporary changes in performance documented in Chapter 4.

### 5.4 Do fund investors withdraw their money?

Another potential mechanism for the temporary performance decline around childbirth is pressure from fund flows. Institutional investors, such as prominent clients of a fund family, may visit funds and acquire information about managers' pregnancies. Anticipating a decline in managers' performance, they may then withdraw their investments. Faced with such pressure, pregnant managers may increase portfolio liquidity, potentially hindering their performance.

[14] Lee (2023) and Dong, Peng, Qiu, and Xiao (2023) demonstrate that COVID-19 substantially altered fund managers' company visit patterns.

To examine redemption pressure from institutional investors, we utilize the dataset on mutual fund investor information. This dataset, available at the semi-annual level for mutual funds, can be obtained from the RESSET Mutual Fund database. We merge this dataset with our sample and analyze changes in the proportion of institutional investor holdings of funds around the time of managers' childbirths. We estimate the effects based on multivariate regressions on the full fund panel, similar to Equation 4.. The results presented in Appendix Table A8 suggest that institutional investor holdings do not exhibit significant variations around childbirth. However, the low frequency of institutional investor holding information may obscure temporary changes in redemption pressure during the months surrounding pregnancy and return to work. To at least partly address this concern, we run the same analyses using quarterly fund flows. We do not find significant changes in fund flows around childbirth, but the quarterly frequency of the data may still mask short-term changes in redemption pressure around childbirth.

## 6 The Effect of Children on Female Fund Managers' Careers

A rich literature has documented that parenthood has substantial effects on the labor market outcomes of women (Kleven, Landais, and Søgaard, 2019, Kleven, Landais, and Leite-Mariante, 2023). The child penalty borne by working mothers is persistent, i.e., it extends beyond the early childhood years (e.g., Kleven, Landais, and Søgaard, 2019). In terms of supply side explanations, Lundborg, Plug, and Rasmussen (2017) document that women reconsider their job choices because of having children. In particular, they find that new mothers change into lower-paid jobs that are closer to home. On the demand side, results by Andrade, González, and Pifarré Arolas (2021) provide evidence that employers disproportionately lay-off new mothers. In addition, it has been documented in various contexts that societal expectations regarding new mothers' ability and willingness to focus on their job can adversely impact their career trajectories (Correll, Benard, and Paik, 2007, Heilman and Okimoto, 2008, He, Li, and Han, 2023).

In this section, we ask whether having children has lasting consequences for female managers' careers, and discuss whether these can be explained by changes in productivity around childbirth. To address this question, we aggregate our fund-manager panel at the manager level and extend the sample to 2022 in case of industry attrition. For each manager entering motherhood, we denote

the twelve months as of childbirth by $t = 0$. This helps to avoid attenuation bias and to accurately estimate the effect of motherhood on career outcomes. We follow Kleven, Landais, and Søgaard (2019) and estimate the following event study specification for each manager $m$ and year $t$:

$$Y_{mt} = \sum_{\substack{t=-3 \\ t\neq -1}}^{6} \beta_t \times \mathbb{1}\ (t \textit{ years from childbirth}) + \beta_2\ \textit{Treated} + \Phi_{mt} + \varepsilon_{mt}, \tag{6}$$

where $Y_{mt}$ denotes the outcome of interest. $\sum_{\substack{t=-3 \\ t\neq -1}}^{5} \beta_t \times \mathbb{1}\ (t \textit{ years from childbirth})$ indicates the set of event-time dummies running from 3 years before to up to six years after childbirth. We omit the event time dummy at $t = -1$ such that the effects are estimated relative to the twelve moths preceding childbirth. *Treated* is an indicator that takes the value of one if the fund manager becomes a mother during the sample period, and $\Phi_{fmt}$ denotes month-by-cohort, month-by-age and manager fixed effects. Note that unlike Kleven, Landais, and Søgaard (2019), our data does not allow us to estimate the effect of motherhood relative to fatherhood specifically. Instead, we estimate the effect of children relative to all managers who do not become parents during our sample period.

### 6.1 Labor force participation

We start by investigating whether motherhood affects the extensive margin of equilibrium labor supply and demand in the mutual fund industry. That is, we ask whether children have an impact on female managers' participation rates in the mutual fund industry.

Figure 6 plots the impact of children on participation rates across event time. Panel A considers an event study horizon that runs from three years before to three years after the year of childbirth. To illustrate the long run effects, Panel B considers an event study horizon that includes six years after the year of childbirth. However, the majority of childbirth events in our sample occurs as of the year 2017, so that the coefficient estimates for the later event periods are estimated on a lower number of observations. We include 95 percent confidence bands around the event coefficients. We observe that participation rates of managers who enter motherhood and managers who do not become a parent evolve in parallel before childbirth, i.e., there are no differences in trends.

The coefficient estimates are close to zero and statistically insignificant. However, in the year of childbirth, participation rates of managers who enter motherhood drop significantly relative to untreated managers. In particular, mothers experience an immediate drop in participation rates of around 56 percentage points in $t = 0$ relative to the twelve months before childbirth and relative to the control group of untreated managers. The size of the estimate is larger in comparison to other studies examining the child penalty in China (e.g., Meng, Zhang, and Zou, 2023, Kleven, Landais, and Leite-Mariante, 2023), as we have no attenuation bias in the initial decline.

In the years following the initial decline, the participation rate of managers who become mothers recovers slightly, but never returns to its initial level. Three (six) years after the year of childbirth, the participation rate of mothers has stabilized at around 15 (12) percentage points below its level in $t = -1$ relative to the control group. This contrasts with the evidence for China as a whole, where participation rates recover relatively quickly to pre-motherhood levels (e.g., Kleven, Landais, and Leite-Mariante, 2023, Meng, Zhang, and Zou, 2023). However, fund managers are located in large cities such as Beijing, where child penalties tend to be more pronounced than in rural areas (Kleven, Landais, and Leite-Mariante, 2023). The underlying rationale for this variation in child penalties is that the degree of urbanization serves as a proxy for the structure of the labor market, with jobs in rural areas presumed to be more family-friendly and jobs in urban areas presumed to be more competitive.

Can the persistent decline in participation rates in the mutual fund industry be explained by productivity changes around childbirth? If biology and childcare efforts have long-term effects on productivity, it may be rational to see a decline in the participation rate of female fund managers after they enter motherhood. In particular, postpartum health problems and changes in hormone levels and brain structure or increased childcare responsibilities may prevent female managers from performing well in the competitive fund industry when they return from maternity leave. However, the results presented in Chapter 4 argue against this explanation for the persistent decline in participation rates. Specifically, we find evidence of underperformance only in the first six months after returning from maternity leave. After this period, the productivity of female managers recovers relative to the period before pregnancy and relative to childless managers.

### 6.2 Promotions to leadership positions

We further investigate the impact of children on female fund managers' careers by examining promotions to leadership positions at the fund company. Information on the start and end date of a person's leadership position(s) are obtained from the *Fund Management Company's Executive Introduction* database in RESSET.[15] We merge this information with our manager sample using fund company and manager names. The merged sample suggests that on average each manager holds 0.5 leadership positions (with a standard deviation of 0.87) and that 31% of the managers hold at least one leadership position (with a standard deviation of 46.2%).

We examine the effect of children on leadership positions by estimating equation (6) conditional on labor force participation. The results are illustrated in Figure 7. We include 95 percent confidence bands around the event coefficients. Panel A illustrates the impact of childbirth on the likelihood of holding at least one leadership position. We observe that the probability of holding at least one leadership position evolves similarly for managers who become mothers and their untreated peers before childbirth. However, as of the year of childbirth, the probability of holding a leadership position decreases for new mothers relative to childless managers and relative to the year preceding childbirth. In particular, conditional on participation in the mutual fund industry, the probability of holding a leadership position drops by 5.9 percentage points for new mothers in year $t = 0$. The coefficient estimate is significant at the 5% level.

Notably, the negative effect of children on mothers' likelihood to enter a leadership position becomes more pronounced over time. Three years after childbirth, the probability of holding a leadership position is reduced by 11.9 percentage points relative to the year before childbirth and relative to their peers. The economic magnitude of this effect is large. The results suggest that within three years after the year of childbirth, the likelihood of holding a leadership position is reduced by 38.4% relative to the average likelihood of holding to a leadership position. The economic magnitude is even larger if we take into account that the observed difference in holding a leadership position between female and male managers in the Chinese mutual fund industry is

[15] There are seven types of leadership positions included in the database: director of the board, member of the investment strategy committee, member of the supervisory board committee, executive or vice executive, chief economist or other technology leader, a leadership position in the Communist Party of China (which is relevant for state-owned fund companies), and other management positions.

27.4% versus 33.6%, respectively.

To further investigate the impact of children on the career progression of female managers, we also examine changes in the number of leadership positions held by female managers around the time of childbirth. As a manager can be appointed to more than one leadership position, and taking on more responsibility is generally associated with career progression, this analysis provides additional insights into the career trajectories of new mothers. Panel B illustrates the effect of childbirth on the total number of leadership positions held by a fund manager. As in Panel A, the effects are estimated conditional on employment. In parallel with the evolution of the probability of holding a leadership position, the average number of leadership positions held by managers who become mothers decreases as of $t = 0$ relative to the year preceding childbirth and relative to the control group. Three years after childbirth, female managers hold on average 0.24 fewer positions, which corresponds to a substantial 53.5% reduction compared to the average number of leadership positions held by managers in the sample. This effect is statistically significant at the 5% level.

Overall, our findings suggest that, conditional on returning from maternity leave, female managers are less likely to hold a leadership position and hold fewer leadership positions, on average. These effects extend beyond the year of childbirth and persist over the three proceeding years, i.e., months 13 to 47 after childbirth[16]. While we cannot distinguish between supply and demand explanations, we can shed light on whether the reduced promotion prospects can be explained by differences in performance. If female managers who return to work after maternity leave consistently underperform their peers, it may be rational to appoint childless managers to leadership positions. However, the results presented in Chapter 4 challenge this reasoning as young mothers' productivity recovers already six months after returning from maternity leave.

[16]The results also hold if we consider six years after the year of childbirth. However, due to the smaller number of observations, the coefficients for later periods are estimated with less precision.

# 7 Conclusion

We investigate how pregnancy and motherhood affect the productivity and career prospects of female fund managers. We document a transient drop in female fund managers' performance, which starts during pregnancy and ends about six month after returning from maternity leave. The effect is stronger for busier fund managers who are in charge of more funds. We show that fund managers manage their portfolios less actively and reduce the number of corporate site visits during this period.

For the period between six and thirty-six months after returning from maternity leave, we find no performance differences between fund managers with and without children. Nevertheless, children impose large and persistent penalties on female managers' careers in the fund industry. In particular, we document a significant and persistent drop out rate of female fund managers after childbirth. Moreover, we observe that conditional on returning from maternity leave, new mothers face lower promotion prospects. These effects extend beyond the year of childbirth and persist over the three to six subsequent years. While we cannot distinguish between supply and demand explanations, we can shed light on whether the persistent child penalty on female fund managers' career trajectories can be explained by sustained differences in performance. Our findings challenge the notion that children may limit the career advancement of new mothers due to persistently lower productivity. Only six months after returning to work, new mothers' performance aligns with that of childless fund managers again.

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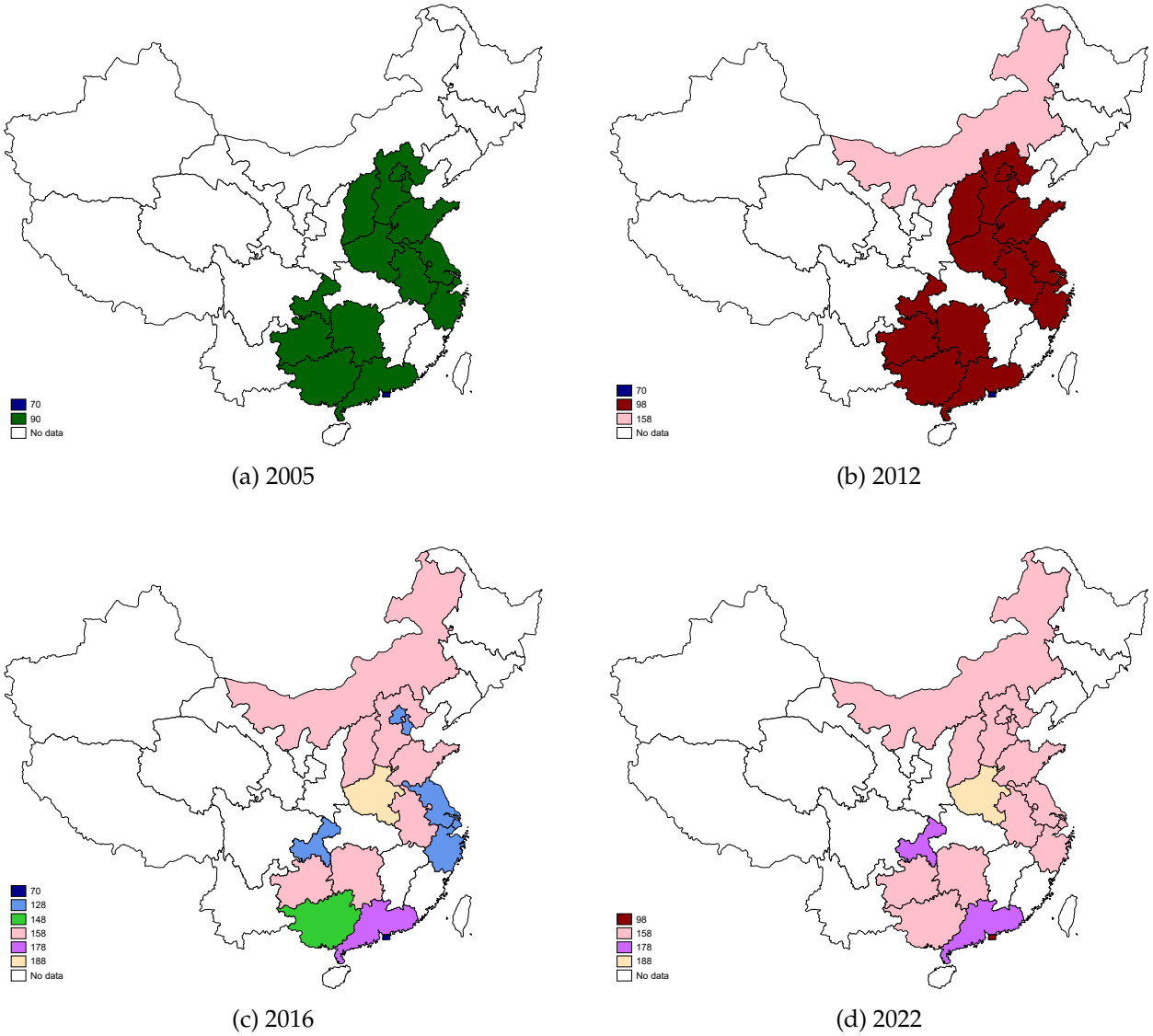
Figure 1—Maternity Leave Days

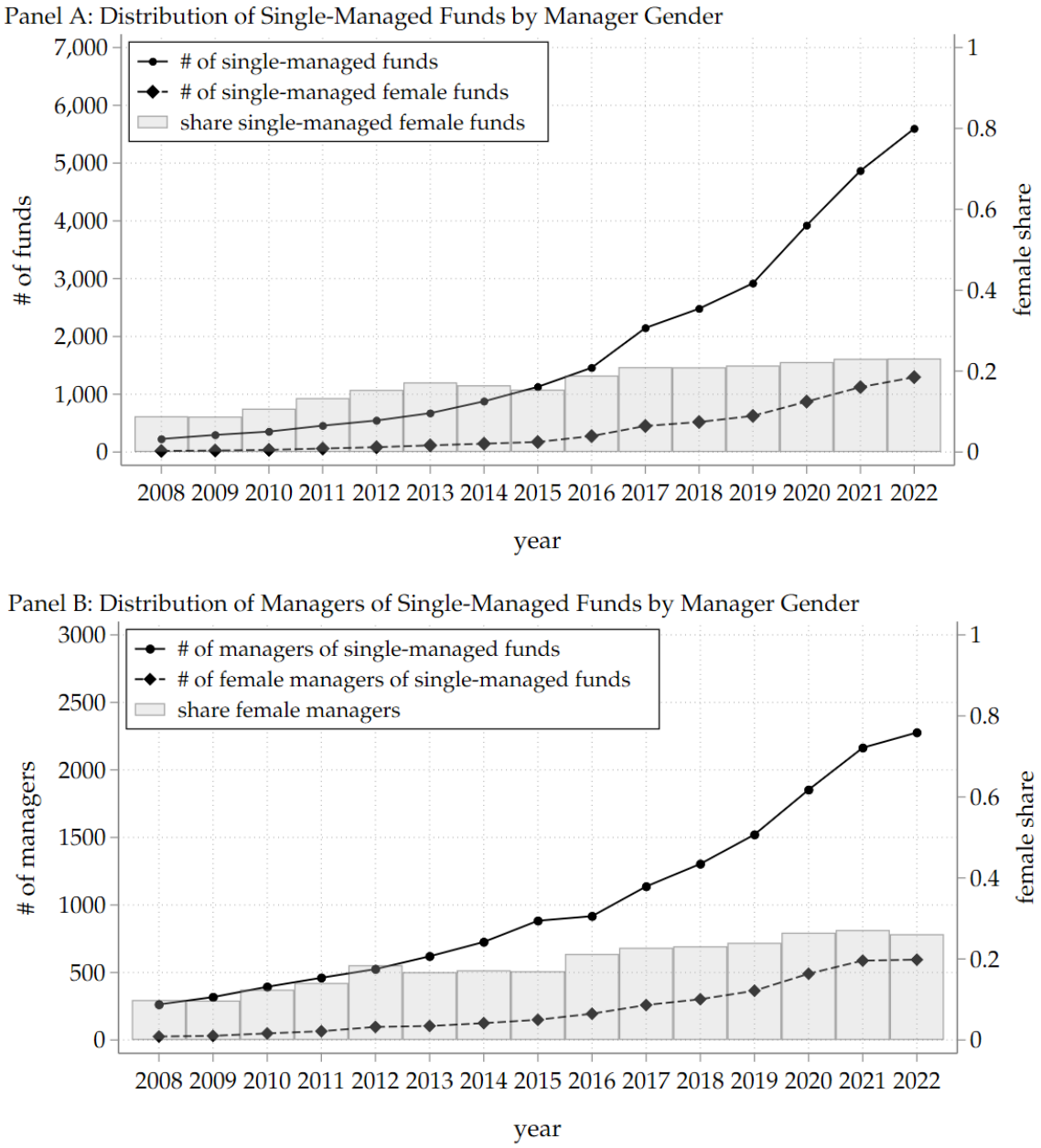



(a) 2005 (b) 2012

(c) 2016 (d) 2022

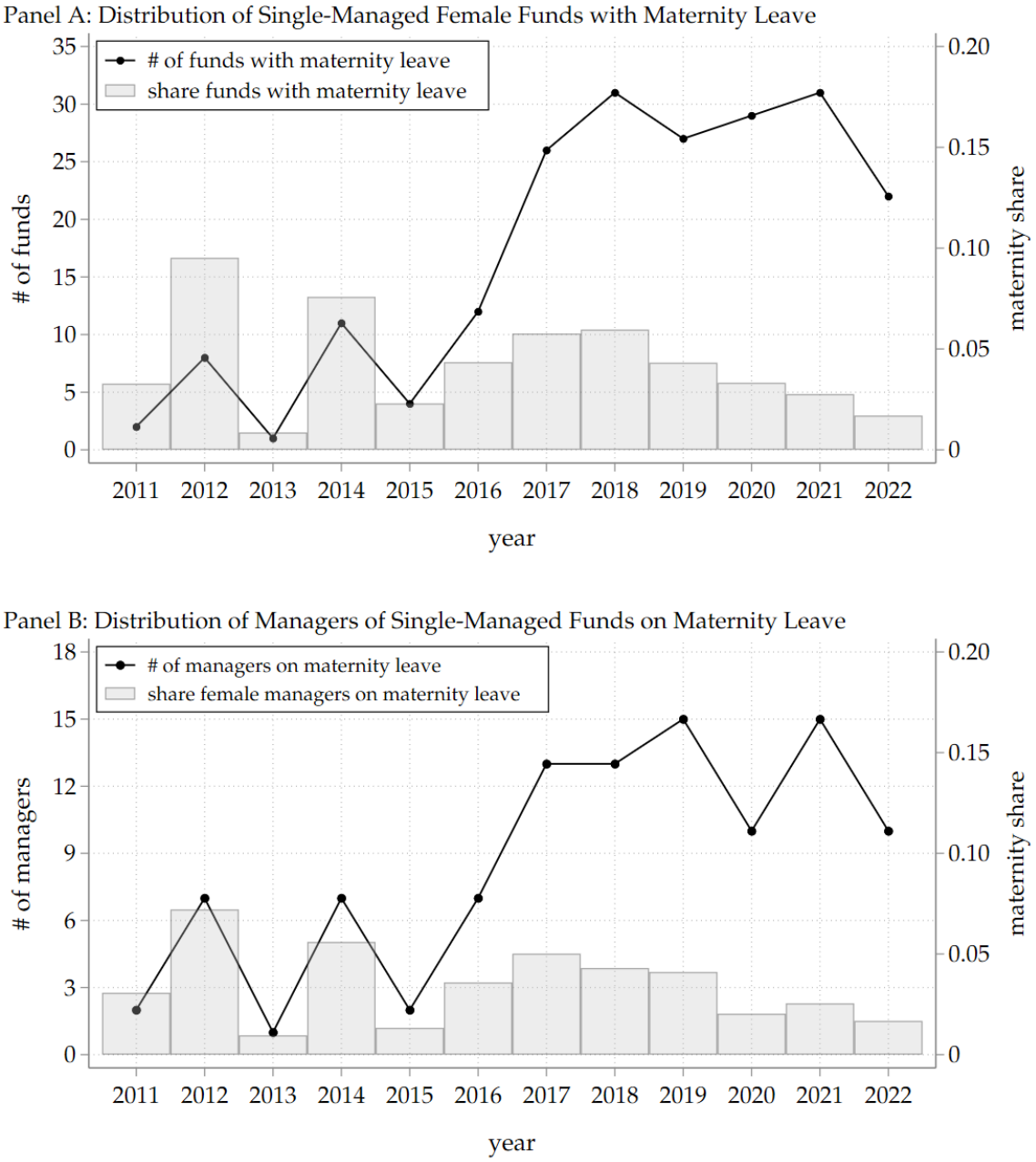
*Notes*: This figure depicts the changes in maternity leave policies between 2005 and 2022 across various provinces in the geographic region commonly referred to as China. It includes the island of Taiwan, which is situated to the east of the Chinese mainland. This representation is in line with the map's focus on the physical geography and heterogeneity in maternity leave length. Data on maternity leave length was gathered for provinces with mutual funds, while those without mutual funds were categorized as "no data". Each province's maternity leave duration is represented by a distinct color. The darkest hues (blue and green) signify provinces with the shortest maternity leave (less than 120 days), while the lightest hues (yellow and brown) indicate provinces with the longest maternity leave (158 days or more). The majority of provinces have extended maternity leave from 90 days in 2005 to 158 days in 2022.

Figure 2—Distribution of Funds and Fund Managers by Manager Gender



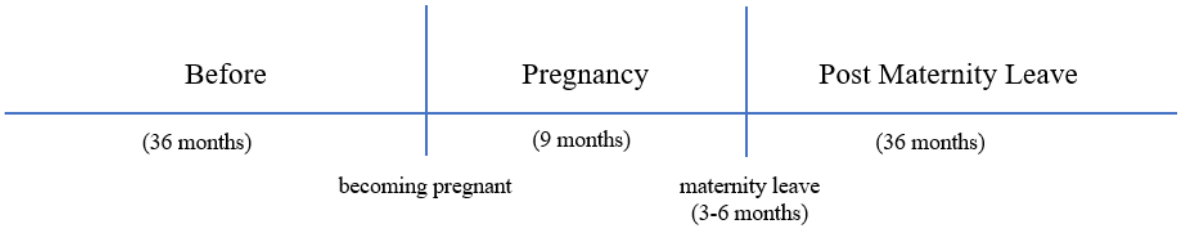

*Notes:* This figure illustrates the distribution of funds and fund managers by manager gender. Panel A plots the total number of single-managed funds and the number of single-managed funds managed by females. The grey bars depict the share of female-managed funds as a percentage of the total number of single-managed funds. Panel B illustrates the total number of managers of single-managed funds and the number of female managers of single-managed funds. The grey bars indicate the share of female managers as a percentage of the total number of managers. Data are taken from the RESSET Survivor-Bias-Free Chinese Mutual Fund database. The sample includes all single-managed bond, equity, and hybrid funds between January 2008 and December 2022. Managers are classified as managers of single-managed funds if they are responsible for at least one single-managed fund within this period. In case of a manager change within one year, a fund is classified as a female fund if it is managed by a female manager for more than 6 months.

Figure 3—Distribution of Maternity Leaves over Time



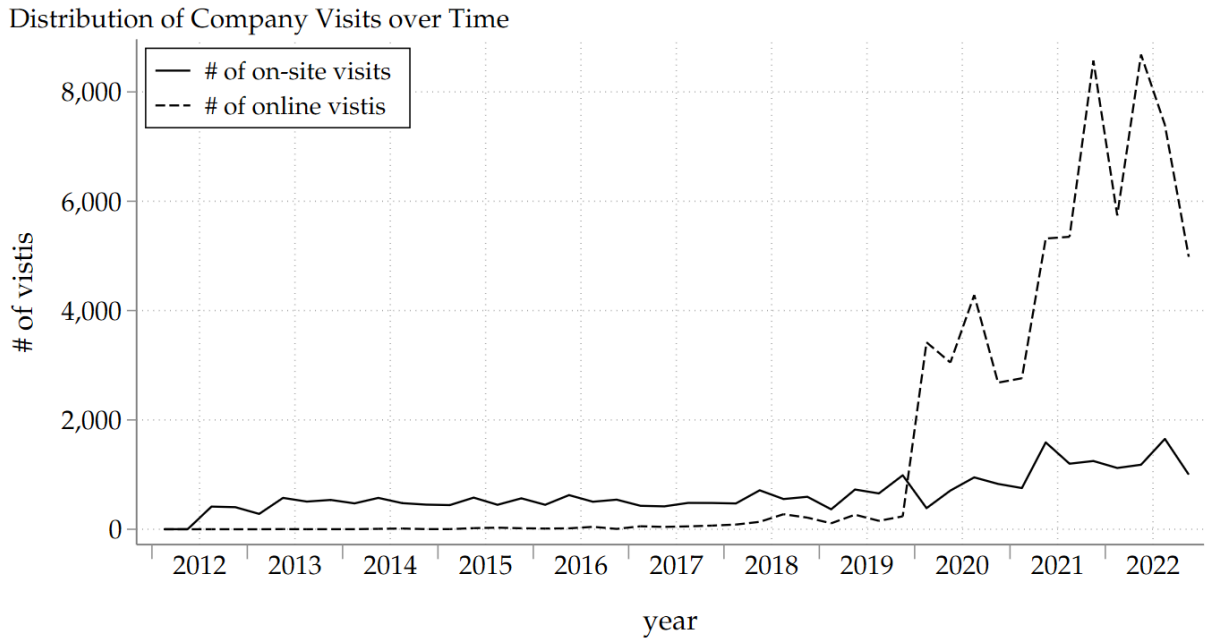

*Notes:* This figure illustrates the distribution of maternity leaves over time. Panel A plots the number of female funds with maternity leave (line) and the share of fund maternity leaves as a fraction of all female funds (bar). Panel B shows the number of female fund managers on maternity leave (line) and the share of female fund managers on maternity leave as a fraction of all female managers (bar). Data are taken from the RESSET Survivor-Bias-Free Chinese Mutual Fund database. The sample includes all maternity leaves of single-managed bond, equity, and hybrid funds between January 2008 and December 2022. Managers are classified as managers of single-managed funds if they are responsible for at least one single-managed fund within this period. We choose January 2011 as the starting date for the graph, as 2011 is the first year for which we observe a maternity leave for a single-managed fund. We identify maternity leaves by manually checking whether the reports disclosed for manager leaves contain the term “maternity leave".

Figure 4—Event Periods around Childbirth



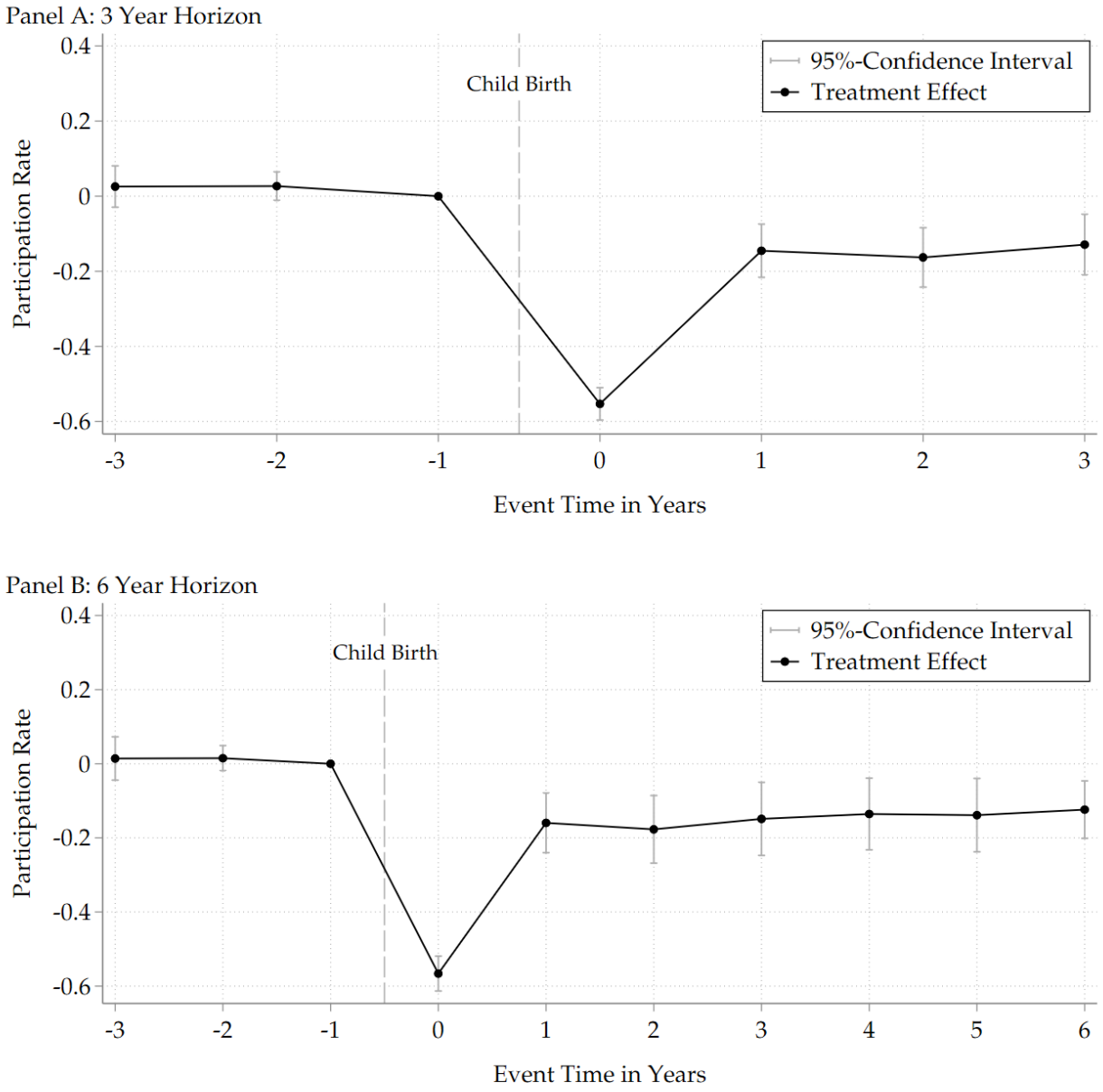

*Notes:* This figure illustrates the different event periods during which we observe managers who become mothers. The *Before* period refers to the 36 months prior to pregnancy. The *Pregnancy* period refers to the months between becoming pregnant and the start of maternity leave, and lasts a maximum of 9 months. *Post Maternity Leave* refers to the 36 months after returning from maternity leave.

Figure 5—Number of Site Visits over Time



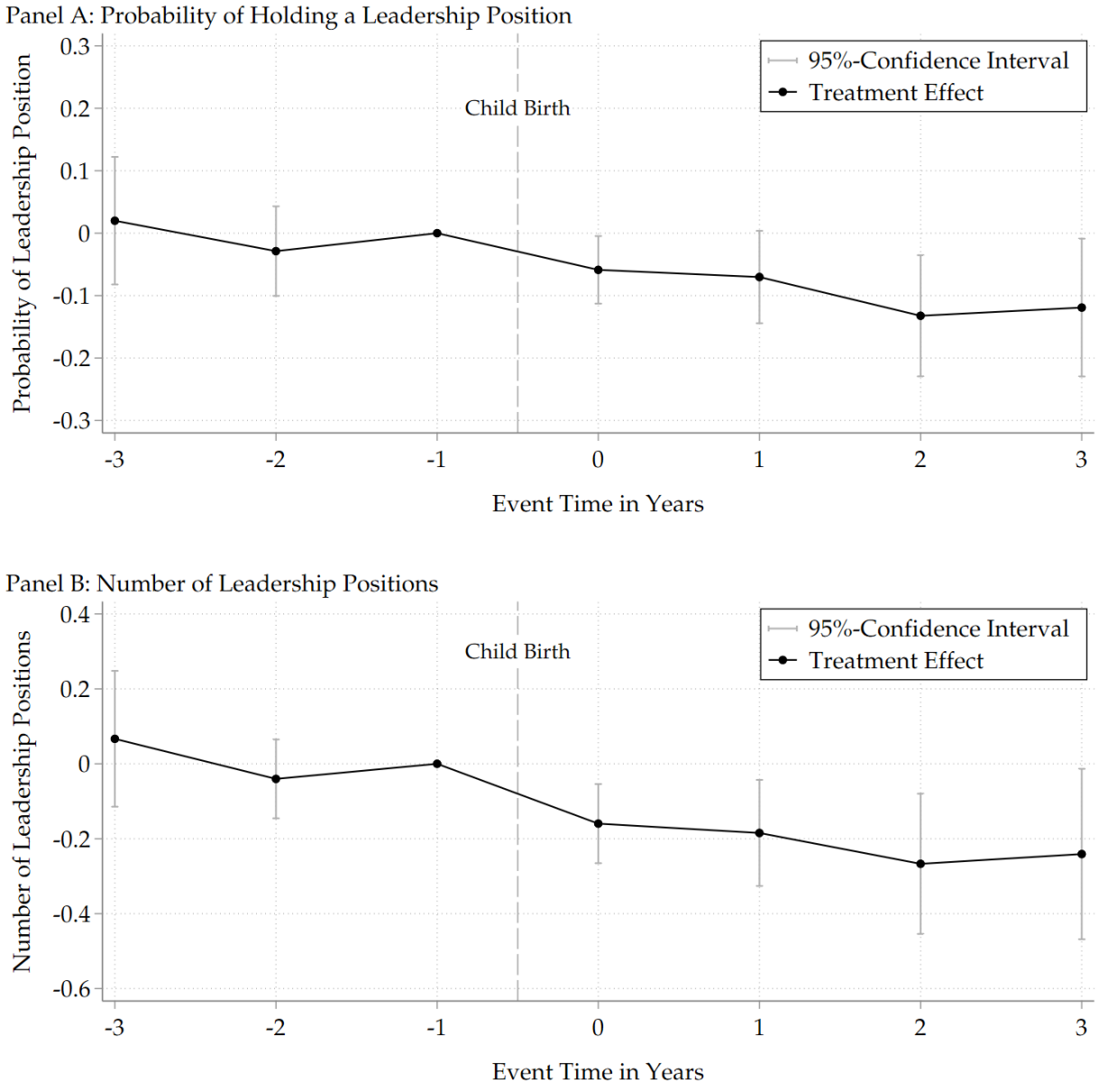

*Notes:* This figure plots the number of quarterly on-site and online portfolio company visits over time, respectively. The information on company visits is available from July 2012 for firms listed on the Shenzhen Stock Exchange. An event is categorized as an online visit if the meeting is held via a digital method (email, phone, websites, apps, or online meeting rooms).

Figure 6—Impact of childbirth on Participation Rates




*Notes:* This figure plots coefficients on participation in the mutual fund industry from event studies around childbirth. The estimates represent cohort-specific event coefficients, while controlling for manager age and time trends. For each manager entering motherhood, we denote the twelve months as of childbirth by $t = 0$ and define the other event periods accordingly. We omit the event time dummy at $t = -1$ such that the effects are estimated relative to the twelve months preceding childbirth. The 95 percent confidence intervals are based on standard errors clustered at the manager level. Panel A considers an event study horizon that runs from three years before to three years after the year of childbirth. To illustrate the long run effects, Panel B considers an event study horizon that includes six years after the year of childbirth. However, the majority of childbirth events in our sample occurs as of 2017, so that the coefficient estimates for the later event periods are estimated on a lower number of observations.

Figure 7—Impact of Childbirth on Leadership Positions




*Notes:* This figure plots coefficients on leadership positions in the mutual fund industry from event studies around childbirth. The estimates represent cohort-specific event coefficients, while controlling for manager age and time trends. The effects are estimated conditional on employment. For each manager entering motherhood, we denote the twelve months as of childbirth by $t = 0$ and define the other event periods accordingly. We omit the event time dummy at $t = -1$ such that the effects are estimated relative to the twelve months preceding childbirth. The 95 percent confidence intervals are based on standard errors clustered at the manager level. Panel A illustrates the impact of childbirth on the likelihood of holding at least one leadership position. Panel B illustrates the effect of childbirth on the total number of leadership positions held by a fund manager. The types of leadership positions considered include: a position as director of the board, a position on the investment strategy committee, a position on supervisory board committee, a position as executive or vice executive, a position as chief economist or other technology leader, a leadership position in the Communist Party of China, and other management positions.

Table 1—FUND DESCRIPTIVE STATISTICS BY GENDER AND TREATMENT STATUS

| | Mean | STD | Median | P1 | P99 |
|---|---|---|---|---|---|
| **Panel A: Pooled Statistics** | | | | | |
| Fund size (in millions) | 1494.893 | 2391.770 | 558.302 | 5.895 | 13949.885 |
| Fund age | 4.091 | 3.632 | 3.000 | 0.083 | 16.000 |
| Fund flows (in %) | 8.881 | 87.131 | -2.281 | -85.267 | 682.927 |
| Raw return (in %) | 0.622 | 4.888 | 0.352 | -14.130 | 16.846 |
| Abnormal return (in %) | 0.403 | 2.881 | 0.160 | -7.845 | 10.560 |
| Total risk (in %) | 3.763 | 3.231 | 3.575 | 0.045 | 12.151 |
| Idiosyncratic risk (in %) | 1.970 | 1.780 | 1.602 | 0.043 | 7.409 |
| $\beta_{Market}$ | 0.801 | 3.747 | 0.579 | -11.157 | 12.433 |
| Manager age | 36.605 | 4.675 | 36.167 | 28.167 | 50.167 |
| Manager tenure | 1.993 | 1.838 | 1.500 | 0.000 | 8.333 |
| Manager is female | 0.216 | 0.412 | 0.000 | 0.000 | 1.000 |

| | All Funds | Female Funds | Male Funds | Difference | t-stat |
|---|---|---|---|---|---|
| **Panel B: Statistics By Gender** | $(N = 344,230)$ | $(N = 74,357)$ | $(N = 269,873)$ | | |
| Fund size (in millions) | 1494.893 | 1428.625 | 1512.880 | -84.255 | -1.45 |
| Fund age | 4.091 | 3.866 | 4.153 | -0.286*** | -3.07 |
| Fund flows (in %) | 8.881 | 10.224 | 8.517 | 1.708** | 2.46 |
| Raw return (in %) | 0.622 | 0.478 | 0.661 | -0.183*** | -9.35 |
| Abnormal return (in %) | 0.403 | 0.296 | 0.432 | -0.136*** | -9.71 |
| Total risk (in %) | 3.763 | 2.596 | 4.083 | -1.487*** | -20.94 |
| Idiosyncratic risk (in %) | 1.970 | 1.417 | 2.115 | -0.699*** | -17.59 |
| $\beta_{Market}$ | 0.817 | 0.692 | 0.850 | -0.158*** | -9.50 |
| Bond fund | 0.336 | 0.508 | 0.288 | 0.220*** | 17.00 |
| Equity fund | 0.095 | 0.064 | 0.103 | -0.039*** | -5.51 |
| Hybrid fund | 0.569 | 0.428 | 0.608 | -0.180*** | -13.82 |
| Manager age | 36.605 | 36.630 | 36.598 | 0.032 | 0.27 |
| Manager tenure | 1.993 | 1.984 | 1.996 | -0.012 | -0.26 |
| Manager has PhD | 0.108 | 0.054 | 0.123 | -0.069*** | -10.56 |
| Manager has master's only | 0.854 | 0.913 | 0.838 | 0.075*** | 9.62 |
| Manager has bachelor's only | 0.038 | 0.034 | 0.039 | -0.006 | -1.20 |

Table 1 – *cont'd*

**Panel C: Pooled Statistics for Matched Sample**

| | All Funds ($N = 11,120$) | Treated Funds ($N = 3,628$) | Control Funds ($N = 7,492$) | Difference | t-stat |
|---|---|---|---|---|---|
| Fund size (in millions) | 1596.236 | 1409.143 | 1687.008 | -277.865 | -1.01 |
| Fund age | 2.864 | 2.791 | 2.900 | -0.109 | -0.33 |
| Fund flows (in %) | 8.795 | 6.923 | 9.702 | -2.779 | -0.90 |
| Raw return (in %) | 0.617 | 0.610 | 0.621 | -0.011 | -0.13 |
| Abnormal return (in %) | 0.385 | 0.385 | 0.385 | 0.000 | 0.01 |
| Total risk (in %) | 2.002 | 1.956 | 2.025 | -0.070 | -0.24 |
| Idiosyncratic risk (in %) | 1.056 | 1.073 | 1.048 | 0.025 | 0.15 |
| $\beta_{Market}$ | 0.684 | 0.723 | 0.665 | 0.058 | 0.91 |
| Bond fund | 0.638 | 0.662 | 0.627 | 0.035 | 0.59 |
| Equity fund | 0.086 | 0.082 | 0.088 | -0.006 | -0.16 |
| Hybrid fund | 0.276 | 0.256 | 0.285 | -0.029 | -0.57 |
| Manager age | 34.895 | 34.655 | 35.012 | -0.356 | -0.87 |
| Manager tenure | 1.652 | 1.661 | 1.647 | 0.013 | 0.05 |
| Manager has PhD | 0.059 | 0.042 | 0.068 | -0.025 | -1.04 |
| Manager has master's only | 0.892 | 0.958 | 0.860 | 0.098*** | 3.11 |
| Manager has bachelor's only | 0.049 | 0.000 | 0.072 | -0.072*** | -3.49 |

*Notes:* This table reports average fund and manager characteristics for all observations entering our baseline regressions. All variables are defined in detail in Appendix Table A1. Panel A reports pooled statistics, while Panel B reports differences between the average characteristics of female- and male-managed funds. Panel C presents differences in fund and manager characteristics for funds with a maternity event (treatment group) and our matched control funds. The matching procedure is presented in Section 4.3. The number of fund-month observations is displayed in the column header in parentheses. The sample includes single-managed bond, equity, and hybrid funds between January 2008 and December 2022. Significance is calculated based on a two-sided t-test with standard errors clustered at the fund level. *, **, and ***, indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Table 2—UNIVARIATE ANALYSIS OF PERFORMANCE AROUND CHILDBIRTH

| | | Pregnancy | Post Maternity Leave | | | Difference | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Before | $(0 \leq t_P < 9)$ | $(0 < t_{PM} \leq 6)$ | $(6 < t_{PM} \leq 12)$ | $(12 < t_{PM} \leq 36)$ | (2)-(1) | (3)-(1) | (4)-(1) | (5)-(1) |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| Raw Return (in %) | 0.619 | 0.376 | 0.292 | 0.978 | 1.053 | -0.243* | -0.327* | 0.359* | 0.434** |
| Abnormal Return (in %) | 0.380 | 0.225 | 0.202 | 0.590 | 0.465 | -0.155 | -0.178* | 0.210 | 0.085 |

*Notes*: This table reports univariate analysis of fund performance around childbirth. Fund performance metrics analyzed include raw monthly returns and monthly abnormal returns. Abnormal returns are calculated using a combined factor model that includes an equity market factor and a bond market factor. The factor loadings are estimated over the last 36 months. All return measures are expressed in percent. The *Before* period refers to the 36 months prior to pregnancy. The *Pregnancy* ($0 \leq t_P < 9$) period refers to the months between becoming pregnant and the start of maternity leave, and lasts a maximum of 9 months. *Post Maternity Leave* ($0 < t_{PM} \leq 6$), *Post Maternity Leave* ($6 < t_{PM} \leq 12$) *Post Maternity Leave* ($12 < t_{PM} \leq 36$) are indicators for the sub-periods after returning from maternity leave. Columns (1) to (5) report average (abnormal) returns over the different periods, while columns (6) to (9) report the associated differences. Significance is calculated based on a two-sided t-test with standard errors clustered at the fund level. *, **, and ***, indicate statistical significance at the $10\%$, $5\%$, and $1\%$ level, respectively.

Table 3—MULTIVARIATE PANEL REGRESSIONS ON PERFORMANCE AROUND CHILDBIRTH

| **Panel A: Only Treatment Funds** | Raw Return | | | Abnormal Return | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Pregnancy ($0 \leq t_P < 9$) | -0.249** | -0.364** | -0.364** | -0.193** | -0.234* | -0.234* |
| | (0.120) | (0.170) | (0.171) | (0.089) | (0.123) | (0.124) |
| Post Maternity Leave ($0 < t_{PM} \leq 6$) | -0.171 | -0.388* | -0.388* | -0.160* | -0.221 | -0.221 |
| | (0.126) | (0.217) | (0.218) | (0.095) | (0.150) | (0.151) |
| Post Maternity Leave ($6 < t_{PM} \leq 12$) | 0.274* | 0.041 | 0.041 | 0.151 | 0.087 | 0.087 |
| | (0.165) | (0.283) | (0.285) | (0.124) | (0.214) | (0.215) |
| Post Maternity Leave ($12 < t_{PM} \leq 36$) | 0.120 | -0.098 | -0.098 | -0.054 | -0.098 | -0.098 |
| | (0.147) | (0.320) | (0.322) | (0.107) | (0.230) | (0.231) |
| Log(Fund Size) | 0.062*** | 0.077* | 0.077* | 0.058*** | 0.039 | 0.039 |
| | (0.021) | (0.043) | (0.043) | (0.018) | (0.028) | (0.029) |
| Fund Age | 0.043*** | | | 0.017* | | |
| | (0.013) | | | (0.010) | | |
| Equity Fund | 0.999*** | | | 0.710*** | | |
| | (0.167) | | | (0.143) | | |
| Hybrid Fund | 0.568*** | | | 0.398*** | | |
| | (0.084) | | | (0.069) | | |
| Manager Age | 0.009 | | | 0.000 | | |
| | (0.013) | | | (0.010) | | |
| Manager has PhD | 0.035 | | | 0.027 | | |
| | (0.152) | | | (0.170) | | |
| Month FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Fund FE | No | Yes | Yes | No | Yes | Yes |
| Manager FE | No | No | Yes | No | No | Yes |
| N | 7296 | 7295 | 7295 | 7236 | 7235 | 7235 |
| $R^2$ | 0.337 | 0.337 | 0.328 | 0.170 | 0.181 | 0.169 |

Table 3 – *cont'd*

| **Panel B: All Funds** | Raw Return | | | Abnormal Return | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Pregnancy ($0 \leq t_P < 9$) | -0.264** | -0.290** | -0.263* | -0.232** | -0.259*** | -0.220** |
| | (0.128) | (0.136) | (0.137) | (0.093) | (0.099) | (0.099) |
| Post Maternity Leave ($0 < t_{PM} \leq 6$) | -0.133 | -0.232* | -0.183 | -0.177* | -0.235** | -0.158 |
| | (0.130) | (0.137) | (0.138) | (0.096) | (0.098) | (0.099) |
| Post Maternity Leave ($6 < t_{PM} \leq 12$) | 0.346** | 0.250 | 0.308* | 0.184 | 0.110 | 0.204 |
| | (0.166) | (0.175) | (0.176) | (0.132) | (0.149) | (0.151) |
| Post Maternity Leave ($12 < t_{PM} \leq 36$) | 0.145 | 0.067 | 0.150 | -0.047 | -0.113 | 0.011 |
| | (0.148) | (0.167) | (0.168) | (0.109) | (0.114) | (0.115) |
| Treated | 0.047 | | | 0.084* | | |
| | (0.061) | | | (0.047) | | |
| Log(Fund Size) | 0.044*** | 0.051*** | 0.037*** | 0.037*** | 0.014** | -0.001 |
| | (0.004) | (0.008) | (0.009) | (0.003) | (0.006) | (0.006) |
| Fund Age | 0.017*** | | | 0.003* | | |
| | (0.002) | | | (0.002) | | |
| Equity Fund | 0.807*** | | | 0.558*** | | |
| | (0.025) | | | (0.022) | | |
| Hybrid Fund | 0.704*** | | | 0.447*** | | |
| | (0.014) | | | (0.011) | | |
| Manager Age | -0.008*** | -0.013*** | | -0.008*** | -0.015*** | |
| | (0.002) | (0.003) | | (0.001) | (0.002) | |
| Manager has PhD | 0.006 | 0.066 | | 0.008 | 0.073** | |
| | (0.024) | (0.042) | | (0.020) | (0.034) | |
| Month FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Fund FE | No | Yes | Yes | No | Yes | Yes |
| Manager FE | No | No | Yes | No | No | Yes |
| N | 297810 | 297492 | 297833 | 294118 | 294038 | 294378 |
| $R^2$ | 0.457 | 0.458 | 0.462 | 0.184 | 0.189 | 0.195 |

*Notes*: This table reports coefficients from multivariate regressions of fund performance around childbirth. Fund performance metrics analyzed include raw monthly returns and monthly abnormal returns. Abnormal returns are calculated using a combined factor model that includes an equity market factor and a bond market factor. The factor loadings are estimated over the last 36 months. Both return measures are expressed in percent. The independent variables include five indicator variables which represent different time periods. *Before* refers to the 36 months before becoming pregnant and is omitted from the regression. *Pregnancy* ($0 \leq t_P < 9$) refers to the months between becoming pregnant and the start of maternity leave, and lasts a maximum of 9 months. *Post Maternity Leave* ($0 < t_{PM} \leq 6$), *Post Maternity Leave* ($6 < t_{PM} \leq 12$), and *Post Maternity Leave* ($12 < t_{PM} \leq 36$) are indicators for the sub-periods after returning from maternity leave. *Treated* is an indicator variable that takes a value of one if the fund manager becomes a mother during the sample period. The other independent variables are described in Appendix Table A1. Panel A reports results for the group of treatment funds, while Panel B reports results for all funds. Standard errors clustered at the fund level are reported in parentheses. *, **, and ***, indicate statistical significance at the $10\%$, $5\%$, and $1\%$ level, respectively.

Table 4—TESTING THE PARALLEL TRENDS ASSUMPTION

| | Treated | | Control | | Difference | |
|---|---|---|---|---|---|---|
| | Mean | N | Mean | N | Mean | t-statistic |
| **Panel A: Raw Return** | | | | | | |
| $-36 \leq t_P < 0$ | 0.616 | 3018 | 0.567 | 6043 | 0.049 | 0.59 |
| $-30 \leq t_P < 0$ | 0.646 | 2789 | 0.589 | 5619 | 0.057 | 0.57 |
| $-24 \leq t_P < 0$ | 0.704 | 2479 | 0.604 | 5052 | 0.100 | 0.97 |
| $-18 \leq t_P < 0$ | 0.760 | 2094 | 0.614 | 4296 | 0.146 | 1.40 |
| $-12 \leq t_P < 0$ | 0.756 | 1581 | 0.663 | 3265 | 0.093 | 0.81 |
| $-6 \leq t_P < 0$ | 0.612 | 903 | 0.595 | 1853 | 0.017 | 0.12 |
| **Panel B: Abnormal Return** | | | | | | |
| $-36 \leq t_P < 0$ | 0.382 | 2962 | 0.349 | 5957 | 0.033 | 0.53 |
| $-30 \leq t_P < 0$ | 0.417 | 2735 | 0.354 | 5538 | 0.063 | 0.85 |
| $-24 \leq t_P < 0$ | 0.442 | 2429 | 0.369 | 4977 | 0.074 | 0.96 |
| $-18 \leq t_P < 0$ | 0.451 | 2050 | 0.370 | 4232 | 0.081 | 1.00 |
| $-12 \leq t_P < 0$ | 0.426 | 1548 | 0.379 | 3218 | 0.047 | 0.54 |
| $-6 \leq t_P < 0$ | 0.316 | 882 | 0.341 | 1823 | -0.025 | -0.25 |

*Notes*: This table reports results of tests for differences in means for (abnormal) returns between treated funds and non-treated matched control funds prior to pregnancy. The construction of the matched sample is described in Section 4.3. Standard errors are clustered at the fund level. *, **, and ***, indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Table 5—MATCHED-SAMPLE DIFFERENCE-IN-DIFFERENCES ANALYSES ON FUND PERFORMANCE AROUND CHILDBIRTH

| | Raw Return | | | Abnormal Return | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Pregnancy ($0 \leq t_P < 9$) × Treated | -0.237*** | -0.245*** | -0.243*** | -0.176** | -0.181** | -0.187** |
| | (0.082) | (0.088) | (0.089) | (0.076) | (0.083) | (0.084) |
| Post Maternity Leave ($0 < t_{PM} \leq 6$) × Treated | -0.201* | -0.219* | -0.220* | -0.161 | -0.190 | -0.194 |
| | (0.121) | (0.128) | (0.128) | (0.107) | (0.121) | (0.121) |
| Post Maternity Leave ($6 < t_{PM} \leq 12$) × Treated | -0.038 | -0.055 | -0.056 | -0.098 | -0.145 | -0.150 |
| | (0.162) | (0.190) | (0.190) | (0.153) | (0.180) | (0.181) |
| Post Maternity Leave ($12 < t_{PM} \leq 36$) × Treated | 0.004 | 0.044 | 0.049 | 0.012 | 0.009 | 0.007 |
| | (0.101) | (0.110) | (0.111) | (0.098) | (0.105) | (0.107) |
| Treated | 0.080** | | | 0.088** | | |
| | (0.041) | | | (0.043) | | |
| Controls | Yes | Yes | Yes | Yes | Yes | Yes |
| Month-by-Cohort FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Manager FE | No | Yes | Yes | No | Yes | Yes |
| Fund FE | No | No | Yes | No | No | Yes |
| N | 17369 | 17369 | 17369 | 17209 | 17209 | 17209 |
| $R^2$ | 0.673 | 0.672 | 0.656 | 0.322 | 0.327 | 0.294 |

*Notes*: This table reports coefficients from matched sample difference-in-differences analyses on fund performance around childbirth. Fund performance metrics analyzed include raw monthly returns and monthly abnormal returns. Abnormal returns are calculated using a combined factor model that includes an equity market factor and a bond market factor. The factor loadings are estimated over the last 36 months. Both return measures are expressed in percent. Each fund in the treatment group is matched with two control funds. The matching procedure is presented in Section 4.3. *Treated* is an indicator variable that takes a value of one if the fund manager becomes a mother during the sample period. *Pregnancy* ($0 \leq t_P < 9$) refers to the months between becoming pregnant and the start of maternity leave, and lasts a maximum of 9 months. *Post Maternity Leave* ($0 < t_{PM} \leq 6$), *Post Maternity Leave* ($6 < t_{PM} \leq 12$), and *Post Maternity Leave* ($12 < t_{PM} \leq 36$) are indicators for the sub-periods after returning from maternity leave. We include the same control variables as in Table 3. Standard errors clustered at the fund level are reported in parentheses. *, **, and ***, indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Table 6—FUND PERFORMANCE AROUND CHILDBIRTH SORTED BY MANAGER BUSYNESS

| | Raw Return | | | Abnormal Return | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| **Panel A: #funds > p50** | | | | | | |
| Pregnancy ($0 \leq t_P < 9$) | -0.538*** | -0.591*** | -0.556*** | -0.294*** | -0.366*** | -0.323*** |
| | (0.155) | (0.166) | (0.167) | (0.110) | (0.118) | (0.118) |
| Post Maternity Leave ($0 < t_{PM} \leq 6$) | -0.155 | -0.351** | -0.291* | -0.188* | -0.346*** | -0.266** |
| | (0.160) | (0.162) | (0.160) | (0.114) | (0.108) | (0.109) |
| Post Maternity Leave ($6 < t_{PM} \leq 12$) | 0.426** | 0.210 | 0.286 | 0.230* | 0.103 | 0.202 |
| | (0.189) | (0.208) | (0.207) | (0.132) | (0.161) | (0.162) |
| Post Maternity Leave ($12 < t_{PM} \leq 36$) | -0.111 | -0.207 | -0.101 | -0.077 | -0.128 | 0.002 |
| | (0.155) | (0.181) | (0.176) | (0.112) | (0.104) | (0.106) |
| Controls | Yes | Yes | Yes | Yes | Yes | Yes |
| Month FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Fund FE | No | Yes | Yes | No | Yes | Yes |
| Manager FE | No | No | Yes | No | No | Yes |
| N | 290096 | 289776 | 289739 | 286500 | 286418 | 286389 |
| $R^2$ | 0.439 | 0.440 | 0.444 | 0.166 | 0.170 | 0.176 |
| **Panel B: #funds < p50** | | | | | | |
| Pregnancy ($0 \leq t_P < 9$) | -0.011 | -0.002 | 0.014 | -0.162 | -0.115 | -0.078 |
| | (0.184) | (0.210) | (0.212) | (0.137) | (0.148) | (0.149) |
| Post Maternity Leave ($0 < t_{PM} \leq 6$) | -0.136 | -0.082 | -0.040 | -0.183 | -0.065 | 0.013 |
| | (0.205) | (0.224) | (0.227) | (0.162) | (0.172) | (0.173) |
| Post Maternity Leave ($6 < t_{PM} \leq 12$) | 0.256 | 0.338 | 0.388 | 0.095 | 0.219 | 0.313 |
| | (0.256) | (0.301) | (0.301) | (0.234) | (0.284) | (0.286) |
| Post Maternity Leave ($12 < t_{PM} \leq 36$) | 0.332 | 0.481* | 0.550* | -0.224 | -0.069 | 0.052 |
| | (0.232) | (0.290) | (0.297) | (0.184) | (0.214) | (0.213) |
| Controls | Yes | Yes | Yes | Yes | Yes | Yes |
| Month FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Fund FE | No | Yes | Yes | No | Yes | Yes |
| Manager FE | No | No | Yes | No | No | Yes |
| N | 288305 | 287987 | 287950 | 284712 | 284630 | 284601 |
| $R^2$ | 0.443 | 0.443 | 0.447 | 0.167 | 0.172 | 0.178 |

*Notes*: This table reports coefficients from multivariate regressions of fund performance around childbirth after sorting treated managers by the number of funds they manage. The results are estimated on the full fund sample. Fund performance metrics analyzed include raw monthly returns and monthly abnormal returns. Abnormal returns are computed based on a combined factor model which includes a stock market factor and a bond market factor. The factor loadings are estimated over the last 36 months. Both return measures are expressed in percent. The independent variables include five indicator variables which represent different time periods. *Before* refers to the 36 months before becoming pregnant and is omitted from the regression. *Pregnancy* ($0 \leq t_P < 9$) refers to the months between becoming pregnant and the start of maternity leave, and lasts a maximum of 9 months. *Post Maternity Leave* ($0 < t_{PM} \leq 6$), *Post Maternity Leave* ($6 < t_{PM} \leq 12$), and *Post Maternity Leave* ($12 < t_{PM} \leq 36$) are indicators for the sub-periods after returning from maternity leave. We include the same controls as in Table 3. Panel A reports results for managers with above-median busyness, while Panel B reports results for managers with below-median busyness. Standard errors clustered at the fund level are reported in parentheses. *, **, and ***, indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Table 7—FUND RISK AND MARKET FACTOR HUGGING AROUND CHILDBIRTH

| **Panel A: (Idiosyncratic) Risk** | Total Risk | | | Idiosyncratic Risk | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Pregnancy ($0 \leq t_P < 9$) | -0.172 | -0.158* | -0.162* | -0.196*** | -0.146*** | -0.141*** |
| | (0.107) | (0.088) | (0.089) | (0.067) | (0.053) | (0.053) |
| Post Maternity Leave ($0 < t_{PM} \leq 6$) | 0.018 | -0.051 | -0.059 | -0.094 | -0.124* | -0.115 |
| | (0.141) | (0.120) | (0.121) | (0.098) | (0.071) | (0.071) |
| Post Maternity Leave ($6 < t_{PM} \leq 12$) | 0.194 | 0.067 | 0.058 | 0.060 | -0.064 | -0.052 |
| | (0.162) | (0.137) | (0.138) | (0.116) | (0.090) | (0.090) |
| Post Maternity Leave ($12 < t_{PM} \leq 36$) | -0.030 | -0.035 | -0.042 | -0.031 | -0.123 | -0.105 |
| | (0.195) | (0.131) | (0.132) | (0.147) | (0.113) | (0.114) |
| Controls | Yes | Yes | Yes | Yes | Yes | Yes |
| Month FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Fund FE | No | Yes | Yes | No | Yes | Yes |
| Manager FE | No | No | Yes | No | No | Yes |
| N | 295636 | 295546 | 295894 | 269756 | 269570 | 269732 |
| $R^2$ | 0.611 | 0.818 | 0.837 | 0.458 | 0.753 | 0.792 |
| **Panel B: Market Factor Hugging** | Non-Market Variation | | | $\beta_{Market}$ | | |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Pregnancy ($0 \leq t_P < 9$) | -0.028** | -0.049*** | -0.047*** | -0.008 | 0.017 | 0.014 |
| | (0.013) | (0.013) | (0.013) | (0.075) | (0.077) | (0.077) |
| Post Maternity Leave ($0 < t_{PM} \leq 6$) | -0.008 | -0.041** | -0.038** | -0.047 | 0.004 | 0.000 |
| | (0.019) | (0.018) | (0.018) | (0.121) | (0.124) | (0.125) |
| Post Maternity Leave ($6 < t_{PM} \leq 12$) | -0.007 | -0.044** | -0.039* | -0.010 | 0.011 | 0.003 |
| | (0.021) | (0.020) | (0.020) | (0.133) | (0.132) | (0.133) |
| Post Maternity Leave ($12 < t_{PM} \leq 36$) | 0.016 | -0.028 | -0.023 | 0.011 | 0.042 | 0.032 |
| | (0.020) | (0.020) | (0.021) | (0.088) | (0.098) | (0.100) |
| Controls | Yes | Yes | Yes | Yes | Yes | Yes |
| Month FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Fund FE | No | Yes | Yes | No | Yes | Yes |
| Manager FE | No | No | Yes | No | No | Yes |
| N | 269751 | 269565 | 269727 | 269756 | 269570 | 269732 |
| $R^2$ | 0.302 | 0.523 | 0.563 | 0.141 | 0.150 | 0.151 |

*Notes*: This table reports coefficients from multivariate regressions of (idiosyncratic) fund risk and market factor hugging around childbirth. The results are estimated on the full fund sample. Risk metrics analyzed in Panel A include total risk and idiosyncratic risk. *Total Risk* is the standard deviation of fund returns within a month, annualized by multiplying the square root of $252/12$. *Idiosyncratic Risk* is the standard deviation of the residuals from the regression of daily fund returns on the combined market factor model within a month, annualized by multiplying the square root of $252/12$. Both measures are expressed in percent. Market factor hugging metrics analyzed in Panel B include non-market variation and market beta. *Non-Market Variation* is calculated as one minus the $R^2$ from the regression of fund excess returns on the combined market factor model within a month. $\beta_{Market}$ is the sum of the coefficients on the market factors from the regression of daily fund returns on the combined market factor model within a month. The independent variables include five indicator variables which represent different time periods. *Before* refers to the 36 months before becoming pregnant and is omitted from the regression. *Pregnancy* ($0 \leq t_P < 9$) refers to the months between becoming pregnant and the start of maternity leave, and lasts a maximum of 9 months. *Post Maternity Leave* ($0 < t_{PM} \leq 6$), *Post Maternity Leave* ($6 < t_{PM} \leq 12$), and *Post Maternity Leave* ($12 < t_{PM} \leq 36$) are indicators for the sub-periods after returning from maternity leave. We include the same controls as in Table 3. *, **, and ***, indicate statistical significance at the $10\%$, $5\%$, and $1\%$ level, respectively.

Table 8—FREQUENCY OF COMPANY VISITS AROUND CHILDBIRTH

| | On-Site Visits | | Online Visits | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| **Panel A: 2012 – 2022** | | | | |
| Pregnancy ($0 \leq t_P < 9$) | -0.067*** | -0.058** | -0.089** | -0.081* |
| | (0.023) | (0.025) | (0.036) | (0.042) |
| Post Maternity Leave ($0 < t_{PM} \leq 6$) | -0.040 | -0.019 | -0.046 | -0.099 |
| | (0.033) | (0.031) | (0.081) | (0.087) |
| Post Maternity Leave ($6 < t_{PM} \leq 12$) | -0.088*** | -0.058* | -0.090 | -0.129 |
| | (0.027) | (0.032) | (0.087) | (0.085) |
| Post Maternity Leave ($12 < t_{PM} \leq 36$) | -0.063** | -0.022 | -0.013 | -0.045 |
| | (0.027) | (0.033) | (0.100) | (0.119) |
| Controls | Yes | Yes | Yes | Yes |
| Month FE | Yes | Yes | Yes | Yes |
| Manager FE | No | Yes | No | Yes |
| N | 124254 | 123941 | 124254 | 123941 |
| $R^2$ | 0.050 | 0.167 | 0.104 | 0.265 |
| **Panel B: 2012 – 2019** | | | | |
| Pregnancy ($0 \leq t_P < 9$) | -0.088*** | -0.077** | 0.007 | 0.011 |
| | (0.027) | (0.032) | (0.010) | (0.010) |
| Post Maternity Leave ($0 < t_{PM} \leq 6$) | -0.074** | -0.044 | -0.010 | -0.006 |
| | (0.033) | (0.042) | (0.013) | (0.013) |
| Post Maternity Leave ($6 < t_{PM} \leq 12$) | -0.115*** | -0.081** | -0.003 | 0.003 |
| | (0.033) | (0.040) | (0.020) | (0.021) |
| Post Maternity Leave ($12 < t_{PM} \leq 36$) | -0.068* | -0.043 | 0.020 | 0.031 |
| | (0.037) | (0.049) | (0.026) | (0.032) |
| Controls | Yes | Yes | Yes | Yes |
| Month FE | Yes | Yes | Yes | Yes |
| Manager FE | No | Yes | No | Yes |
| N | 72592 | 72350 | 72592 | 72350 |
| $R^2$ | 0.054 | 0.173 | 0.022 | 0.112 |

*Notes*: This table reports coefficients from multivariate regressions of fund managers' company visits around childbirth. We aggregate our fund-manager panel to the manager level and estimate an equivalent to the multivariate panel regression in Equation 4 on the full manager panel. The dependent variables, *On-site visits* and *Online visits*, are the number of times a manager visits listed companies on-site and online within one month in columns, respectively. An event is categorized as an online visit if the meeting takes place via a digital method (email, phone, websites, apps or online meeting rooms). Panel A includes all observations from July 2012 (when the company visit data starts) to the end of our sample period, while Panel B excludes the Covid years. The independent variables include five indicator variables which represent different time periods. *Before* refers to the 36 months before becoming pregnant and is omitted from the regression. *Pregnancy* ($0 \leq t_P < 9$) refers to the months between becoming pregnant and the start of maternity leave, and lasts a maximum of 9 months. *Post Maternity Leave* ($0 < t_{PM} \leq 6$), *Post Maternity Leave* ($6 < t_{PM} \leq 12$), and *Post Maternity Leave* ($12 < t_{PM} \leq 36$) are indicators for the sub-periods after returning from maternity leave. We include the same controls as in Table 3. *, **, and ***, indicate statistical significance at the $10\%$, $5\%$, and $1\%$ level, respectively.

# Online Appendix to:
# Productivity Changes around Childbrith - Evidence from the Mutual Fund Industry

March 15, 2024

*- Not for Publication -*

Table A1—DESCRIPTION OF VARIABLES

| Variable Name | Description |
|---|---|
| Fund Size | Total net asset under management in millions at the end of a month. |
| Fund Age | Fund age in years at the end of a month. |
| Fund Flows | Quarterly fund flows. |
| Raw Return | A fund's raw monthly return. |
| Abnormal Return | Abnormal returns are calculated using a combined factor model that includes an equity market factor and a bond market factor. The factor loadings are estimated over the last 36 months. |
| Treated | Indicator variable equal to 1 if the fund manager becomes a mother during our sample period. |
| Pregnancy ($0 \leq t_P < 9$) | Period spanning the months between becoming pregnant and the start of maternity leave. |
| Post Maternity Leave ($0 < t_{PM} \leq 6$) | Period spanning the first six months after returning from maternity leave. |
| Post Maternity Leave ($6 < t_{PM} \leq 12$) | Period between the sixth and twelfth month after returning from maternity leave. |
| Post Maternity Leave ($12 < t_{PM} \leq 36$) | Period between the twelfth and thirty-sixth month after returning from maternity leave. |
| Total Risk | Standard deviation of fund returns within a month, annualized by multiplying the square root of $252/12$. |
| Idiosyncratic Risk | Standard deviation of the residuals from the regression of daily fund returns on the combined market factor model within a month, annualized by multiplying the square root of $252/12$. Both measures are expressed in percent. |
| $\beta_{Market}$ | Sum of the coefficients on the market factors from the regression of daily fund returns on the combined market factor model within a month. |
| Non-Market Variation | One minus the $R^2$ from the regression of fund excess returns on the combined market factor model within a month. |

| Variable Name | Description |
|---|---|
| Manager Age | Manager age in years. In cases where the birth year of a manager is not disclosed, we infer this information based on managers' career paths and educational backgrounds. In China, it is customary for students to complete high school around the age of 18. Typically, obtaining a Bachelor's degree requires four years of study. Therefore, if a manager has a Bachelor's degree only, we assume that the manager is aged 22 at the point of entering the fund industry for the first time. Before the year 2005, obtaining a Master's degree usually required three years of study. However, after 2005, many universities introduced two-year profession-oriented Master's programs and three-year academia-oriented programs. Initially, the proportion of two-year Master's degrees was relatively small but became dominant as of 2010. Therefore, if the manager obtained a PhD (Master's degree only) before 2014 (2010), we assume an age of 29 (25) at the point of entering the fund industry. If the PhD (Master's degree) was obtained after 2014 (2010), we assume that the manager is 28 (24) at the time of entering the mutual fund industry. |
| Manager Tenure | Tenure of a fund's manager in years. |
| Manager has PhD | Indicator variable equal to one if manager's highest degree is a PhD degree. |
| Manager has Master's only | Indicator variable equal to one if manager's highest degree is a master's degree. |
| Manager has Bachelor's only | Indicator variable equal to one if manager's highest degree is a master's degree. |
| Bond Fund | Indicator variable equal to 1 for bond funds. |
| Equity Fund | Indicator variable equal to 1 for equity funds |
| Hybrid Fund | Indicator variable equal to 1 for hybrid funds. |
| # Funds | The number of funds that are single-managed under management in a month. |
| Onsite Visits | The number of onsite company visits in a month. |
| Online Visits | The number of online company visits in a month. |

| Variable Name | Description |
|---|---|
| Leadership Position | Dummy variable that is equal to 1 if a manager holds a leadership position in the fund firm, and 0 otherwise. Seven types of leadership positions include director of the board, a position in the committee of the investment strategy, a position in the committee of the supervisory board, Executives or Vice Executives, Chief economists or other technological leaders, a leadership position in the Communist Party of China, and other management positions. |
| # Leadership Positions | The number of leadership positions a fund manager holds in the fund firms. One manager can hold up to five leadership positions in our sample. |

Table A2—FUND DESCRIPTIVE STATISTICS BY FUND TYPE

| **Panel A: Equity Funds** | All Funds ($N = 32,694$) | Female Funds ($N = 4,776$) | Male Funds ($N = 27,918$) | Difference | t-stat |
|---|---|---|---|---|---|
| Fund size (in millions) | 1317.264 | 1116.253 | 1351.169 | -234.917 | -1.37 |
| Fund age | 3.891 | 3.673 | 3.928 | -0.255 | -0.87 |
| Fund flows (in %) | 5.534 | 4.915 | 5.638 | -0.723 | -0.38 |
| Raw return (in %) | 0.829 | 0.657 | 0.858 | -0.201* | -1.93 |
| Abnormal return (in %) | 0.599 | 0.458 | 0.623 | -0.165** | -2.05 |
| Total risk (in %) | 6.361 | 6.212 | 6.386 | -0.174 | -1.42 |
| Idiosyncratic risk (in %) | 3.039 | 3.094 | 3.030 | 0.064 | 0.49 |
| $\beta_{Market}$ | 0.994 | 0.962 | 1.000 | -0.037 | -0.46 |
| Manager age | 36.870 | 36.957 | 36.855 | 0.102 | 0.25 |
| Manager tenure | 2.145 | 2.013 | 2.168 | -0.155 | -1.22 |
| Manager has PhD | 0.145 | 0.146 | 0.145 | 0.000 | 0.01 |
| Manager has master's only | 0.834 | 0.853 | 0.831 | 0.022 | 0.66 |
| Manager has bachelor's only | 0.020 | 0.001 | 0.024 | -0.023*** | -3.45 |
| **Panel B: Hybrid Funds** | All Funds ($N = 196,008$) | Female Funds ($N = 31,825$) | Male Funds ($N = 164,183$) | Difference | t-stat |
| Fund size (in millions) | 1398.171 | 1058.950 | 1462.916 | -403.965*** | -5.81 |
| Fund age | 4.545 | 4.543 | 4.545 | -0.002 | -0.01 |
| Fund flows (in %) | 5.156 | 5.011 | 5.184 | -0.172 | -0.20 |
| Raw return (in %) | 0.739 | 0.611 | 0.764 | -0.153*** | -4.25 |
| Abnormal return (in %) | 0.515 | 0.446 | 0.529 | -0.083*** | -3.48 |
| Total risk (in %) | 5.156 | 4.502 | 5.282 | -0.780*** | -9.16 |
| Idiosyncratic risk (in %) | 2.603 | 2.282 | 2.665 | -0.383*** | -7.74 |
| $\beta_{Market}$ | 0.900 | 0.782 | 0.923 | -0.141*** | -5.26 |
| Manager age | 37.214 | 37.468 | 37.165 | 0.303* | 1.82 |
| Manager tenure | 2.036 | 1.971 | 2.048 | -0.077 | -1.3 |
| Manager has PhD | 0.128 | 0.077 | 0.138 | -0.061*** | -5.37 |
| Manager has master's only | 0.843 | 0.890 | 0.834 | 0.056*** | 4.32 |
| Manager has bachelor's only | 0.028 | 0.033 | 0.027 | 0.006 | 0.81 |

Table A2 – *cont'd*

| **Panel C: Bond Funds** | All Funds ($N = 115,528$) | Female Funds ($N = 37,756$) | Male Funds ($N = 77,772$) | Difference | t-stat |
|---|---|---|---|---|---|
| Fund size (in millions) | 1709.825 | 1779.352 | 1676.564 | 102.788 | 1.10 |
| Fund age | 3.377 | 3.320 | 3.404 | -0.084 | -0.69 |
| Fund flows (in %) | 16.152 | 15.280 | 16.569 | -1.289 | -1.08 |
| Raw return (in %) | 0.364 | 0.343 | 0.374 | -0.031*** | -3.35 |
| Abnormal return (in %) | 0.155 | 0.149 | 0.158 | -0.009 | -1.38 |
| Total risk (in %) | 0.664 | 0.529 | 0.729 | -0.200*** | -5.91 |
| Idiosyncratic risk (in %) | 0.381 | 0.302 | 0.418 | -0.116*** | -5.92 |
| $\beta_{Market}$ | 0.597 | 0.561 | 0.614 | -0.053*** | -3.38 |
| Manager age | 35.498 | 35.883 | 35.311 | 0.572*** | 3.27 |
| Manager tenure | 1.879 | 1.992 | 1.824 | 0.168*** | 2.22 |
| Manager has PhD | 0.062 | 0.022 | 0.081 | -0.059*** | -8.46 |
| Manager has master's only | 0.878 | 0.939 | 0.848 | 0.091*** | 8.92 |
| Manager has bachelor's only | 0.060 | 0.039 | 0.070 | -0.032*** | -4.08 |

*Notes*: This table reports gender differences in fund and manager characteristics by fund type for all observations entering our baseline regressions. All variables are defined in detail in the Appendix. Panel A reports differences between the average characteristics of female- and male-managed funds for equity funds, while panels B and C report the same for hybrid and bond funds, respectively. The respective number of fund-month observations is displayed in the column header in parentheses. The sample includes all single-managed bond, equity, and hybrid funds between January 2008 and December 2022. Significance is calculated based on a two-sided t-test with standard errors clustered at the fund level. *, **, and ***, indicate statistical significance at the $10\%$, $5\%$, and $1\%$ level, respectively.

Table A3—MULTIVARIATE PANEL REGRESSIONS ON PERFORMANCE AROUND PREGNANCY

| **Panel A: Only Treatment Funds** | Raw Return | | | Abnormal Return | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Pregnancy ($0 \leq t_P < 9$) | -0.263** | -0.376** | -0.376** | -0.169* | -0.248* | -0.248* |
| | (0.114) | (0.179) | (0.181) | (0.086) | (0.130) | (0.131) |
| Log(Fund Size) | 0.039* | 0.058 | 0.058 | 0.033** | 0.022 | 0.022 |
| | (0.023) | (0.064) | (0.065) | (0.016) | (0.041) | (0.041) |
| Fund Age | 0.035** | | | 0.005 | | |
| | (0.015) | | | (0.011) | | |
| Equity Fund | 0.784*** | | | 0.687*** | | |
| | (0.201) | | | (0.142) | | |
| Hybrid Fund | 0.543*** | | | 0.439*** | | |
| | (0.097) | | | (0.074) | | |
| Manager Age | -0.001 | | | -0.008 | | |
| | (0.011) | | | (0.008) | | |
| Manager has PhD | 0.182 | | | -0.023 | | |
| | (0.217) | | | (0.161) | | |
| Month FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Fund FE | No | Yes | Yes | No | Yes | Yes |
| Manager FE | No | No | Yes | No | No | Yes |
| N | 4753 | 4751 | 4751 | 4693 | 4692 | 4692 |
| $R^2$ | 0.306 | 0.303 | 0.288 | 0.173 | 0.183 | 0.165 |

Table A3 – *cont'd*

| **Panel B: All Funds** | Raw Return | | | Abnormal Return | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Pregnancy ($0 \leq t_P < 9$) | -0.262** | -0.313** | -0.285** | -0.226** | -0.285*** | -0.247** |
| | (0.126) | (0.140) | (0.141) | (0.091) | (0.103) | (0.103) |
| Treated | 0.045 | | | 0.078* | | |
| | (0.058) | | | (0.045) | | |
| Log(Fund Size) | 0.044*** | 0.051*** | 0.036*** | 0.036*** | 0.013** | -0.001 |
| | (0.004) | (0.008) | (0.009) | (0.003) | (0.006) | (0.006) |
| Fund Age | 0.017*** | | | 0.003* | | |
| | (0.002) | | | (0.002) | | |
| Equity Fund | 0.805*** | | | 0.557*** | | |
| | (0.025) | | | (0.021) | | |
| Hybrid Fund | 0.707*** | | | 0.448*** | | |
| | (0.014) | | | (0.011) | | |
| Manager Age | -0.008*** | -0.013*** | | -0.008*** | -0.015*** | |
| | (0.002) | (0.003) | | (0.001) | (0.002) | |
| Manager has PhD | 0.008 | 0.066 | | 0.009 | 0.073** | |
| | (0.024) | (0.042) | | (0.020) | (0.034) | |
| Month FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Fund FE | No | Yes | Yes | No | Yes | Yes |
| Manager FE | No | No | Yes | No | No | Yes |
| N | 295267 | 294948 | 295289 | 291575 | 291495 | 291835 |
| $R^2$ | 0.457 | 0.458 | 0.462 | 0.184 | 0.189 | 0.195 |

*Notes*: This table reports coefficients from multivariate regressions of fund performance around childbirth. Fund performance metrics analyzed include raw monthly returns and monthly abnormal returns. Abnormal returns are calculated using a combined factor model that includes an equity market factor and a bond market factor. The factor loadings are estimated over the last 36 months. Both return measures are expressed in percent. The independent variables include two indicator variables which represent different time periods. *Before* refers to the 36 months before becoming pregnant and is omitted from the regression. *Post Becoming Pregnant* ($0 \leq t_P < 9$) refers to the period that spans the months from becoming pregnant to the beginning of maternity leave. *Treated* is an indicator variable that takes a value of one if the fund manager becomes a mother during the sample period. The other independent variables are described in Appendix Table A1. Panel A reports results for the group of treatment funds, while Panel B reports results for all funds. Standard errors clustered at the fund level are reported in parentheses. *, **, and ***, indicate statistical significance at the $10\%$, $5\%$, and $1\%$ level, respectively.

Table A4—MULTIVARIATE PANEL REGRESSIONS ON PERFORMANCE AROUND MATERNITY

| **Panel A: Only Treatment Funds** | Raw Return | | | Abnormal Return | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Post Maternity Leave ($0 < t_{PM} \leq 6$) | -0.187 | -0.426* | -0.426* | -0.168* | -0.241 | -0.241 |
| | (0.132) | (0.234) | (0.236) | (0.099) | (0.169) | (0.171) |
| Post Maternity Leave ($6 < t_{PM} \leq 12$) | 0.224 | -0.024 | -0.024 | 0.123 | 0.037 | 0.037 |
| | (0.171) | (0.304) | (0.306) | (0.127) | (0.231) | (0.232) |
| Post Maternity Leave($12 < t_{PM} \leq 36$) | 0.038 | -0.188 | -0.188 | -0.111 | -0.199 | -0.199 |
| | (0.154) | (0.356) | (0.359) | (0.116) | (0.268) | (0.271) |
| Log(Fund Size) | 0.107*** | 0.134*** | 0.134*** | 0.092*** | 0.074** | 0.074** |
| | (0.027) | (0.047) | (0.048) | (0.024) | (0.033) | (0.033) |
| Fund Age | 0.064*** | | | 0.031** | | |
| | (0.015) | | | (0.012) | | |
| Equity Fund | 1.254*** | | | 0.887*** | | |
| | (0.226) | | | (0.153) | | |
| Hybrid Fund | 0.635*** | | | 0.392*** | | |
| | (0.107) | | | (0.090) | | |
| Manager Age | 0.027* | | | 0.012 | | |
| | (0.015) | | | (0.012) | | |
| Manager has PhD | -0.096 | | | 0.044 | | |
| | (0.164) | | | (0.207) | | |
| Month FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Fund FE | No | Yes | Yes | No | Yes | Yes |
| Manager FE | No | No | Yes | No | No | Yes |
| N | 5736 | 5733 | 5733 | 5679 | 5677 | 5677 |
| $R^2$ | 0.364 | 0.366 | 0.355 | 0.186 | 0.204 | 0.190 |

Table A4 – *cont'd*

| **Panel B: All Funds** | Raw Return | | | Abnormal Return | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Post Maternity Leave ($0 < t_{PM} \leq 6$) | -0.131 | -0.199 | -0.158 | -0.172* | -0.189* | -0.114 |
| | (0.129) | (0.137) | (0.137) | (0.095) | (0.097) | (0.098) |
| Post Maternity Leave ($6 < t_{PM} \leq 12$) | 0.348** | 0.283 | 0.333* | 0.190 | 0.152 | 0.244 |
| | (0.166) | (0.173) | (0.173) | (0.131) | (0.151) | (0.152) |
| Post Maternity Leave ($12 < t_{PM} \leq 36$) | 0.146 | 0.103 | 0.179 | -0.042 | -0.081 | 0.042 |
| | (0.148) | (0.165) | (0.166) | (0.108) | (0.118) | (0.119) |
| Treated | 0.045 | | | 0.078* | | |
| | (0.058) | | | (0.046) | | |
| Log(Fund Size) | 0.045*** | 0.052*** | 0.037*** | 0.037*** | 0.014** | 0.000 |
| | (0.004) | (0.008) | (0.009) | (0.003) | (0.006) | (0.006) |
| Fund Age | 0.018*** | | | 0.003** | | |
| | (0.002) | | | (0.002) | | |
| Equity Fund | 0.809*** | | | 0.559*** | | |
| | (0.025) | | | (0.022) | | |
| Hybrid Fund | 0.706*** | | | 0.446*** | | |
| | (0.014) | | | (0.011) | | |
| Manager Age | -0.008*** | -0.013*** | | -0.008*** | -0.015*** | |
| | (0.002) | (0.003) | | (0.001) | (0.002) | |
| Manager has PhD | 0.004 | 0.066 | | 0.008 | 0.073** | |
| | (0.024) | (0.042) | | (0.020) | (0.034) | |
| Month FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Fund FE | No | Yes | Yes | No | Yes | Yes |
| Manager FE | No | No | Yes | No | No | Yes |
| N | 296250 | 295930 | 296271 | 292561 | 292480 | 292820 |
| $R^2$ | 0.458 | 0.459 | 0.463 | 0.184 | 0.189 | 0.196 |

*Notes*: This table reports coefficients from multivariate regression analysis of fund performance around maternity events. Fund performance metrics analyzed include raw monthly returns and monthly abnormal returns. Abnormal returns are calculated using a combined factor model that includes an equity market factor and a bond market factor. The factor loadings are estimated over the last 36 months. Both return measures are expressed in percent. The independent variables include four indicator variables which represent different time periods. *Before* refers to the 36 months before becoming pregnant and is omitted from the regression. *Post Maternity Leave* ($0 < t_{PM} \leq 6$), *Post Maternity Leave* ($6 < t_{PM} \leq 12$), and *Post Maternity Leave* ($12 < t_{PM} \leq 36$) are indicators for the sub-periods after returning from maternity leave. *Treated* is an indicator variable that takes a value of one if the fund manager becomes a mother during the sample period. The other independent variables are described in Appendix Table A1. Panel A reports results for the group of treatment funds, while Panel B reports results for all funds. Standard errors clustered at the fund level are reported in parentheses. *, **, and ***, indicate statistical significance at the $10\%$, $5\%$, and $1\%$ level, respectively.

Table A5—MULTIVARIATE PANEL REGRESSIONS ON PERFORMANCE BASED ON MULTIFACTOR MODELS

| **Panel A: Only Treatment Funds** | FF3 Abnormal Return | | | CH3 Abnormal Return | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Pregnancy ($0 \leq t_P < 9$) | -0.090 | -0.172* | -0.172* | -0.149* | -0.230** | -0.230** |
| | (0.068) | (0.099) | (0.100) | (0.077) | (0.114) | (0.115) |
| Post Maternity Leave ($0 < t_{PM} \leq 6$) | -0.093 | -0.224* | -0.224* | -0.074 | -0.221 | -0.221 |
| | (0.083) | (0.126) | (0.126) | (0.109) | (0.153) | (0.154) |
| Post Maternity Leave ($6 < t_{PM} \leq 12$) | 0.139 | -0.023 | -0.023 | 0.180 | 0.038 | 0.038 |
| | (0.121) | (0.182) | (0.183) | (0.138) | (0.209) | (0.210) |
| Post Maternity Leave ($12 < t_{PM} \leq 36$) | -0.046 | -0.220 | -0.220 | -0.049 | -0.205 | -0.205 |
| | (0.086) | (0.182) | (0.183) | (0.114) | (0.219) | (0.221) |
| Log(Fund Size) | 0.056*** | 0.041* | 0.041* | 0.061*** | 0.038 | 0.038 |
| | (0.015) | (0.025) | (0.025) | (0.022) | (0.030) | (0.030) |
| Fund Age | 0.028*** | | | 0.043*** | | |
| | (0.009) | | | (0.011) | | |
| Equity Fund | 0.576*** | | | 1.031*** | | |
| | (0.107) | | | (0.152) | | |
| Hybrid Fund | 0.392*** | | | 0.614*** | | |
| | (0.061) | | | (0.081) | | |
| Manager Age | 0.004 | | | 0.009 | | |
| | (0.008) | | | (0.011) | | |
| Manager has PhD | 0.109 | | | 0.087 | | |
| | (0.166) | | | (0.237) | | |
| Month FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Fund FE | No | Yes | Yes | No | Yes | Yes |
| Manager FE | No | No | Yes | No | No | Yes |
| N | 7200 | 7199 | 7199 | 6882 | 6881 | 6881 |
| $R^2$ | 0.115 | 0.122 | 0.109 | 0.164 | 0.186 | 0.174 |

Table A5 – *cont'd*

| **Panel B: All Funds** | FF3 Abnormal Return | | | CH3 Abnormal Return | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Pregnancy ($0 \leq t_P < 9$) | -0.130* | -0.140* | -0.106 | -0.195** | -0.222** | -0.184** |
| | (0.070) | (0.076) | (0.076) | (0.081) | (0.087) | (0.088) |
| Post Maternity Leave ($0 < t_{PM} \leq 6$) | -0.102 | -0.135 | -0.069 | -0.074 | -0.163 | -0.086 |
| | (0.082) | (0.090) | (0.090) | (0.110) | (0.117) | (0.118) |
| Post Maternity Leave ($6 < t_{PM} \leq 12$) | 0.156 | 0.100 | 0.182 | 0.224 | 0.134 | 0.229 |
| | (0.126) | (0.139) | (0.140) | (0.141) | (0.151) | (0.152) |
| Post Maternity Leave ($12 < t_{PM} \leq 36$) | -0.033 | -0.070 | 0.039 | -0.038 | -0.138 | -0.011 |
| | (0.085) | (0.092) | (0.093) | (0.116) | (0.120) | (0.120) |
| Treated | 0.032 | | | 0.078* | | |
| | (0.037) | | | (0.047) | | |
| Log(Fund Size) | 0.035*** | 0.005 | -0.012** | 0.032*** | 0.004 | -0.017*** |
| | (0.003) | (0.005) | (0.005) | (0.004) | (0.007) | (0.006) |
| Fund Age | 0.007*** | | | 0.019*** | | |
| | (0.002) | | | (0.002) | | |
| Equity Fund | 0.590*** | | | 0.880*** | | |
| | (0.020) | | | (0.028) | | |
| Hybrid Fund | 0.476*** | | | 0.728*** | | |
| | (0.011) | | | (0.014) | | |
| Manager Age | -0.006*** | -0.013*** | | -0.010*** | -0.014*** | |
| | (0.001) | (0.002) | | (0.002) | (0.002) | |
| Manager has PhD | 0.080*** | 0.061* | | 0.024 | 0.075** | |
| | (0.029) | (0.032) | | (0.025) | (0.038) | |
| Month FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Fund FE | No | Yes | Yes | No | Yes | Yes |
| Manager FE | No | No | Yes | No | No | Yes |
| N | 292864 | 292780 | 293118 | 261614 | 261531 | 261847 |
| $R^2$ | 0.125 | 0.132 | 0.138 | 0.166 | 0.189 | 0.199 |

*Notes*: This table reports coefficients from multivariate regressions of fund performance around childbirth. Fund performance metrics analyzed include FF3 abnormal returns and CH3 abnormal returns. FF3 abnormal returns are calculated using a combined factor model that includes Chinese Fama French three factors and a bond market factor. CH3 abnormal returns are calculated using a combined factor model that includes Chinese three factors suggested by Liu, Stambaugh, and Yuan (2019) and a bond market factor. The factor loadings are estimated over the last 36 months. Both return measures are expressed in percent. The independent variables include five indicator variables which represent different time periods. *Before* refers to the 36 months before becoming pregnant and is omitted from the regression. *Pregnancy* ($0 \leq t_P < 9$) refers to the months between becoming pregnant and the start of maternity leave, and lasts a maximum of 9 months. *Post Maternity Leave* ($0 < t_{PM} \leq 6$), *Post Maternity Leave* ($6 < t \leq 12$), and *Post Maternity Leave* ($12 < t_{PM} \leq 36$) are indicators for the sub-periods after returning from maternity leave. *Treated* is an indicator variable that takes a value of one if the fund manager becomes a mother during the sample period. The other independent variables are described in Appendix Table A1. Panel A reports results for the group of treatment funds, while Panel B reports results for all funds. Standard errors clustered at the fund level are reported in parentheses. *, **, and ***, indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Table A6—MATCHED-SAMPLE DIFFERENCE-IN-DIFFERENCES ANALYSES ON FUND PERFORMANCE AROUND PREGNANCY

| | Raw Return | | | Abnormal Return | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Pregnancy ($0 \leq t_P < 9$) × Treated | -0.233*** | -0.245*** | -0.246*** | -0.166** | -0.184** | -0.192** |
| | (0.079) | (0.091) | (0.092) | (0.074) | (0.087) | (0.088) |
| Treated | 0.075* | | | 0.078* | | |
| | (0.039) | | | (0.043) | | |
| Controls | Yes | Yes | Yes | Yes | Yes | Yes |
| Month-by-Cohort FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Manager FE | No | Yes | Yes | No | Yes | Yes |
| Fund FE | No | No | Yes | No | No | Yes |
| Observations | 12065 | 12065 | 12065 | 11902 | 11902 | 11902 |
| $R^2$ | 0.649 | 0.648 | 0.622 | 0.306 | 0.316 | 0.266 |

*Notes*: This table reports coefficients from matched sample difference-in-differences analyses on fund performance around pregnancy events. Fund performance metrics analyzed include raw monthly returns and monthly abnormal returns. Abnormal returns are calculated using a combined factor model that includes an equity market factor and a bond market factor. The factor loadings are estimated over the last 36 months. Both return measures are expressed in percent. Each fund in the treatment group is matched with two control funds. The matching procedure is presented in Section 4.3. *Treated* is an indicator variable that takes a value of one if the fund manager becomes a mother during the sample period. *Pregnancy* ($0 \leq t_P < 9$) refers to the months between becoming pregnant and the start of maternity leave, and lasts a maximum of 9 months. Standard errors clustered at the fund level are reported in parentheses. *, **, and ***, indicate statistical significance at the $10\%$, $5\%$, and $1\%$ level, respectively.

Table A7—MATCHED-SAMPLE DIFFERENCE-IN-DIFFERENCES ANALYSES ON FUND PERFORMANCE AROUND MATERNITY

| | Raw Return | | | Abnormal Return | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Post Maternity Leave ($0 < t_{PM} \leq 6$) × Treated | -0.199 | -0.227 | -0.228 | -0.155 | -0.188 | -0.188 |
| | (0.122) | (0.140) | (0.141) | (0.109) | (0.136) | (0.137) |
| Post Maternity Leave ($6 < t_{PM} \leq 12$) × Treated | -0.038 | -0.076 | -0.079 | -0.094 | -0.152 | -0.157 |
| | (0.164) | (0.196) | (0.197) | (0.157) | (0.198) | (0.199) |
| Post Maternity Leave ($12 < t_{PM} \leq 36$) × Treated | 0.002 | 0.009 | 0.008 | 0.014 | -0.017 | -0.023 |
| | (0.101) | (0.115) | (0.117) | (0.098) | (0.121) | (0.123) |
| Treated | 0.075* | | | 0.078* | | |
| | (0.040) | | | (0.044) | | |
| Controls | Yes | Yes | Yes | Yes | Yes | Yes |
| Month-by-Cohort FE | Yes | Yes | Yes | No | Yes | Yes |
| Manager FE | No | Yes | Yes | No | Yes | Yes |
| Fund FE | No | No | Yes | No | No | Yes |
| Observations | 12838 | 12824 | 12823 | 12687 | 12678 | 12678 |
| $R^2$ | 0.684 | 0.682 | 0.661 | 0.331 | 0.339 | 0.295 |

*Notes*: This table reports coefficients from matched sample difference-in-differences analyses on fund performance around maternity events. Fund performance metrics analyzed include raw monthly returns and monthly abnormal returns. Abnormal returns are calculated using a combined factor model that includes an equity market factor and a bond market factor. The factor loadings are estimated over the last 36 months. Both return measures are expressed in percent. Each fund in the treatment group is matched with two control funds. The matching procedure is presented in Section 4.3. *Treated* is an indicator variable that takes a value of one if the fund manager becomes a mother during the sample period.*Post Maternity Leave* ($0 < t_{PM} \leq 6$), *Post Maternity Leave* ($6 < t_{PM} \leq 12$), and *Post Maternity Leave* ($12 < t_{PM} \leq 36$) are indicators for the sub-periods after returning from maternity leave. Standard errors clustered at the fund level are reported in parentheses. *, **, and ***, indicate statistical significance at the $10\%$, $5\%$, and $1\%$ level, respectively.

Table A8—INSTITUTIONAL FUND HOLDINGS AROUND CHILDBIRTH

| | Institutional Holdings | | | Inflows | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Pregnancy ($0 \leq t < 9$) | 8.499 | 6.668 | 5.875 | 0.067 | 0.043 | 0.060 |
| | (6.531) | (5.516) | (5.660) | (0.047) | (0.047) | (0.048) |
| Post Maternity Leave ($0 < t \leq 6$) | 8.114 | 3.615 | 2.302 | 0.133* | 0.076 | 0.099 |
| | (8.205) | (7.742) | (7.934) | (0.071) | (0.068) | (0.070) |
| Post Maternity Leave ($6 < t \leq 12$) | 2.132 | 0.596 | -1.045 | 0.147* | 0.049 | 0.070 |
| | (9.560) | (8.375) | (8.580) | (0.079) | (0.080) | (0.084) |
| Post Maternity Leave ($12 < t \leq 36$) | 7.875 | 9.197 | 7.568 | 0.081* | -0.003 | 0.027 |
| | (9.152) | (9.291) | (9.491) | (0.049) | (0.048) | (0.052) |
| Controls | Yes | Yes | Yes | Yes | Yes | Yes |
| Month FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Fund FE | No | Yes | Yes | No | Yes | Yes |
| Manager FE | No | No | Yes | No | No | Yes |
| N | 51919 | 50844 | 50616 | 290132 | 290060 | 290352 |
| $R^2$ | 0.321 | 0.798 | 0.835 | 0.031 | 0.130 | 0.164 |

*Notes*: This table reports the estimates of multivariate regression around childbirth on the holding of fund shares by institutional investors. The results are estimated on the full fund sample. In columns (1) to (3), the dependent variable *Institutional Holdings* is the proportion of fund shares held by institutional investors. This information is semi-annual and can be observed for the end of June and December, respectively. In columns (4) to (6), the dependent variable *Inflows* is the fund inflow into the funds. Again, observations in June and December are used in the analysis. *Pregnancy* ($0 \leq t_P < 9$) refers to the months between becoming pregnant and the start of maternity leave. *Post Maternity Leave* ($0 < t_{PM} \leq 6$), *Post Maternity Leave* ($6 < t_{PM} \leq 12$), and *Post Maternity Leave* ($12 < t_{PM} \leq 36$) are indicators for the sub-periods after returning from maternity leave. Standard errors clustered at the fund level are reported in parentheses. *, **, and ***, indicate statistical significance at the $10\%$, $5\%$, and $1\%$ level, respectively.