Does Mutual Fund Working Experience Affect Private Fund Performance?

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Abstract

We evaluate how prior mutual fund working experience affects private fund managers' performance. Using a novel Chinese private fund database from 2012 to 2016, we document significantly lower excess returns and higher left-tail risks for private fund managers with prior mutual fund working experience. Such effect is concentrated in switched managers with lower performance ranks in mutual funds. Additionally, the underperformance is attributable to reduced research support, change in investment styles, and deteriorated market timing skills, while incentive schemes help alleviate such underperformance. Our findings demonstrate the key role of industry-specific human capital in the asset management industry.

JEL Classification: G10, G11, G14

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1 Introduction

The impact of work experience on productivity has been extensively studied in research on human capital (e.g. Mincer, 1974; Becker, 1975). Research has found that investment performance is related to fund managers' characteristics such as age, educational level and undergraduate GPAs (Golec, 1996; Chevalier and Ellison, 1999a; Greenwood and Nagel, 2009; Li et al., 2011). A recent study of Cici et al. (2018), among others, shows that mutual fund managers exploit information advantage acquired while working in other industries before joining fund management, and allocate disproportional outperforming stocks from their experience industries. Similarly, Chen et al. (2018) document that managers who worked as industry analysts exhibit superior stock picking skills, while managers with a background as macroanalysts time the market better.

Although the economics literature suggests that industry-specific human capital might be transferrable (Neal, 1995), the experience gained from one industry may not have positive effect on the performance of fund managers under all circumstances. For instance, the underperformance of experienced hedge fund managers is found to be caused by their propensity to reduce risk, as they have concerns in personal wealth, current income, and reputation, should their funds fail (Boyson, 2003). Although research on mutual funds has documented an inverse relationship between manager changes and past fund performance (Khorana, 1996; Chevalier and Ellison, 1999b; Kostovetsky and Warner, 2015) and significant improvements (deteriorations) in post-replacement performance relative to the past performance for underperformers (overperformers) following mutual fund manager turnover (Khorana, 2001), we know little about how mutual fund manager turnover is

associated with their performance after switching to private funds.¹

In this paper we examine how private fund managers' prior mutual fund working experience affects their performance in private funds. Few studies in the literature have focused on private funds in emerging markets, since lack of data and a relatively short history make it hard to exploit this industry. As being covered by the news media, fund managers in China are reported to switch jobs frequently and in the last number of years many of them have moved from mutual funds to private funds. In fact, there are continuous waves of mutual fund manager turnover in China, the second largest economy in the world (Wang and Ko, 2017). The main reasons of the brain drain from mutual funds are said to be the lack of performance incentive schemes, too many regulations and unevenly distributed income. It has led to concerns about asset management companies' ability to retain key portfolio managers, as documented by Kostovetsky (2017).

As a result, we fill the gap in the literature by focusing on the burgeoning private fund industry in China from 2012–2016 to examine the performance of switched private fund managers with prior mutual fund working experience, and uncover the relationship between private fund performance and managers' mutual fund professional background with respect to their personal characteristics. To achieve this goal, we interact our primary explanatory variable, *Mutual Fund Experience*, with proxies for private fund managers' education level, leadership position, investment experience and job title. Moreover, in order to test performance persistence for the switched private fund managers, we sort them into quintile groups based on their performance ranks over their last two years in the mutual

¹In a related study, Deuskar et al. (2011) find that poor performers are more likely to leave the mutual fund industry and end up in hedge funds.

fund industry. Finally, to explore the channels through which private fund performance is affected, we test our postulated hypotheses that the performance of switched private fund managers is affected by the presence of managerial incentive schemes, as well as changes in research support, investment styles, and manager skills.

The incipient private fund industry in China has seen dynamic growth in the last few years. China's first equity index futures contract on the CSI300 index was launched in 2010, and this hedging instrument greatly spurred the rapid growth of the private fund industry. At the same time, the opaque regulatory environment has been improving, with relevant regulatory rules being introduced. The Securities Investment Fund Law, effective on June 1, 2013 and further amended in 2015, regulates and promotes the sound development of securities investment funds. The operations of private funds and private fund managers are under the oversight of the China Securities Regulatory Commission (CSRC) and the Asset Management Association of China (AMAC, a self-regulatory organization). According to AMAC, as of December 2018, the number of registerd private securities investment funds has reached 35,688 (and the number of private equity funds is 27,176, together with private securities investment funds they are all called private funds in China), while the number of mutual funds is only 5,626. Given the purpose of this paper is to focus on private securities investment funds with mangers that have prior mutual fund experience, we do not consider private equity funds but simply name private securities investment funds private funds.

Our novel Chinese private fund research database provides us with several advantages.

First, with detailed disclosure of fund manager demographics in both mutual funds and

²Private securities investment funds invest in secondary market seuctiries, and they resemble hedge funds.

private funds, we are able to identify a group of switched private fund managers with prior mutual fund working experience from the fund manager universe. The rich information available on these two industries also helps us attribute the performance of switched private fund managers to the observable differences across industries. Second, both mutual funds and private funds in China are characterized by the pervasive single portfolio manager platform, which is opposite to the dominant team management structure in the U.S. (Chen et al., 2018). Therefore, we are able to explore the effect of mutual fund working experience on subsequent private fund performance on an individual level. Finally, due to the recent launching of various hedging instruments and regulation changes, the large fraction of mutual fund manager turnover and waves of job switch from mutual funds to private funds make China a natural platform for exploring the importance of industry-specific human capital in the asset management industry.

We document several interesting findings about the private fund industry in China. Overall, our empirical results suggest that on average private fund managers with prior mutual fund working experience are associated with significantly lower excess returns and higher left-tail risks. It indicates that past professional experience in the mutual fund industry adds little, if any, positive value to the private fund performance in general. In particular, such negative effect is concentrated among switched private fund managers with poor mutual fund performance ranks. In other words, lower-ranked mutual fund managers are unable to incorporate their industry-specific human capital following a career change, while higher-ranked mutual fund managers still enjoy stellar fund performance after they move to the private fund industry. Furthermore, we find that the underperformance of

switched private fund managers are related to inadequate incentive schemes, reduced research support, change in investment styles, and diminished market timing abilities.

Our research contributes to the literature on fund manager turnover and performance in three important ways. First, to the best of our knowledge, this is the first empirical study on performance persistence of switched private fund managers in emerging markets. Research that examines how professional background in mutual funds impacts private fund performance is, however, still in its infancy and focuses mostly on the U.S. market. Chen et al. (2009) find that completely switched mutual fund managers are poor performers in hedge funds. Similarly, Deuskar et al. (2011) find that mutual funds in the U.S. can retain managers with good performance, while poor performing managers are forced to switch to hedge funds. They also find that complete switchers continue to perform poorly relative to other managers in hedge funds. Our evidence indicates that both best and worst performing mutual fund managers switch to private funds in China, and there is evidence of performance persistence among these managers.

Second, our paper contributes to the literature on the interactions between fund performance and managerial turnover along with manager demographics. Kostovetsky (2017) demonstrates that younger managers tend to move to better opportunities after gaining experience in the mutual fund industry, but they underperform older managers after switching to hedge funds. Our findings provide new insights into the role of manager demographics in the relationship between prior mutual fund working experience and private fund performance. Specifically, we show that the underperformance of private fund managers with mutual fund working experience is more pronounced for those who have Ph.D. degrees,

are in charge of the investment team, have longer investment careers, or used to be mutual fund managers.

Third, our study illustrates the linkage between incentive schemes and fund performance. Our finding that the underperformance of switched fund managers is less visible for private funds charging higher incentive fees suggests the importance of managerial incentive schemes in attracting the best minds from mutual funds. This finding has meaningful implications on the appropriate design of compensation packages for fund managers in the asset management industry.

The remainder of this paper proceeds as follows. Section 2 describes the sample and summary statistics. Section 3 reports our main empirical results. Section 4 identifies the drivers of the underperformance of switched private fund managers. Section 5 reports how switched private fund managers with different past performance records perform after switching to private funds. Section 6 reports a series of robustness checks and Section 7 concludes.

2 Sample and Variable Construction

2.1 Private Fund Sample

Our private fund sample starts with fund-month observations in China from 2012 to 2016. Our primary data source is Go-Goal Private Fund Database, a proprietary dataset provided by the Shanghai Suntime Information Technology Co., the leading private fund data vendor in China. The database contains comprehensive information about private funds, including company/fund identification, manager demographics, fund return/risk measures,

styles, net assets, fees, and asset allocations. Apart from the comprehensive coverage of private funds, managers and companies, another advantage of this dataset is that funds' performances are reported weekly or sometimes daily. As indicated earlier, we exclude from our sample venture capital and private equity funds. Therefore, our final sample leaves with us private funds that primarily invest in securities, such as stocks, fixed income products, and derivatives. These private funds can be classified into four groups: private securities investment funds, trusts, segregated accounts of mutual fund companies, and collective investment schemes of securities firms. Among them, the private securities investment funds resemble the traditional hedge funds in the U.S. market, and the segregated accounts and collective investment schemes are managed by either in-house asset management arms or subsidiaries of financial institutions. Our final sample includes 19,990 private funds.

2.2 Identifying Mutual Fund Working Experience

We identify private fund managers' prior mutual fund working experience in two steps. First, the Go-Goal Private Fund Database classifies private fund managers' professional background into several categories. We define that a private fund manager has prior mutual fund working experience if his/her professional background is reported as mutual funds. For those private fund managers with missing professional background information, in the second step we further match them with the CSMAR Mutual Fund Database, a major mutual fund data available through Princeton University Library and WRDS, to identify if they have ever worked in mutual funds before switching to private funds. The matching is based on name, gender, and educational level. We also require that the starting employment date of

private fund managers should be later than their ending employment date with the mutual fund companies.³

2.3 Summary Statistics

Altogether we identify 328 private fund managers with prior mutual fund working experience and the number of switched private fund managers accounts for 10%-20% of mutual fund managers each year. A glimpse into the employment of the switched private fund managers with prior mutual fund working experience is shown in Table 1. Panel A reports the number of managers from the top 10 former mutual fund employers in our sample with the largest number of switched fund managers. For example, Bosera Asset Management Co., Ltd. has 13 employees who later switched to the private fund industry. UBS SDIC Fund Management, China Asset Management, Huaan Fund Management and E Fund Management are also among the top 5 largest former mutual fund employers. It is noteworthy that the top 10 former mutual fund employers account for approximately 25% of the private fund managers identified as having mutual fund working experience in our sample. It suggests that a large proportion of switched private fund managers come from a few leading mutual fund companies. From Panel B, we can see that the distribution of private fund managers in private funds is less concentrated, as the top 10 private fund companies with the largest number of switched fund managers hire less than 10% of our private fund managers sample.

Summary statistics of managers and fund characteristics are presented in Table 2. Panel A reports the demographics of the switched private fund managers with prior mutual fund

working experience. About 5% of these private fund managers are female, suggesting that this is a male dominated industry. The majority of the switched private fund managers have master's degrees (64%), and 11% have Ph.D. degrees. In terms of job titles, 22% of the switched managers serve as the leaders of investment teams in private fund companies. The average number of funds under management by a typical manager is around 8, with a median of 2. Among all these switched private fund managers with prior mutual fund working experience, 62% of them are former mutual fund managers before switching to private funds. For these former mutual fund managers, they have an average tenure of 3 years in the last mutual fund company he/she worked for. The switched private fund managers have an average total length of professional investment experience of 9 years.

Panel B of Table 2 presents some key fund characteristics at the fund level. The average amount of registered (nominal) capital per fund is around 10.5 million RMB, while the average amount of AUM per fund is close to 96 million RMB in the sample period. The mean (median) fund age is 1.15 (1.00) years, which is quite unique and distinct from the much longer age of traditional hedge funds given the shorter history of private fund industry in China. Moreover, 56% of the sample private funds were registered with the AMAC. 22% of the funds have their clients' capital entrusted with a third party, which is usually a commercial bank. 23% of the sample funds are team managed at some times over the sample period. The mean (median) management fee and incentive fee are 0.8% (0.6%) and 32% (20%), respectively. Finally, the average volatility of monthly returns is 4%.

3 Mutual Fund Working Experience and Private Fund Performance

3.1 Univariate Analysis

We first conduct a simple univariate analysis to examine how mutual fund working experience is associated with private fund performance. Specifically, we sort all private funds into two groups based on whether they have managers with or without prior mutual fund working experience, then calculate the means and standard errors of the excess returns, and test whether the mean difference is statistically significant.

Table 3 reports the results of univariate tests. It can be seen that private fund managers with prior mutual fund working experience are on average associated with significant underperformance, measured by excess returns estimated from the multi-factor models. A 3-factor model includes MKT (market factor), SMB (size factor) and HML (value factor). A 4-factor model includes MKT, SMB, HML and UMD (momentum factor), which is essentially the Carhart four-factor model. A 5-factor model includes MKT, SMB, HML, RMW (profitability factor) and CMA (investment factor) proposed by Fama and French (2017). The results show that private funds managed by former mutual fund employees can underperform by nearly 28–41 basis points per month, and the mean difference is significant at the 1% level.

In terms of fund risks, following Liang and Park (2007), we focus on the left-tail risks measured by VaR, expected shortfall (ES) and downside risk estimated using a 24-month rolling window, respectively. Specifically, VaR is calculated as the 5th percentile of fund

excess returns over the past 24 months. ES is calculated as the average of fund returns below VaR over the past 24 months. Downside Risk is calculated as the semi-deviation of fund returns over the past 24 months, where the risk-free rate is the minimum acceptable return. The results for the mean difference in fund risks point out that private funds whose managers have mutual fund working experience exhibit higher left-tail risks, measured by VaR, ES, and $Downside\ Risk$. Note that both VaR and ES measure left-tail returns, thus fund risk is higher if these two measures are lower. The t-statistics suggest that the differences are all significant at the 1% level.

Overall, the simple univariate analysis shows that private funds which have managers with prior mutual fund working experience are associated with significantly lower excess returns and higher risks.

3.2 Private Fund Performance

We examine the relation between private fund managers' prior mutual fund working experience and private fund performance by estimating the following panel fixed-effects model.

$$Y_{i,s,t} = \beta Mutual Fund Experience_{i,t} + \gamma X_{i,t} + \delta_{s,t} + \epsilon_{i,t}$$
 (1)

where $Y_{i,s,t}$ is the performance measures of fund i with investment style s in month t. The main explanatory variable, Mutual Fund Experience, is a dummy variable that equals one if the private fund manager has prior mutual fund working experience and zero otherwise.

We further include several fund characteristics as control variables. Fund Age is the

number of months since the private fund's inception. Registered is a dummy variable that equals one if the private fund is registered with the AMAC and zero otherwise. Entrusted is a dummy variable that equals one if the private fund company has its clients' capital entrusted with a third-party, like a commercial bank and zero otherwise. To account for team management practice in private funds, we construct a dummy variable, Team-Managed which equals one if the private fund has multiple fund managers in month t and zero otherwise. In addition, we include in the regression the fund management fee rate, Management Fee, and performance-based incentive fee rate, Incentive Fee. Moreover, we control for private funds' overall risk by Volatility, calculated as the standard deviation of monthly returns over the past 12 months. Finally, we incorporate style-time fixed effects in all the regression specifications to account for heterogeneity across styles in each month.

Table 4 reports the baseline regression results where the fund performance measures are regressed on mutual fund working experience, controlling for other fund characteristics. In Columns (1)–(3) we find strong evidence that prior mutual fund working experience is negatively related to private fund excess returns. For instance, when the excess return is measured by 3-factor alpha in Column (1), the estimated coefficient of Mutual Fund Experience is -0.0033, with a t-statistic of -4.84, which suggests that private fund managers with mutual fund working experience on average underperform by 0.33% on monthly basis, or 4.0% per annum. In Column (2), the estimated coefficient of Mutual Fund Experience is larger in magnitude: -0.0023 (t-statistic=-3.79), when alpha is estimated from the 4-factor model. Column (3) also shows a negative correlation (-0.0029 with a t-statistic of -4.39) between mutual fund working experience and private fund excess returns when alpha

is estimated from the 5-factor model after controlling for other variables.

The results for the effect of mutual fund working experience on fund risks are presented in Columns (4)–(6) in Table 4. The dependent variables, VaR, ES, and Downside Risk, are risk measures commonly used in hedge fund studies. We find that switched private fund managers with prior mutual fund working experience tend to exhibit significantly higher left-tail risks. The coefficient of Mutual Fund Experience is negative in Column (4), which is statistically significant at the 1% level. That is, the group of private funds having managers with prior mutual fund working experience tends to exhibit lower VaR, measured by fund returns at the 5^{th} percentile, compared with the group of funds that have private fund managers without prior mutual fund working experience. Consistent with the result in Column (4), Column (5) also shows that funds that have private fund managers with prior mutual fund working experience are associated with higher level left-tail risks. Finally, Column (6) demonstrates that mutual fund working experience is positively correlated with the semi-deviation of fund returns, indicating that the portfolios of switched private fund managers with prior mutual fund working experience are susceptible to downside risk. Taken together, our findings suggest that switched private fund managers are prone to expose the funds to a higher level of left-tail risks.

The results of the control variables in Table 4 are overall consistent with prior studies. We find that fund excess returns increase in incentive fee, but decrease in management fee. On the other hand, we find higher fees help mitigate extreme left-tail risks. However, the overall risk, Volatility, indicates that funds with higher volatilities are associated with more left-tail risks.

Next, we examine how private fund managers' prior mutual fund working experience affects private funds' performance when we take into consideration their personal background, such as education, leadership position, investment experience, and job title. Table 5 reports the relevant results. In Column (1), the variable of interest, Mutual Fund Experience is interacted with PhD, which equals one if the private fund manager has a Ph.D. degree and zero otherwise. The coefficient of this interaction term Mutual Fund Experience×PhD, is negative and significant at the 1% level (t-statistic=-4.69). It suggests that the underperformance of switched private fund managers is stronger for those with the highest educational degree. To test whether leadership hierarchy plays a role in affecting private fund performance, we interact Mutual Fund Experience with a dummy variable Leader, which equals one if the private fund manager is the leader of the investment team in private fund companies and zero otherwise. The coefficient of the interaction term Mutual Fund Experience×Leader indicates a deteriorating performance for higher-ranked investment managers with prior mutual fund working experience.

In addition, we examine how investment experience measured by years of investment career, affects fund performance. In Column (3) we create an interaction term between Mutual Fund Experience and Long Years of Invt., where the dummy variable, Long Years of Invt., equals one if the private fund manager has above-median years of investment career and zero otherwise. The result indicates that the negative association between mutual fund experience and private fund excess returns is exacerbated due to a longer investment career. Our findings are not surprising, given that these fund managers are perceived to have more at stake, such as reputation and authoritativenesss, should they fail. Similar evidence is

found for U.S. hedge funds where experienced hedge fund managers have lower returns (Liang, 1999; Edwards and Caglayan, 2001). Lastly, in Column (4) we demonstrate that the underperformance is concentrated among private fund managers whose job roles were not portfolio managers when they used to work in mutual fund companies.

4 Why Do Switched Mutual Fund Managers Underperform?

In this section we examine the potential driving factors for the underperformance of switched private fund managers with prior mutual fund working experience.

4.1 Managerial Incentive Schemes

First, we would like to test the role of managerial incentive schemes in affecting the relationship between prior mutual fund working experience and private fund excess returns. The private fund industry is characterized by its adoption of unique incentive scheme that is absent in mutual funds. For instance, the revenue of mutual fund companies mainly comes from management fees that are directly related to the size of assets under management. Mutual fund companies usually do not charge investors performance-based incentive fees, while many private fund companies charge incentive fees which are dependent on fund performance. The incentive fees have been used to manipulate hedge funds' attractiveness toward investors through fee revisions to control fund size as well as performance erosion and maintain outperformance (Nagy and Guidotti, 2012). Therefore, private fund managers face distinct incentive schemes from mutual funds, as there are indirect incentives as well as direct incentives in the fund (Lim et al., 2016). Private funds charge performance-based incentive

⁴Elton et al. (2003) studied a small sample of mutual funds with incentive fees.

fess, and the managerial compensation is also dependent on their performance. Given the existence of managerial incentive schemes in the private fund industry, we hypothesize that managerial incentive schemes play a positive role in affecting the performance of switched fund managers, and it will mitigate the negative effect of mutual fund working experience on private fund performance.

To test this hypothesis, in Column (1) of Table 6 we interact our explanatory variable, Mutual Fund Experience, with Incentive Fee which is the performance-based fee rate charged to investors. Consistent with our expectation, Column (1) shows that the interaction term Mutual Fund Experience×Incentive Fee has a positive coefficient with a t-statistic of 2.37, which is significant at the 5% level. The incentive fee is also positively correlated with fund excess returns, as the coefficient of Incentive Fee is positive and statistically significant at the 5% level. The findings imply that the underperformance of switched fund managers is less visible for private funds charging higher incentive fees. Our evidence is consistent with the previous findings in the literature that hedge funds that offer higher managerial incentives are associated with higher excess returns (Liang, 1999; Edwards and Caglayan, 2001; Agarwal et al., 2004). The result also suggests that the presence of performance incentive schemes help alleviate the underperformance of switched private fund managers. Moreover, our finding complements the related studies by demonstrating the positive effect of managerial incentives on future performance of fund managers after their career changes.

4.2 Mutual Fund Research Support

We further investigate how mutual fund research support plays a role in affecting the underperformance of switched private fund managers. Mutual fund managers benefit from extensive investment research support, either internally from in-house research division or externally from brokerage firms through soft-dollar arrangements. The research teams or sell-side analysts provide investment recommendations of a list of securities based on the firm fundamentals and their professional judgement. Mutual fund managers, in turn, make the investment decisions by trading on the list of recommended securities. In contrast to mutual funds, private funds in China are characterized by smaller firm size with fewer employees and less internal or external research support. Taking into consideration the reduced research support, we hypothesize that switched private fund managers may be in a position to experience underperformance since they used to have much better research support in mutual fund companies.

To explore this possible explanation, we come up with a proxy to capture the potential varying levels of research support. In Column (2) of Table 6 we interact the primary explanatory variable *Mutual Fund Experience* with *High Transaction Fee*, which is a dummy variable that equals one if the switched fund manager has ever served in mutual funds with above-median transaction fee rate over the last two years before departure and zero otherwise, where the transaction fee rate is calculated as the total transaction fee over revenue. The transaction fee paid by mutual fund companies to securities firms are actually the commission fee for using the exchange seat of the securities firm to carry out the stock trading. Securities firms usually in turn provide analyst reports or other forms of research support to mutual

fund companies. In a sense, the rate of transaction fee can be regarded as a proxy for mutual fund research support. We find that the interaction term *Mutual Fund Experience*×*High Transaction Fee* is negative and significant at the 1% level, suggesting that switched private fund managers with reduced research support tend to have worse fund performance.

The results in Columns (2) are consistent with the conjecture that switched private fund managers with prior mutual fund working experience suffer in their performance because of less research support from private fund companies. The estimated coefficients of the interaction terms in these two columns are both negative and statistically significant. This indicates that it is plausible that reduced research support in investment decision making process for private funds is another possible contributing factor to the underperformance of switched private fund managers.

4.3 Change in Investment Style

Next, we investigate the possibility that changing investment styles after career transition affects the relationship between mutual fund working experience and private fund performance. The reason is that the switched private fund managers may not have the necessary skills to manage portfolios with different investment styles from their prior investment styles in mutual funds. This is especially true in China where the private fund industy has just started and managers have no prior experience in shorting, leveraging, and trading derivatives. Mutual funds typically use long-only strategy, allocating portfolio holdings to certain industries or sectors with more weights to reflect the fund investment style. In contrast, private funds are subject to much less regulation and public scrutiny. As a result,

private fund managers have much more freedom in choosing trading strategies such as longonly, long-short, market neutral, and so on. The use of futures and other derivatives also make it more difficult for a former mutual fund employee to apply prior investment skills in private fund investment. As a consequence, we hypothesize that switched private fund managers managing private funds with different investment styles from the ones of their previous mutual funds are associated with lower fund excess returns.

To test this hypothesis, in Column (3) of Table 6 we interact the primary explanatory variable, $Mutual\ Fund\ Experience$, with $Different\ Style$ which is a dummy variable that equals one if the switched fund manager has ever served in mutual funds which have different investment styles from the ones in private funds and zero otherwise. Specifically, if the private funds' investment style descriptions contain keywords like hedging, trend, market neutral, long-short, or if the private funds primarily invest in derivatives, then the private funds are denoted as having different investment styles from mutual funds. The result in Column (4) provides support to the argument that a change in investment style after a career transition is another potential driver of underperformance for switched private fund managers. The estimated coefficient of the interaction term $Mutual\ Fund\ Experience \times Different\ Style$ is negative with a t-statistic of -4.38. The negative and significant coefficient suggests that switched private fund managers may suffer inferior fund performance due to difference in investment styles between mutual funds and private funds. The finding also demonstrates the importance of familiarity with the skills necessary to perform job duties as private fund managers.

4.4 Change in Market Timing Skills

In this subsection we test whether the underperformance of switched private fund managers with prior mutual fund working experience is due to impaired market timing skills. Past studies document mixed evidence concerning the market timing abilities for U.S. hedge fund managers (Chen and Liang, 2007; Osinga et al., 2017; Griffin and Xu, 2009). Chen and Liang (2007) report evidence of market timing ability to time the U.S. equity market for a sample of 221 self-described market timing hedge funds during 1994–2005, though Griffin and Xu (2009) raise questions about the perceived superior skill of hedge fund managers, and they find only weak evidence of differential ability between hedge funds.

Following Treynor and Mazuy (1966), Henriksson and Merton (1981), and Chen et al. (2018), we estimate the market timing abilities of both mutual fund and private fund managers using the following models.

TM model

$$r_{i,t} = \alpha_i + \beta_{i,1} M k t_t + \beta_{i,2} M k t_t^2 + \epsilon_{i,t}$$
(2)

HM model

$$r_{i,t} = \alpha_i + \beta_{i,1} Mkt_t + \beta_{i,2} Max(Mkt_t, 0) + \epsilon_{i,t}$$
(3)

where $r_{i,t}$ is the excess return of fund i in month t, Mkt_t is the market excess return in month t, and $Max(Mkt_t, 0)$ takes the positive part of market excess returns. To estimate the market timing skills for both mutual fund and private fund managers, we incorporate risk factors of SMB, HML and UMD in the baseline model, and SMB, HML, RMW and CMA in the extended model. Both the TM and HM models are estimated for each fund-manager pair

separately over the entire tenure. The estimated coefficient $\beta_{i,2}$ denotes the market timing skills.

For private fund managers with positive pre-switch market timing skills, we compare their market timing skills before and after the career change. Table 7 presents the results. We find a significant decrease in their market timing ability. The average market timing skill measured by the coefficient of Mkt_t^2 in the baseline TM model, is 0.8283 in the pre-switch period with a standard error of 0.0665. The market timing skill in the post-switch period is reduced to 0.3111 with a standard error of 0.0465. The test of mean difference shows a t-statistic of 3.03, indicating that private fund managers suffer significantly lower market timing skills after switching from mutual funds to the private fund industry. In Column (2), the average market timing skill measured by the extended TM model decreases significantly (t-statistic=3.03), suggesting that their market timing skills deteriorate after switching to private funds. Furthermore, we find that the findings are robust to the alternative HM model, as Columns (3) and (4) show that the results remain qualitatively similar.

Therefore, the finding suggests that switched private fund managers fail to incorporate their market timing ability into private fund investment practice. The inability to transfer investment skills across different industries can be attributable to the fact that mutual funds are playing a different game from that of private funds.

5 Further Discussions: Good Experience vs. Bad Experience

In order to examine if private fund performance is related to switched private fund managers' performance records in mutual funds, we sort them into quintile groups based on their relative performance ranks within the same investment style over the last two years before quitting the mutual fund industry. Specifically, Q1 denotes the lowest performance quintile, and Q5 denotes the highest performance quintile. We re-estimate Equation (1) by replacing the variable $Mutual\ Fund\ Experience$ with five quintile group dummies Q1-Q5, along with other fund characteristics.

Table 8 reports the results. In Column (1)–(3), the estimated coefficients of Q1, Q2, Q3 and Q4 are mostly significantly negative, which implies that switched private fund managers with inferior performance in mutual funds are associated with lower private fund excess returns. In contrast, those switched private fund managers with the highest performance record, represented by the quintile group Q5, perform better than average private fund managers. The estimated coefficients of Q5 is positive and significant at the 5% level across three models. Moreover, the difference between the estimated coefficients Q5 and Q1 is significant in Columns (1)–(3), suggesting outperformance of top-ranked mutual fund managers after switching to the private fund industry. Thus, there is evidence of performance persistence among both past winners and losers.

The results for fund risks are presented in Columns (4)–(6) of Table 8. The coefficients of Q1, Q2, Q3 and Q4 are negative in Columns (4) and (5) and positive in Column (6), all are statistically significant at the 1% level, suggesting that funds that have switched private fund managers tend to experience significantly higher left-tail risks, as measured by VaR and expected shortfall. Such effect also exists among the top performing quintile group of switched private fund managers, as indicted by the significant coefficient of Q5 for the first two risk measures. However, the estimated coefficient of Q5 is insignificant for downside

risk, suggesting that highest-ranked private fund managers do not exhibit significantly higher downside risk.

Overall, the results in Table 8 suggest that the underperformance of private fund managers with prior mutual fund working experience is mainly driven by those with inferior performance in the mutual fund industry. They also tend to subject the private funds they manage to a greater extent of left-tail risks and extreme portfolio losses.

Finally, we examine how market timing skills of switched private fund managers in different quintile groups change after switching to the private funds. Again we sort them into quintile groups based on their relative performance ranks within the same investment style over the last two years before switching to private fund industry. The results are presented in Table 9. We restrict our sample to fund managers with positive market timing skills in the pre-switch period. We find that for lower-ranked switched private fund managers, their market timing skills decrease significantly after joining private funds. Specifically, for the lowest-ranked fund managers, their average market timing skills, estimated from the TM model, decrease from 1.1009 to -0.3486 in the baseline model, and the mean difference is statistically significant that the 1% level. Similarly, we find a significant reduction of market timing skills for fund managers in groups Q2, Q3 and Q4, and the results are not sensitive to the estimation models. However, we find that highest-ranked private fund managers in group Q5 do not suffer from reduced market timing skills found among lower-ranked private fund managers. In other words, they still exhibit comparable market timing skills after their career transition, suggesting that they are able to maintain investment skills in the new investment profession.

6 Robustness Checks

6.1 Asset Management Products

In the baseline regression we include in our sample four types of private funds primarily investing in securities: namely private securities investment funds, trusts, segregated accounts of mutual fund companies, and collective investment schemes of securities firms. These asset management products share distinct features in risk, managerial compensation, and organizational structure. For example, segregated accounts and collective investment schemes are operated by divisions or subsidiaries of financial institutions, whereas private securities investment funds are managed by private fund companies that mainly provide asset management advisory service, and they resemble their hedge fund counterparts in developed markets.

As a robustness test, we further examine whether the negative effect of mutual fund working experience on private fund performance can be found for each type of asset management product. Columns (1)–(4) of Table 10 report the results for segregated accounts, trusts, collective investment schemes, and private securities investment funds, respectively. We find that private fund managers with prior mutual fund working experience are associated with significantly lower fund excess returns for all types of private funds except trusts. Hence, the negative association between mutual fund working experience and private fund returns is found in asset management products offered by mutual fund companies, securities firms and private securities investment funds.

6.2 Alternative Professional Background

In our empirical investigation by this point, we have been focusing on private fund managers with prior mutual fund working experience, aiming to examine the performance of private funds run by these switched managers following their departure from the mutual fund industry. If the transition to the less regulated private fund industry from a more regulated industry leads to inferior fund performance, we suspect that a similar negative association may be present for private fund managers with alternative professional background. The Go-Goal Private Fund Database provides historical employment information (e.g. mutual funds, private funds, freelance, overseas, futures firms, and securities firms) for a large fraction of private fund managers. Therefore, in this subsection we test whether a career change necessarily leads to private fund underperformance by examining the performance of switched private fund managers with alternative professional backgrounds.

Table 11 presents the effects of private fund managers' alternative professional working experience on fund performance. In Columns (1)–(5), Professional Background is a dummy variable that equals one if the private fund manager's prior professional background is reported as private funds, freelance, overseas, futures firms and securities firms, respectively. Unlike our earlier results, the main explanatory variable Professional Background is positive and statistically modestly significant for private fund managers whose professional background is reported as private funds, overseas or securities firms, and the effect is significant at the 10% level. The results in Table 11 suggest that private fund managers with alternative professional backgrounds do not deliver inferior excess returns after switching to the private fund industry. In other words, a career change does not necessarily leads to

underperformance in the private fund industry. Therefore, the underperformance of switched private fund managers with prior mutual fund working experience is not likely to be driven by coincidence.

6.3 Heckman Selection Model

Another robustness check is related to possible self-selection issue. Presumably, topranked managers in mutual funds with excellent track records may switch to the private fund industry by choice. This is because their past superior performance can attract media coverage and receive professional recognition, increasing the probability of being lured away by private fund companies. Meanwhile, top-ranked mutual fund managers themselves may be enticed by better compensation and incentive schemes offered by the private fund industry. To alleviate such concern, we run a Heckman two-stage regression to address the potential sample selection bias. Specifically, in the first-stage probit regression, a dummy variable, Switch that equals one if the private fund manager switches to a private fund in month t and zero otherwise, is regressed on Female, Ph.D., Leader, and Super City (a dummy variable that equals one if the private fund company is located in Beijing, Shanghai or Shenzhen, the top three richest cities in China and zero otherwise), and other fund characteristics. The dummy variable Super City represents the preferred locations of private fund companies, where most of the financial institutions are domiciled. We postulate that if a private fund company is located in Beijing, Shanghai or Shenzhen, it is easier to attract talented people from mutual funds, leading to a higher probability of job switching. In the second stage, the Inverse Mills Ratio from the first stage is included in the panel regression.

Table 12 presents the Heckman two-stage regression results. In the first-stage regression, we find that the probability for a private fund manager to switch from mutual funds to private funds increases when private fund companies are located in the super cities. This is consistent with our expectation that more prosperous cities are better able to attract talents from mutual funds. In addition, fund managers with higher degree levels and who are investment team leaders are more likely to have mutual funds working experience in our sample period. However, female mutual fund managers are associated with significantly lower probability of switching to private funds. In the second stage, we include the inverse Mills ratio in the regression to address the potential sample selection bias. The results in models (2)–(3) show that mutual fund working experience still has negative effects on private fund excess returns. The coefficient of Mutual Fund Experience is significant in the second stage, and the economic magnitude is around -0.28% in monthly returns, which is comparable with that in Table 4. The inverse Mills ratio is insignificant across specifications, suggesting that there is no remarkable sample selection bias for our switched private fund manager sample.

Overall, our findings suggest that mutual fund working experience has significantly negative effect on fund performance when the sample selection bias is properly addressed.

6.4 Additional Robustness Checks

Lastly, we conduct additional robustness checks with sub-periods and alternative model specifications. During our sample period the Chinese stock market witnessed a dramatic crash in June 2015, with the CSI 300 index plunging almost 2,000 points in one month,

increased market volatility and a liquidity crisis for most of the stocks. Therefore, we divide our sample into pre- and post-crash periods to further examine the effect of mutual fund working experience on private fund performance in each sub-sample. Columns (1) and (2) of Table 13 present the results of sub-period analyses. Both columns reveal a negative relation between mutual fund working experience and private fund excess returns, but the negative effect is only significant at the 1% level during the post-crash period. The result indicates that the switched private fund managers underperform over the sample period, and their performance is even worse after the turmoil of the Chinese stock market.

Previous studies have found a strong relation between fund size and fund performance, especially in the mutual fund industry (Chen et al., 2004; Elton et al., 2012; Tang et al., 2012). However, unlike the mutual fund industry, private funds are not obliged to disclose fund net assets on a regular basis. To address the potential omitted variable bias resulting from the absence of fund size, we construct three alternative fund size proxies, including $Ln(Employees\ Per\ Fund)$ which is defined as the log of total number of firm employees scaled by the number of funds, $Ln(Capital\ Per\ Fund)$, the log of firm capital over the number of funds, and $Ln(AUM\ Per\ Fund)$ calculated as log of asset under management over the number of funds.

Columns (3)–(5) of Table 13 report the regression results after controlling for fund size proxies. The variable of interest, *Mutual Fund Experience*, has an negative effect on fund performance when the fund size proxies are included in the regression. This suggests that switched private fund managers are associated with lower monthly excess returns, and the economic magnitude is statistically significant at the 1% level. The fund size proxy, *AUM*

Per Fund is positive and significant, indicating that fund performance increase with fund size. This results in Columns (3)–(5) demonstrate that our main findings remain intact after controlling for fund size.

7 Conclusion

Over the past decade, fund manager turnover from mutual fund companies to private fund industry has received wide attention in the media in China along with the fast growth in the private fund industry. Some high-profile star mutual fund managers resigned and joined private fund companies since 2012 when the private fund industry started to take off. However, there is a lack of empirical examination on the relationship between private fund managers' prior mutual fund working experience and their performance in the private fund industry.

Using a novel Chinese private fund research database, we find that private fund managers with prior mutual fund working experience are associated with significantly lower fund excess returns and higher left-tail risks on average. Such deteriorating effect is concentrated on switched private fund managers with past inferior performance in mutual funds. The evidence to some extent suggests performance persistence following career transition. Moreover, the negative effect of mutual fund working experience on fund performance is stronger for switched private fund managers with Ph.D. degrees, higher management positions, and longer professional careers, who have more at stake, such as reputation and authoritativenesss, should they fail.

Furthermore, we find that the underperformance of switched private fund managers can

be explained by reduced research support, change in investment styles and deteriorated market timing skills. However, evidence shows that the underperformance of switched private fund managers is less visible for those private funds charging higher incentive fees. Therefore, our finding suggests that managerial incentive schemes are important in reallocation of investment talents across funds. Our results remain intact when possible sample selection bias is addressed, sub-samples are examined, and fund size is controlled for. Overall, we highlight the significant role of industry-specific human capital in affecting fund performance in the asset management industry.

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Table 1: Employment of Fund Managers

This table reports the employment of private fund managers with prior mutual fund working experience in our sample from 2012–2016. A private fund manager is identified as having prior mutual fund working experience if he(she) has ever served as fund managers or other job positions in the mutual fund company. Panel A reports the top 10 former mutual fund employers and the number of managers from each company. Panel B reports the top 10 private fund companies and the number of managers from each company.

| Fund Companies | Num. of Managers |
|--|------------------|
| Panel A: Mutual Fund Company | |
| (1) Bosera Asset Management Co., Ltd | 13 |
| (2) UBS SDIC Fund Management Co., Ltd | 10 |
| (3) China Asset Management Co., Ltd | 10 |
| (4) Huaan Fund Management Co., Ltd | 10 |
| (5) E Fund Management Co., Ltd | 10 |
| (6) Dacheng Fund Management Co.,Ltd | 11 |
| (7) CPIC Fund Management Co., Ltd | 7 |
| (8) Changsheng Fund Management Co., Ltd | 6 |
| (9) Rongtong Fund Management Co., Ltd | 6 |
| (10) Baoying Fund Management Co., Ltd | 6 |
| Panel B: Private Fund Company | |
| (1) Perseverance Asset Management Co., Ltd. | 4 |
| (2) Win Share Asset Management Co., Ltd. | 4 |
| (3) Bodao Investment Management Co., Ltd. | 4 |
| (4) Springs Capital Limited | 3 |
| (5) Hanxin Assets Management Co., Ltd. | 3 |
| (6) Etock Capital Management Co., Ltd. | 3 |
| (7) JU Capital Corporation | 3 |
| (8) Zion Investment Management Co., Ltd. | 3 |
| (9) Million Ton Capital Management Co., Ltd. | 3 |
| (10) Licheng Asset Management Co., Ltd. | 3 |

Table 2: Summary Statistics

This table reports summary statistics of manager and fund characteristics. Panel A presents demographics of private fund managers who have prior mutual fund working experience in our sample from 2012-2016. Female is a dummy variable that equals one if the private fund manager is female and zero otherwise. PhD is a dummy variable that equals one if the private fund manager has a Ph.D. degree and zero otherwise. Master is a dummy variable that equals one if the private fund manager has a master's degree and zero otherwise. Leader is a dummy variable that equals one if the private fund manager is the leader of the investment team in private fund companies and zero otherwise. Number of Funds is the number of funds managed by the private fund manager. MF Manager is a dummy variable that equals one if the private fund manager has ever served as mutual fund manager and zero otherwise. MF Tenure is the number of years as fund managers in the company before leaving the mutual fund industry. Years of Investment is the manager's years of experience in the investment profession. Panel B reports the descriptive statistics for private funds in our sample from 2012–2016. Mutual Fund Experience is a dummy variable that equals one if the private fund manager has prior mutual fund working experience and zero otherwise. Capital Per Fund is the registered capital per fund in million RMB. AUM Per Fund is the assets under management per fund in million RMB. Fund Age is the number of years since the fund's inception. Registered is a dummy variable that equals one if the private fund is registered with the AMAC and zero otherwise. Entrusted is a dummy variable that equals one if the private fund company has its clients' capital entrusted with a third-party, like a commercial bank and zero otherwise. Team-Managed is a dummy variable that equals one if the private fund has multiple fund managers in month t and zero otherwise. Management Fee is the management fee rate in percentage term. Incentive Fee is the incentive fee rate in percentage term. Volatility is calculated as the standard deviation of monthly returns over the past 12 months.

| Panel A: Manager Characteristics | | | | | | |
|----------------------------------|-------|--------|------|--------|-------|--------|
| | Mean | S.D. | Q25 | Median | Q75 | N |
| Female | 0.05 | 0.22 | 0.00 | 0.00 | 0.00 | 328 |
| PhD | 0.11 | 0.32 | 0.00 | 0.00 | 0.00 | 328 |
| Master | 0.64 | 0.48 | 0.00 | 1.00 | 1.00 | 328 |
| Leader | 0.22 | 0.41 | 0.00 | 0.00 | 0.00 | 328 |
| Number of Funds | 8.54 | 21.44 | 1.00 | 2.00 | 6.50 | 328 |
| MF Manager | 0.62 | 0.49 | 0.00 | 1.00 | 1.00 | 328 |
| MF Tenure | 3.03 | 2.00 | 1.53 | 2.43 | 3.91 | 204 |
| Years of Investment | 9.22 | 4.20 | 6.98 | 10.66 | 11.45 | 328 |
| Panel B: Fund Characteristics | | | | | | |
| | Mean | S.D. | Q25 | Median | Q75 | N |
| Mutual Fund Experience | 0.16 | 0.36 | 0.00 | 0.00 | 0.00 | 19,990 |
| Capital Per Fund (Million) | 10.53 | 45.10 | 0.53 | 2.45 | 9.84 | 19,248 |
| AUM Per Fund (Million) | 95.96 | 580.58 | 8.70 | 27.45 | 60.98 | 12,203 |
| Fund Age | 1.15 | 0.91 | 0.42 | 1.00 | 1.67 | 19,759 |
| Registered | 0.56 | 0.50 | 0.00 | 1.00 | 1.00 | 19,990 |
| Entrusted | 0.22 | 0.41 | 0.00 | 0.00 | 0.00 | 19,990 |
| Team-Managed | 0.23 | 0.42 | 0.00 | 0.00 | 0.00 | 19,990 |
| Management Fee % | 0.80 | 0.70 | 0.25 | 0.60 | 1.22 | 11,586 |
| Incentive Fee % | 32.34 | 39.81 | 0.00 | 20.00 | 60.00 | 9,821 |
| Volatility % | 4.01 | 4.16 | 0.36 | 2.49 | 6.76 | 13,841 |

Table 3: Univariate Test

This table reports mean excess return and risk measures for private funds managed by fund managers with or without prior mutual fund working experience. The sample period is from 2012–2016. In Columns (1)–(3) the alpha of fund i in month t is calculated from multi-factor models using a 12-month rolling window. The 3-factor model includes MKT, SMB and HML. The 4-factor model includes MKT, SMB, HML and UMD. The 5-factor model includes MKT, SMB, HML, RMW and CMA proposed by Fama and French (2017). In Columns (4)–(6) VaR, expected shortfall and downside risk are estimated using a 24-month rolling window, respectively. VAR is calculated as the 5th percentile of fund i's returns over the past 24 months. ES is calculated as the average fund i's returns below VaR over the past 24 months. $Downside\ Risk$ is calculated as the semi-deviation of fund i's returns over the past 24 months, where the minimum acceptable return is the risk-free rate. Standard errors are reported in the parentheses, and the robust t-statistics clustered by fund and time for the mean difference tests are reported in brackets.

| | | Alpha | | | Risk | | |
|------------------------|-----------|-----------|-----------|-----------|-----------|---------------|--|
| Mutual Fund Experience | (1) | (2) | (3) | (4) | (5) | (6) | |
| | 3-Factor | 4-Factor | 5-Factor | VaR | ES | Downside Risk | |
| Experience=0 | 0.0020 | 0.0027 | 0.0021 | -0.0621 | -0.0705 | 0.0228 | |
| | (0.0001) | (0.0001) | (0.0001) | (0.0002) | (0.0002) | (0.0001) | |
| Experience=1 | -0.0020 | -0.0001 | -0.0017 | -0.0843 | -0.0972 | 0.0307 | |
| | (0.0001) | (0.0001) | (0.0001) | (0.0005) | (0.0005) | (0.0002) | |
| Mean Difference | 0.0041*** | 0.0028*** | 0.0038*** | 0.0222*** | 0.0268*** | -0.0079*** | |
| | [5.32] | [4.63] | [5.23] | [8.10] | [9.35] | [-8.21] | |

Table 4: Mutual Fund Working Experience and Private Fund Performance

This table presents the effect of private fund managers' prior mutual fund working experience on private funds' excess returns and left-tail risks. The sample consists of fund-month observations for private funds in China from 2012–2016. The dependent variables in Columns (1)–(3) are the alpha of fund i with investment style s in month t, calculated from multi-factor models using a 12-month rolling window. The 3-factor model includes MKT, SMB and HML. The 4-factor model includes MKT, SMB, HML and UMD. The 5-factor model includes MKT, SMB, HML, RMW and CMA proposed by Fama and French (2017). The dependent variables in Columns (4)-(6) are VaR, expected shortfall and downside risk estimated using a 24-month rolling window, respectively. VaR is calculated as the 5th percentile of fund i's returns over the past 24 months. ES is calculated as the average fund i's returns below VaR over the past 24 months. Downside Risk is calculated as the semi-deviation of fund i's returns over the past 24 months, where the minimum acceptable return is risk-free rate. The main explanatory variable Mutual Fund Experience is a dummy variable that equals one if the private fund manager has prior mutual fund working experience and zero otherwise. Other control variables include Fund Age, Registered (equals one if the private fund is registered with the AMAC and zero otherwise), Entrusted (equals one if the private fund company has its clients' capital entrusted with a thirdparty, like a commercial bank and zero otherwise), Team-Managed (equals one if the private fund has multiple fund managers in month t and zero otherwise), Management Fee, Incentive Fee, and Volatility (standard deviation of monthly returns over the past 12 months). All regressions include style-time fixed effects. The robust t-statistics clustered by fund and time are reported in parentheses. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

| | | Alpha | | | Risk | |
|---|----------------------|--|----------------------|----------------------|-----------------------|-----------------------|
| | (1) 3-Factor | (2) 4-Factor | (3) 5-Factor | (4) VaR | (5) ES | (6) Downside Risk |
| Mutual Fund Experience | -0.0033*** | -0.0023*** | -0.0029*** | -0.0092*** | -0.0122*** | 0.0032*** |
| Fund Age | (-4.84) 0.0002 | (-3.79) -0.0003 | (-4.39) -0.0002 | (-6.31) $0.0074***$ | (-7.82) -0.0091*** | $(6.57) \\ 0.0002$ |
| Ŭ. | (0.51) | (-0.66) | (-0.45) | (6.38) | (-8.78) | (0.36) |
| Registered | -0.0001 (-0.15) | 0.0001 (0.14) | 0.0002 (0.65) | 0.0044*** (5.86) | 0.0039*** (5.12) | -0.0019*** (-8.71) |
| Entrusted | -0.0003 | $\stackrel{\circ}{0}.001\overset{\prime}{7}$ | -0.0006 | -0.0033*** | 0.0006 | 0.0005 |
| Team-Managed | (-0.56) 0.0007* | (1.58) -0.0003 | (-0.92) 0.0010** | (-3.02) 0.0016* | (0.53) 0.0012 | (1.30) -0.0007*** |
| Management Fee | (1.79) -0.1249*** | (-0.68) -0.1154*** | (2.27) -0.1255*** | (1.95) 0.2369*** | (1.52) $0.3510***$ | (-2.90) -0.0445*** |
| Incentive Fee | (-5.02) 0.0018*** | (-4.48) $0.0017***$ | (-4.94) 0.0018*** | (5.50) $0.0034***$ | (7.44) $0.0042***$ | (-3.54) -0.0012*** |
| Volatility | (3.98) -0.0124 | (3.68) -0.0066 | (3.55) -0.0183* | (3.80) -1.4530*** | (3.61) -1.5647*** | (-3.99) 0.5478*** |
| Style-Time FE | (-1.14) Y | (-0.53) Y | (-1.77) Y | (-47.04) Y | (-51.31) Y | (50.87) Y |
| Observations | 171,682 | 171,682 | 158,193 | 122,416 | 122,416 | 135,111 |
| Number of Funds Adjusted \mathbb{R}^2 | 13,839 0.08 | 13,839 0.04 | 12,917 0.07 | 11,523 0.80 | 11,523 0.81 | 12,086 0.84 |

Table 5: Education, Leadership, and Professional Experience

This table presents how private fund managers' prior mutual fund working experience along with their education, leadership, investment experience, and job role affect private fund excess returns. The sample consists of fund-month observations for private funds in China from 2012–2016. The dependent variable is the alpha of fund i with investment style s in month t, calculated from a 5-factor model using a 12-month rolling window. The 5-factor model includes MKT, SMB, HML, RMW, and CMA proposed by Fama and French (2017). Mutual Fund Experience is a dummy variable that equals one if the private fund manager has prior mutual fund working experience and zero otherwise. Mutual Fund Experience is interacted with PhD (equals one if the private fund manager has a Ph.D. degree and zero otherwise), Leader (equals one if the private fund manager is the leader of the investment team in private fund companies and zero otherwise), Long Invt. Years (equals one if the private fund manager has above-median years of investment experience and zero otherwise), and Non-Manager (equals one if the private fund manager has not ever served as a mutual fund manager and zero otherwise). Other control variables include Fund Age, Registered (equals one if the private fund is registered with the AMAC and zero otherwise), Entrusted (equals one if the private fund company has its clients' capital entrusted with a third-party, like a commercial bank and zero otherwise), Team-Managed (equals one if the private fund has multiple fund managers in month t and zero otherwise), Management Fee, Incentive Fee and Volatility (standard deviation of monthly returns over the past 12 months). All regressions include style-time fixed effects. The robust t-statistics clustered by fund and time are reported in parentheses. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

| | (1) | (2) | (3) | (4) |
|---|-----------------------|-----------------------|-----------------------|-----------------------|
| Mutual Fund Experience | -0.0023*** (-3.14) | -0.0016** (-2.66) | -0.0008 (-1.04) | -0.0019*** (-3.51) |
| ${\bf Mutual\ Fund\ Experience}{\times}{\bf PhD}$ | -0.0045*** (-4.69) | (=:00) | (=: • =) | (3.32) |
| ${\bf Mutual\ Fund\ Experience}{\bf \times Leader}$ | (/ | -0.0062*** (-5.57) | | |
| $\label{eq:mutual Fund Experience} \mbox{Mutual Fund Experience} \times \mbox{Long Years of Invt.}$ | | (3.3.) | -0.0026*** (-3.01) | |
| ${\bf Mutual\ Fund\ Experience} {\bf \times Non\text{-}Manager}$ | | | (3.32) | -0.0039*** (-3.38) |
| PhD | 0.0028*** (5.08) | | | (3.30) |
| Leader | (0.00) | 0.0011** (2.16) | | |
| Long Years of Invt. | | (2.10) | -0.0007 (-1.60) | |
| Fund Age | -0.0001 (-0.40) | -0.0001 (-0.31) | -0.0001 (-0.37) | -0.0001 (-0.39) |
| Registered | 0.0003 | 0.0002 (0.47) | 0.0004 (0.93) | 0.0003 (0.89) |
| Entrusted | -0.0005 (-0.85) | -0.0007 (-1.06) | -0.0008 (-1.30) | -0.0005 (-0.83) |
| Team-Managed | 0.0011** (2.56) | 0.0007 (1.65) | 0.0007 (1.64) | 0.0009** |
| Management Fee | -0.1244*** (-4.89) | -0.1267*** (-4.99) | -0.1224*** (-4.89) | -0.1288*** (-5.06) |
| Incentive Fee | 0.0017*** | 0.0017*** | 0.0012** | 0.0016*** |
| Volatility | (3.48) -0.0182* | (3.48) -0.0166 | (2.28) -0.0177* | (3.19) -0.0194* |
| Style-Time FE | (-1.76) Y | (-1.61) Y | (-1.72) Y | (-1.84) Y |
| Observations | 158,193 | 158,193 | 158,193 | 158,193 |
| Number of Funds Adjusted R^2 | $12,917 \\ 0.07$ | $12,917 \\ 0.07$ | $12,917 \\ 0.07$ | $12,917 \\ 0.07$ |

Table 6: Why Do Switched Mutual Fund Managers Underperform?

This table reports the driving factor for the underperformance of the switched private fund managers. The sample consists of fund-month observations for private funds in China from 2012-2016. The dependent variable is the alpha of fund i with investment style s in month t, calculated from a 5-factor model using a 12-month rolling window. The 5-factor model includes MKT, SMB, HML, RMW and CMA proposed by Fama and French (2017). In Columns (1)–(3), the explanatory variable Mutual Fund Experience, a dummy variable that equals one if the private fund manager has prior mutual fund working experience and zero otherwise, is interacted with Incentive Fee, High Transaction Fee (a dummy variable that equals one if the switched fund manager has ever served in mutual funds with above-median transaction fee rate over the last two years before departure and zero otherwise, where the transaction fee rate is calculated as the transaction fee over total revenue), and Different Style (a dummy variable that equals one if the switched fund manager has ever served in mutual funds which have different investment styles with the private funds they later joined and zero otherwise). Other control variables include Fund Age, Registered (equals one if the private fund is registered with the AMAC and zero otherwise), Entrusted (equals one if the private fund company has its clients' capital entrusted with a third-party, like a commercial bank and zero otherwise), Team-Managed (equals one if the private fund has multiple fund managers in month t and zero otherwise), Management Fee, Incentive Fee, and Volatility (standard deviation of monthly returns over the past 12 months). All regressions include style-time fixed effects. The robust t-statistics clustered by fund and time are reported in parentheses. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

| | (1) | (2) | (3) |
|---|-----------------------|-----------------------|-----------------------|
| Mutual Fund Experience | -0.0026*** (-4.96) | -0.0016*** (-3.06) | -0.0000 (-0.03) |
| Mutual Fund Experience*Incentive Fee | 0.0027** (2.37) | , | , |
| Mutual Fund Experience*High Transaction Fee | , , | -0.0026*** (-3.71) | |
| Mutual Fund Experience*Different Style | | , , | -0.0034*** (-4.38) |
| Fund Age | -0.0001 (-0.46) | -0.0001 (-0.50) | -0.0002 (-0.56) |
| Registered | 0.0003 (1.16) | 0.0003 (1.09) | 0.0005* (1.84) |
| Entrusted | -0.0010** (-2.15) | -0.0009** (-2.09) | -0.0010** (-2.21) |
| Team-Managed | 0.0005 (1.46) | 0.0004 (1.17) | 0.0006** (2.01) |
| Management Fee | -0.1138*** (-5.99) | -0.1109*** (-5.87) | -0.1083*** (-5.78) |
| Incentive Fee | 0.0013** | 0.0018*** | 0.0017*** |
| Volatility | (2.55) -0.0255*** | (3.95) -0.0246*** | (3.57) $-0.0244***$ |
| Style-Time FE | (-3.90) Y | (-3.75) Y | (-3.77) Y |
| Observations | 158,193 | 158,193 | 158,193 |
| Number of Funds Adjusted R^2 | 12,917 0.09 | 12,917 0.09 | 12,917 0.09 |

Table 7: Changes in Market Timing Skills for Switched Fund Managers

This table presents the changes in market timing skills for fund managers before and after switching to private funds. The sample consists of fund-manager observations for funds whose managers switch from mutual funds to private funds in China. The market timing skills in the baseline models are measured by Treynor and Mazuy (1966) (TM Model) and Henriksson and Merton (1981) (HM Model), respectively, along with SMB, HML and UMD. The extended model includes SMB, HML, RMW and CMA as additional risk factors. Standard errors are reported in the parentheses, and t-statistics clustered by fund managers are reported in brackets. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

| | TM I | Model | $_{ m HM}$ | HM Model | | |
|-----------------|--------------------|---------------------|-----------------------------|--------------------|--|--|
| | (1) Baseline | (2) Extended | (3) Baseline | (4) Extended | | |
| Pre-Switch | 0.8283 (0.0665) | 0.8953 (0.0558) | 0.2422 (0.0204) | 0.2936 (0.0221) | | |
| Post-Switch | 0.3111 (0.0465) | 0.2784 (0.0280) | 0.0204) 0.0989 (0.0196) | 0.1214 (0.0124) | | |
| Mean Difference | 0.5172*** [3.03] | 0.6169*** [4.50] | 0.1433** [2.56] | 0.1722*** [2.99] | | |

Table 8: Mutual Fund Managers' Ranks and Private Fund Returns

This table presents how mutual fund managers' performance ranks is related to the private fund returns. The sample consists of fund-month observations for private funds in China from 2012–2016. The dependent variable is alpha of fund i with investment style s in month t, calculated from a 5-factor model using a 12-month rolling window. The 5-factor model includes MKT, SMB, HML, RMW and CMA proposed by Fama and French (2017). The explanatory variables Q1–Q5 are five dummy variables that equal one if the private fund manager is in the n^{th} performance quintile with the same investment style during the last two years before departure and zero otherwise. Other control variables include Fund Age, Registered (equals one if the private fund is registered with the AMAC and zero otherwise), Entrusted (equals one if the private fund company has its clients' capital entrusted with a third-party, like a commercial bank and zero otherwise), Team-Managed (equals one if the private fund has multiple fund managers in month t and zero otherwise), Management Fee, Incentive Fee, and Volatility (standard deviation of monthly returns over the past 12 months). All regressions include style-time fixed effects. The robust t-statistics clustered by fund and time are reported in parentheses. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

| | | Alpha | | | Risk | |
|------------------|-----------------|-----------------|-----------------|------------------------|------------|----------------------|
| | (1) 3-Factor | (2) 4-Factor | (3) 5-Factor | (4) VaR | (5) ES | (6) Downside Risk |
| Q1 | -0.0084*** | -0.0090*** | -0.0076*** | -0.0164*** | -0.0199*** | 0.0073*** |
| | (-7.95) | (-6.97) | (-7.05) | (-5.47) | (-8.17) | (10.17) |
| Q2 | -0.0056*** | -0.0003 | -0.0048*** | -0.0141*** | -0.0156*** | 0.0058*** |
| | (-3.83) | (-0.20) | (-3.28) | (-2.99) | (-3.96) | (3.49) |
| Q3 | -0.0030*** | -0.0020*** | -0.0026*** | -0.0051*** | -0.0146*** | 0.0035*** |
| | (-6.20) | (-3.99) | (-5.56) | (-3.84) | (-6.89) | (6.09) |
| Q4 | -0.0016* | -0.0004 | -0.0020** | -0.0098*** | -0.0094*** | 0.0032*** |
| | (-1.72) | (-0.35) | (-2.48) | (-3.73) | (-3.65) | (4.02) |
| Q5 | 0.0016** | 0.0019*** | 0.0016** | -0.0048*** | -0.0074*** | 0.0007 |
| | (2.43) | (2.99) | (2.13) | (-2.87) | (-4.27) | (1.48) |
| Non-MF Manager | -0.0047*** | -0.0040*** | -0.0042*** | -0.0166*** | -0.0161*** | 0.0048*** |
| | (-5.96) | (-4.42) | (-4.59) | (-6.53) | (-6.30) | (5.83) |
| Fund Age | 0.0002 | -0.0002 | -0.0001 | 0.0074*** | -0.0090*** | 0.0002 |
| | (0.54) | (-0.50) | (-0.32) | (6.42) | (-8.61) | (0.31) |
| Registered | 0.0004 | 0.0004 | 0.0005* | 0.0050*** | 0.0042*** | -0.0021*** |
| | (1.19) | (1.21) | (1.89) | (6.56) | (5.37) | (-9.48) |
| Entrusted | -0.0008* | 0.0005 | -0.0010** | -0.0035*** | 0.0006 | 0.0006 |
| | (-1.79) | (0.76) | (-2.15) | (-3.11) | (0.48) | (1.44) |
| Team-Managed | -0.0000 | -0.0007** | 0.0002 | 0.0005 | -0.0004 | -0.0003 |
| | (-0.00) | (-2.15) | (0.70) | (0.66) | (-0.44) | (-1.21) |
| Management Fee | -0.1144*** | -0.1095*** | -0.1130*** | 0.2248^{***} | 0.3417*** | -0.0403*** |
| | (-6.10) | (-5.49) | (-6.04) | (5.17) | (7.20) | (-3.18) |
| Incentive Fee | 0.0009** | 0.0008** | 0.0008** | 0.0025** | 0.0027** | -0.0006** |
| | (2.19) | (2.29) | (2.03) | (2.63) | (2.33) | (-2.15) |
| Volatility | -0.0202*** | -0.0153* | -0.0254*** | -1.4535 ^{***} | -1.5661*** | 0.5478*** |
| v | (-3.03) | (-1.94) | (-3.83) | (-45.86) | (-51.16) | (49.85) |
| Style-Time FE | Y | Y | Y | Y | Y | Y |
| Observations | 171,682 | 171,682 | 158,193 | 122,416 | 122,416 | 135,111 |
| Number of Funds | 13,839 | 13,839 | 12,917 | 11,523 | 11,523 | 12,086 |
| Adjusted R^2 | 0.10 | 0.05 | 0.09 | 0.80 | 0.81 | 0.85 |
| P-value of Q1=Q5 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Table 9: Changes in Market Timing Skills: Quintile Group Analyses

This table presents the changes in market timing skills for fund managers before and after switching to private funds. The sample consists of fund-manager observations for funds whose managers switch from mutual funds to private funds in China. The market timing skills in the baseline models are measured by Treynor and Mazuy (1966) (TM Model) and Henriksson and Merton (1981) (HM Model), respectively, along with SMB, HML and UMD. The extended model includes SMB, HML, RMW and CMA as additional risk factors. The Q1–Q5 are five performance quintile groups based on switched private fund managers' performance ranks in the same investment style during the last two years before departure. Standard errors are reported in the parentheses, and t-statistics clustered by fund managers are reported in brackets. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

| | TM I | Model | HM I | Model |
|-----------------|-----------|-----------|-----------|------------|
| | (1) | (2) | (3) | (4) |
| | Baseline | Extended | Baseline | Extended |
| Pre-Switch Q1 | 1.1009 | 1.0384 | 0.2282 | 0.3998 |
| 1 16-5 WITCH Q1 | (0.6080) | (0.6762) | (0.1278) | (0.2519) |
| Post-Switch Q1 | -0.3486 | -0.1175 | -0.1529 | -0.0169 |
| 1 OSC SWITCH Q1 | (0.0814) | (0.0545) | (0.0339) | (0.0243) |
| Mean Difference | 1.4495*** | 1.1559*** | 0.3811*** | 0.4166*** |
| | [9.48] | [4.72] | [4.80] | [3.84] |
| | (1) | (2) | (3) | (4) |
| Pre-Switch Q2 | 1.0153 | 0.9777 | 0.2683 | 0.3442 |
| | (0.1414) | (0.1389) | (0.0492) | (0.0667) |
| Post-Switch Q2 | -0.3680 | -0.5541 | -0.1792 | -0.2679 |
| | (0.0696) | (0.0507) | (0.0292) | (0.0232) |
| Mean Difference | 1.3833*** | 1.5318*** | 0.4475*** | 0.6121*** |
| | [7.81] | [10.12] | [5.56] | [8.27] |
| | (1) | (2) | (3) | (4) |
| Pre-Switch Q3 | 0.9965 | 0.9559 | 0.2853 | 0.2783 |
| | (0.1857) | (0.1346) | (0.0407) | (0.0359) |
| Post-Switch Q3 | 0.1966 | 0.0125 | 0.1341 | 0.0219 |
| | (0.0863) | (0.0601) | (0.0351) | (0.0264) |
| Mean Difference | 0.7999*** | 0.9434*** | 0.1511 | 0.2564*** |
| | [2.89] | [4.75] | [1.67] | [3.62] |
| | (1) | (2) | (3) | (4) |
| Pre-Switch Q4 | 0.7699 | 0.8384 | 0.2071 | 0.2589 |
| | (0.1834) | (0.1138) | (0.0563) | (0.0484) |
| Post-Switch Q4 | 0.1254 | 0.2399 | -0.0743 | 0.0436 |
| | (0.1348) | (0.0881) | (0.0540) | (0.0368) |
| Mean Difference | 0.6445 | 0.5985* | 0.2814** | 0.2153^* |
| | [1.58] | [1.88] | [2.25] | [1.73] |
| | (1) | (2) | (3) | (4) |
| Pre-Switch Q5 | 0.6710 | 0.8451 | 0.2252 | 0.2889 |
| | (0.0738) | (0.0823) | (0.0313) | (0.0344) |
| Post-Switch Q5 | 0.5799 | 0.5362 | 0.2092 | 0.2431 |
| | (0.0690) | (0.0372) | (0.0295) | (0.0165) |
| Mean Difference | 0.0911 | 0.3089 | 0.0160 | 0.0457 |
| | [0.33] | [1.24] | [0.17] | [0.42] |

Table 10: Asset Management Products

This table presents the effect of private fund managers' prior mutual fund working experience on private fund excess returns for alternative asset management products. The sample consists of fund-month observations for private funds in China from 2012–2016. The dependent variable is the alpha of fund i in month t, calculated from a 5-factor model using a 12-month rolling window. The 5-factor model includes MKT, SMB, HML, RMW and CMA. Columns (1)–(4) consists of segregated accounts offered by mutual fund companies, trusts, collective investment schemes offered by securities firms, and private securities investment funds, respectively. The explanatory variables Mutual Fund Experience is a dummy variable that equals one if the private fund manager has prior mutual fund working experience and zero otherwise. Other control variables include Fund Age, Registered (equals one if the private fund is registered with the AMAC and zero otherwise), Entrusted (equals one if the private fund has multiple fund managers in month t and zero otherwise), Entrusted (equals one if the private fund has multiple fund managers in month t and zero otherwise), Entrusted Entrusted (equals one if the private fund has multiple fund managers in month t and zero otherwise), Entrusted Entrusted Entrusted (equals one if the private fund has multiple fund managers in month t and zero otherwise), Entrusted Entrusted

| | (1) | (2) | (3) | (4) |
|------------------------|---------------------|------------|-------------------------------|-------------------------------|
| | Segregated Accounts | Trusts | Collective Investment Schemes | Private Securities Invt. Fund |
| Mutual Fund Experience | -0.0037* | -0.0013 | -0.0016** | -0.0033** |
| • | (-1.95) | (-1.32) | (-2.47) | (-2.49) |
| Fund Age | -0.0002 | 0.0012* | -0.0005* | -0.0014 |
| G | (-0.16) | (1.78) | (-1.74) | (-0.90) |
| Registered | -0.0091*** | 0.0041*** | -0.0022*** | 0.0043 |
| C | (-3.98) | (4.06) | (-4.35) | (0.94) |
| Entrusted | -0.0055 | 0.0025 | -0.0031 | -0.0075* |
| | (-1.13) | (1.32) | (-0.92) | (-1.77) |
| Team-Managed | -0.0015 | 0.0022** | -0.0005 | 0.0017 |
| | (-1.01) | (2.37) | (-0.86) | (1.32) |
| Management Fee | -0.1075 | -0.1140* | -0.2098*** | -0.1354* |
| | (-1.17) | (-1.75) | (-4.80) | (-1.89) |
| Incentive Fee | 0.0031 | 0.0002 | 0.0019*** | 0.0014 |
| | (0.46) | (0.04) | (4.15) | (0.26) |
| Volatility | -0.0009 | -0.1063*** | 0.0384** | -0.0443** |
| · | (-0.03) | (-4.94) | (2.65) | (-2.48) |
| Style-Time FE | Y | Y | Y | Y |
| Observations | 9,087 | 43,372 | 76,977 | 28,426 |
| Number of Funds | 930 | 2,705 | 6,056 | 3,212 |
| Adjusted R^2 | 0.21 | 0.13 | 0.05 | 0.06 |

Table 11: Private Fund Managers' Alternative Professional Background

This table presents the effect of private fund managers' alternative prior professional working experience on private funds' excess returns. The sample consists of fund-month observations for private funds in China from 2012–2016. The dependent variable is the alpha of fund i in month t, calculated from a 5-factor model using a 12-month rolling window. The 5-factor model includes MKT, SMB, HML, RMW and CMA. In Columns (1)–(5) the explanatory variable Professional Background is a dummy variable that equals one if the private fund managers' prior professional background is either reported as private fund, freelance, overseas, futures firms or securities firms, respectively and zero otherwise. Other control variables include Fund Age, Registered (equals one if the private fund is registered with he AMAC and zero otherwise), Entrusted (equals one if the private fund company has its clients' capital entrusted with a third-party commercial bank and zero otherwise), Team-Managed (equals one if the private fund has multiple fund managers in month t and zero otherwise), Management Fee, Incentive Fee and Volatility (standard deviation of monthly returns over the past 12 months). All regressions include style-time fixed effects. The robust t-statistics clustered by fund and time are reported in parentheses. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

| | (1) | (2) | (3) | (4) | (5) |
|-----------------------------|----------------|-------------|------------|----------------|-------------------|
| | X=Private Fund | X=Freelance | X=Overseas | X=Futures Firm | X=Securities Firm |
| Professional Background=X | 0.0031* | -0.0018 | 0.0019* | -0.0006 | 0.0006* |
| 1 Totoppional Background—21 | (1.88) | (-1.14) | (1.73) | (-0.28) | (1.85) |
| Fund Age | -0.0002 | -0.0002 | -0.0002 | -0.0002 | -0.0002 |
| 9 | (-0.59) | (-0.55) | (-0.59) | (-0.60) | (-0.61) |
| Registered | 0.0005 | 0.0005 | 0.0005 | 0.0005 | 0.0005 |
| | (1.18) | (1.29) | (1.32) | (1.27) | (1.41) |
| Entrusted | -0.0007 | -0.0005 | -0.0006 | -0.0005 | -0.0005 |
| | (-1.12) | (-0.80) | (-0.89) | (-0.85) | (-0.86) |
| Team-Managed | 0.0007* | 0.0007 | 0.0007* | 0.0007 | 0.0007 |
| | (1.70) | (1.61) | (1.69) | (1.66) | (1.59) |
| Management Fee | -0.1174*** | -0.1176*** | -0.1147*** | -0.1156*** | -0.1172*** |
| | (-4.71) | (-4.74) | (-4.59) | (-4.61) | (-4.69) |
| Incentive Fee | 0.0017*** | 0.0017*** | 0.0017*** | 0.0017*** | 0.0017*** |
| | (3.39) | (3.35) | (3.41) | (3.36) | (3.32) |
| Volatility | -0.0208* | -0.0199* | -0.0199* | -0.0202* | -0.0202* |
| | (-1.97) | (-1.88) | (-1.90) | (-1.92) | (-1.92) |
| Style-Time FE | Y | Y | Y | Y | Y |
| Observations | 158,193 | 158,193 | 158,193 | 158,193 | 158,193 |
| Number of Funds | 12,917 | 12,917 | 12,917 | 12,917 | 12,917 |
| Adjusted R^2 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 |

Table 12: Heckman Selection Model

This table presents the effect of private fund managers' prior mutual fund working experience on private fund excess returns using the Heckman two-stage regression. The sample consists of fund-month observations for private funds in China from 2012–2016. In the first-stage probit regression, the dependent variable Switch, a dummy variable that equals one if the private fund manager switches to a private fund in month t and zero otherwise, is regressed on Female, PhD, Leader, $Super\ City$, and other fund characteristics. $Super\ City$ is a dummy variable that equals one if the private fund company is located in Beijing, Shanghai or Shenzhen, the top 3 richest cities in China and zero otherwise. In the second stage, the 5-factor alpha of fund i in month t is regressed on $Mutual\ Fund\ Experience$ along with $Fund\ Age$, Registered (equals one if the private fund is registered with the AMAC and zero otherwise), Entrusted (equals one if the private fund company has its clients' capital entrusted with a third-party, like a commercial bank and zero otherwise), $Team\ Managed$ (equals one if the private fund has multiple fund managers in month t and zero otherwise), $Management\ Fee$, $Incentive\ Fee$, Volatility (standard deviation of monthly returns over the past 12 months), and the $Inverse\ Mills\ Ratio$ from the first stage. All regressions include style-time fixed effects. The robust t-statistics clustered by fund and time are reported in parentheses. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

| | First Stage | Second | l Stage |
|---|--------------------------------|-----------------------|---------------------------------|
| | (1) Switch | (2) 5-factor Alpha | (3) 5-factor Alpha |
| Mutual Fund Experience | | -0.0028*** (-7.71) | -0.0029*** (-7.88) |
| Female | -0.0875** | (1.11) | (1.00) |
| PhD | (-2.03) 0.4234*** | | |
| Leader | (9.63) 0.1665*** (4.22) | | |
| Super City | 0.2502*** (7.36) | | |
| Fund Age | 0.0890*** | | -0.0001 |
| Registered | (4.39) -0.2927*** | | (-0.69) 0.0002 |
| Entrusted | (-8.10) 0.0457 | | (0.48) -0.0006 |
| Team-Managed | (1.03) $0.2572***$ (6.91) | | (-1.11) 0.0010** |
| Management Fee | -13.1762*** (-6.06) | | (2.32) -0.1279*** (-5.55) |
| Incentive Fee | 0.2291*** | | 0.0018*** |
| Volatility | (4.19) 3.3264*** (10.44) | | (3.95) -0.0178** |
| Inverse Mills Ratio | (10.44) | -0.0004 (-0.62) | (-2.52) 0.0002 (0.24) |
| Style-Time FE | N | Y | Y |
| Observations Number of Funds Pseudo R^2 | 172,363 13,841 0.05 | 158,193 12,917 | 158,193 12,917 |
| Adjusted R^2 | 0.05 | 0.07 | 0.07 |

Table 13: Additional Robustness Checks

This table presents additional robustness checks including sub-period analysis and alternative fund size proxies. The sample consists of fund-month observations for private funds in China from 2012–2016. The dependent variable is the alpha of fund i in month t, calculated from a 5-factor models using a 12-month rolling window. The 5-factor model includes MKT, SMB, HML, RMW and CMA. The Chinese stock market bubble burst on June 12, 2015. Column (1)) covers the pre-crash period and Column (2) covers the post-crash period. In Columns (3)–(5) we include three alternative proxies for fund size, including $Ln(Employees\ Per\ Fund)$ which is defined as the log of total number of firm employees scaled by the number of funds, $Ln(Capital\ Per\ Fund)$ which is defined as the log of firm capital over the number of funds, and $Ln(AUM\ Per\ Fund)$ which is defined as log of asset under management over the number of funds. The explanatory variables $Mutual\ Fund\ Experience$ is a dummy variable that equals one if the private fund manager has prior mutual fund working experience and zero otherwise. Other control variables include $Fund\ Age$, $Registered\$ (equals one if the private fund is registered with the AMAC and zero otherwise), $Entrusted\$ (equals one if the private fund company has its clients' capital entrusted with a third-party, like a commercial bank and zero otherwise), $Team\ Managed\$ (equals one if the private fund has multiple fund managers in month t and zero otherwise), $Management\ Fee$, $Management\ Fee$, Manag

| | Pre-Crisis | Post-Crisis | Control for Private Fund Size | | |
|------------------------|---------------|-------------|-------------------------------|------------|-----------------|
| | (1) | (2) | (3) | (4) | (5) |
| Mutual Fund Experience | -0.0009 | -0.0035*** | -0.0038*** | -0.0029*** | -0.0034*** |
| | (-0.84) | (-4.37) | (-4.49) | (-4.47) | (-4.29) |
| Ln(Employees Per Fund) | | | -0.0003 (-1.53) | | |
| Ln(Capital Per Fund) | | | (-1.55) | 0.0001 | |
| , - | | | | (0.64) | |
| Ln(AUM Per Fund) | | | | | 0.0007*** |
| Frank Amo | -0.0007 | -0.0000 | 0.0004 | -0.0002 | (4.24) 0.0003 |
| Fund Age | (-1.04) | (-0.08) | (0.81) | (-0.42) | (0.63) |
| Registered | -0.0005 | 0.0008* | 0.0016*** | 0.0003 | 0.0018*** |
| Toogistered | (-0.74) | (2.05) | (2.88) | (0.72) | (3.54) |
| Entrusted | -0.0025 | -0.0006 | -0.0003 | -0.0007 | -0.0003 |
| | (-0.98) | (-0.94) | (-0.51) | (-1.10) | (-0.48) |
| Team-Managed | 0.0017^{**} | 0.0008 | 0.0012** | 0.0010** | 0.0014** |
| | (2.48) | (1.64) | (2.10) | (2.27) | (2.57) |
| Management Fee | -0.0433 | -0.1566*** | -0.1119*** | -0.1250*** | -0.1003*** |
| | (-0.61) | (-6.98) | (-3.72) | (-4.79) | (-3.31) |
| Incentive Fee | 0.0010 | 0.0024*** | -0.0003 | 0.0018*** | 0.0020** |
| | (1.34) | (4.39) | (-0.29) | (3.58) | (2.27) |
| Volatility | 0.0961*** | -0.0383*** | -0.0314*** | -0.0143 | -0.0312*** |
| | (4.87) | (-4.33) | (-2.84) | (-1.34) | (-2.73) |
| Style-Time FE | Y | Y | Y | Y | Y |
| Observations | 38,652 | 119,541 | 112,041 | 153,639 | 107,634 |
| Number of Funds | 4,390 | 11,750 | 8,951 | 12,493 | 8,726 |
| Adjusted R^2 | 0.06 | 0.08 | 0.08 | 0.07 | 0.09 |