MACQUARIE University
SYDNEY·AUSTRALIA

Manager Professional Background: Impact on Performance and Style

Sijin Wang

Master of Applied Finance

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Department of Applied Finance
Faculty of Business and Economics

Abstract

The prior professional experience of a manager is important for investors to be able to evaluate the opportunity and risk associated with them. Using a sample of funds and managers taken from Chinese open-ended mutual funds from February 2002 to December 2017, we find that managers with diverse professional experience perform differently and manage their funds in a variety of styles. Managers from government and research backgrounds have a higher risk-adjusted return while facing less market risk. Further detailed analysis shows that managers with government and research backgrounds have efficient investment skills, although market timing measurements suggest that the source of their informational advantage may differ. In contrast, managers with an investment background have higher raw returns generated by following ordinary investment strategies and taking higher systematic risk. Fund managers from a banking background make more money growth on their funds and compensate for their lower performance in generating returns. These results are robust after controlling time and fund fixed effects. In summary, we provide a possible explanation for the mechanism of the impact of prior professional experience on fund performance, whereby managers use the comparative advantage accumulated along career to retrieve informational advantage and generate abnormal return.

Statement of Originality

This work has not previously been submitted for a degree or diploma in any university. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

(Signed) SIJIN WANG Date: 2019/01/23

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Keywords

Comparative Advantage; Information Advantage; Prior Professional Background; Stock-Holding Skill; Market Timing Skill; Riks-Loading Factor; Chinese Mutual Fund Market

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1. Introduction

Human capital plays a critical role in a corporate's current or future acquisition of ongoing robust competitiveness. Notably, a growing number of investors have become interested in evaluating the future opportunity and risk posed by the human capital factor within a company (Bernstein, 2015). The formation of human capital is a learning process, and experience on the job is often the most essential part of this process (Mincer, 1958). Expertise and technical skill sets accumulated along the chosen career path further refine investment performance. Empirical research has shown that prior professional experience does matter, however, the effect of prior professional experience on investment performance and how this experience shapes investment style is still broadly unknown. Our research aims to fill these gaps.

We provide evidence on the impact of prior professional experience on investment performance and style by studying the association between the past professional experience of mutual fund managers and their fund performance and style. The managers and their funds are perfect settings in which to test this association. Since fund managers play an important role in operating and managing mutual funds, fund performance and style may be observed and attributed to the individual fund manager's characteristics and their prior professional experience. Studying mutual fund managers also provides insight as to how the impact of prior professional experience on investment and style are inter-correlated. Moreover, we shed light on the mechanisms by which prior professional experience influences investment performance by examining investment skill and style. Managers use the comparative advantage formed

throughout their career to generate abnormal returns; this is reflected in their fund management style (Coval and Moskowitz, 2001). For instance, managers who spend years researching a certain industry may incline their investment portfolio towards this industry. In fact, managers holding an industry-concentrated portfolio perform better (Kacperczyk et al., 2005). Managers who have previously worked closely with the government sector are more sensitive to political policy and events, which contribute to stronger market timing (Chen et al., 2018). The information network previously built by these managers provides internal information on specific firms, and thus inclines a portfolio to be more concentrated in a certain area (Cohen et al., 2008).

We study the research questions using data from the Chinese open-end stock mutual fund. The institutional features of the Chinese mutual fund provide a unique setting for our research. First, the traditional career ladder for a fund manager in the U.S. typically starts with a junior analyst position upon the completion of an MBA certified program (Porter and Trifts, 2014). By contrast, the Chinese manager does not follow the traditional career pathof U.S. counterparts. A typical previous professional position prior to becoming a Chinese fund manager may be as the administrator in a government financial regulatory sector, or the president in the local branch of a bank. Thus, Chinese mutual fund managers have more diverse prior professional experience.[1] Second, the majority of Chinese mutual funds are for the most part solely managed. For instance, in 2017, around 60% of mutual funds were under solo management, while team fund management has become the dominant strategy for the fund industry in the U.S. (Wang,

[1] The resume for a Chinese mutual fund manager can be found on the Wind database.

2016). Therefore, we can attribute the performance and style of a fund to the individual manager who manages it. In addition, the Chinese stock market is highly volatile compared to the U.S. stock market (Chen et al., 2016). A stock market with such a high level of volatility occurs where the more active fund managers are rewarded by using their investment skills that include market timing and stock holding. Moreover, Chinese mutual funds present no survivorship bias.

To examine the impact of prior professional experience on fund performance and style, we classify each position in a fund manager's previous career path into four different professional backgrounds: banking, research, government, and investment. We use two different approaches to define the prior professional experience for each fund manager in our sample: first, prime professional background; and second, multiple professional background. The prime professional background of a fund manager is determined by the professional background that is most related to their career path. The multiple professional background of a fund manager, which can be used to study the impact of each segment of prior professional experience on a manager's performance and style, is identified by all professional backgrounds that are related to their career path.

First, we find that fund managers with diverse professional backgrounds perform variously after univariate analysis. The fund managers with banking as their prime professional background are the worst performing in all of the performance measurements. By contrast, under the raw return measurement, the fund managers with government as their prime professional background significantly outperform the

managers with other backgrounds.

We next perform the Fama-Macbeth regression (Fama and MacBeth, 1973) of fund performance on a manager's prior professional experience while controlling for the fund characteristics. (e.g. expense ratio, fund size, fund age) and fund manager characteristics, (e.g. sex, age, education, tenure, etc.). The group with the research and government backgrounds exhibit superior performance, while managers with banking background underperforms. In addition, we observe that the performance of the funds managed by the fund managers with their prime background in research and government remain constant once the risk-loading factors are controlled for. Indeed, they appear to possess an informational advantage. The performance of the fund managers with investment as their prime background, on the other hand, is dramatically reduced. Similar results are obtained when we use the multiple professional backgrounds approach as an alternative. This implies that the results for performance difference are not subject to a certain approach by defining prior professional experience.

Second, we study how prior professional experience can impact a manager's fund investment style. We address the concern that a certain type of fund may select a fund manager that fits within its style by using a risk-loading factor in excess of the median value from the relative fund reported style (Wermer, 2010). Using either the prime professional background or the multiple professional background approach, we show that the managers of the investment background bear vast systematic risk, and incline towards chasing momentum, whereas fund managers from the research and government

backgrounds face significantly less systematic risk. It is worth noting that a manager within the banking sector prefers to invest in high book to value companies, while managers with a research background hold more growth stocks. We conclude that the fund managers with an investment background generate a high return by building their portfolio through an ordinary investment pattern. By contrast, managers with government and research backgrounds demonstrate superior investment skills, which also reflect their informational advantage.

Third, to examine the manager's informational advantage that these managers have, we test the stock holding and market timing ability of managers with differing professional backgrounds, respectively. We start by examining the fund managers' stock holding ability using three testing methods: first, the concentration ratio (developed by Kacperczyk et al. (2005), which measures the degree of concentrated investment of a stock portfolio; second, the contribution ratio (proposed by Chung and Kim (2012), which measures the percentage of stocks within a stock portfolio that perform above median; and finally, the return gap (Kacperczyk et al., 2008), which measures the difference between the return of the investment portfolio disclosed previously from the fund holding and the actual return of the fund. The results suggest that the managers with the government and research backgrounds build their portfolios with high contribution and concentration ratios. The managers with the investment background, however, have a more diverse stock portfolio when compared with the managers with the banking background. To test the fund managers' market timing skills, we follow the Treynor Mazuy Model (TM model) (Treynor and Mazuy, 1966) and the

Henriksson Merton Model (HM model) (Henriksson and Merton, 1981). The managers with the government and investment backgrounds are found to possess outstanding market timing abilities.

Overall, the results suggest that both managers from both government and research backgrounds possess a variety of investment skills, which differ given the informational advantage from different sources, resulting in various risk-adjusted returns. Managers who have expended years on researching companies within a certain industry may have multiple resources available to find and analyze the related information of external or internal firms: this may also cause their stock portfolios to incline towards a certain industry and hold more growth stock. Since having political connections is a comparative advantage within the Chinese finance market (Fisman, 2001), fund managers with a government background may use their close connections built with top managers or executives from politically connected firms, to source internal information from these firms. In addition, managers from a government background may analyze government policy beforehand and react to it with optimum timing (Chen et al., 2018), which contributes to their market timing skill. In summary, we provide a possible explanation for the mechanism of the impact of prior professional experience on fund performance, whereby managers use the comparative advantage accumulated throughout their career to retrieve informational advantage and generate abnormal return

Despite their underperformance compared with managers from other backgrounds, it is interesting to consider why firms would hire a fund manager candidate from the

banking background. We posit that managers with this background have a comparative advantage background in the area of new money growth. Given their specific banking connections, it is expected that these managers can bring more cash flow into their funds since banking in China has dominated the retail market for finance products (PWC, 2017). These managers may also bring to the fund companies well-known sales channels and a valuable customer base that has accumulated over many years.

Our findings make several contributions to the literature. First, very few researchers have studied the impact of managers' characteristics on their fund performance. Golec (1996) examines the impact of fund managers' age, tenure and educational on their fund performance. In relation to their education background, Chevalier and Ellison (1997) find that fund managers who graduated from prestige universities in the U.S. have higher risk-adjusted returns. Gottesman and Morey (2006) highlight that education variables, such as CFA, graduate degrees or doctoral degrees, are not usually related to fund performance. In terms of gender, Barber and Odean (2001) suggest that males conduct more trading than females. Since mutual funds that trade the most earn the lowest returns, the funds managed by male managers would therefore generate lower returns than funds managed by females. Our study complements the mutual fund literature regarding the association between fund manager characteristics and fund performance by being the first to fully document the effect of past professional experience on fund performance and style.[2]

[2] Chen et al. (2018) examine the effect of the managers with the research background on their investment skills and performance using a sample of 330 mutual fund manager in total, whereas we examine the effect of all of the Chinese mutual managers with different backgrounds on their fund performance and style. Our research scope is to provide the evidence on effect of prior professional experience on performance and style, and shed a light on the mechanism by which professional experience impacts on performance and style. Chen et al. (2018) only document the testing result of the investment skill of the fund manager with research background.

Second, we add to the literature regarding the source of informational advantage. Fund managers earn a high abnormal return by investing in the stocks of local firms; indeed, proven geographic nearness is a source of informational advantage (Coval and Moskowitz, 2001). This source is further verified by Christoffersen and Sarkissian (2009) who provide evidence that experienced managers working in the finance center perform better. Kacperczyk et al. (2015) conclude that a fund manager with an industry concentrated portfolio performs better, and suggest that prior industry knowledge is an informational advantage. Cohen et al. (2007) find that the manager inclines their portfolio towards the firms that are connected through shared education networks, and suggest that the shared network is another source of informational advantage. Our study fills the gap in this literature and suggests that prior professional experience is a previously overlooked but very important source of informational advantage.

Third, our study also adds to the corporate finance literature regarding the connections between a manager's prior professional experience, early life experience and managerial style. Bamber et al. (2010) find that the unique disclosure style of managers is related to the observable characteristics of their personal backgrounds. Managers born before the Second World War, with the finance, accounting, legal or military sectors as their main career paths, have demonstrated disclosure styles with conservative characteristics; that is, they have preferred a more precise form of disclosure. Malmendier et al. (2011) find that executives who were born before the Great Depression of 1929 incline towards internal financing, while executives who served in the military follow an aggressive leverage policy. Custódio (2014) suggests

that CEOs who have worked in the finance industry prefer to hold less cash, more debt and engage in more share repurchases. Our research differs from previous research, which addresses the impact of early life experience on managerial style, by examining the impact of prior professional experience on investment style, and provide some insights as to how prior professional experience shapes a fund manager's investment style in mutual fund studies.

This thesis is organized as follows. Chapter 2 introduces the institutional background of the Chinese Mutual Fund Industry. Chapter 3 describes the empirical prediction. Chapter 4 describes the sample and data, while empirical results and analysis are presented in Chapter 5. Robustness checks are reported in Chapter 6, and Chapter 7 investigates fund managers' professional experience and new money growth. Chapter 8 concludes.

2. Institutional Background of the Chinese Mutual Fund Industry

In 2000, the China Supervision and Administration Commission (CSRC) issued an interim regulation on open-end securities funds. The first fund was launched at the end of 2001. Following that, the Chinese fund market experienced rapid development from 17 operating funds in 2002 to 4,876 by the end of 2017, worth RMB 11.55 trillion in assets in 122 fund management companies.

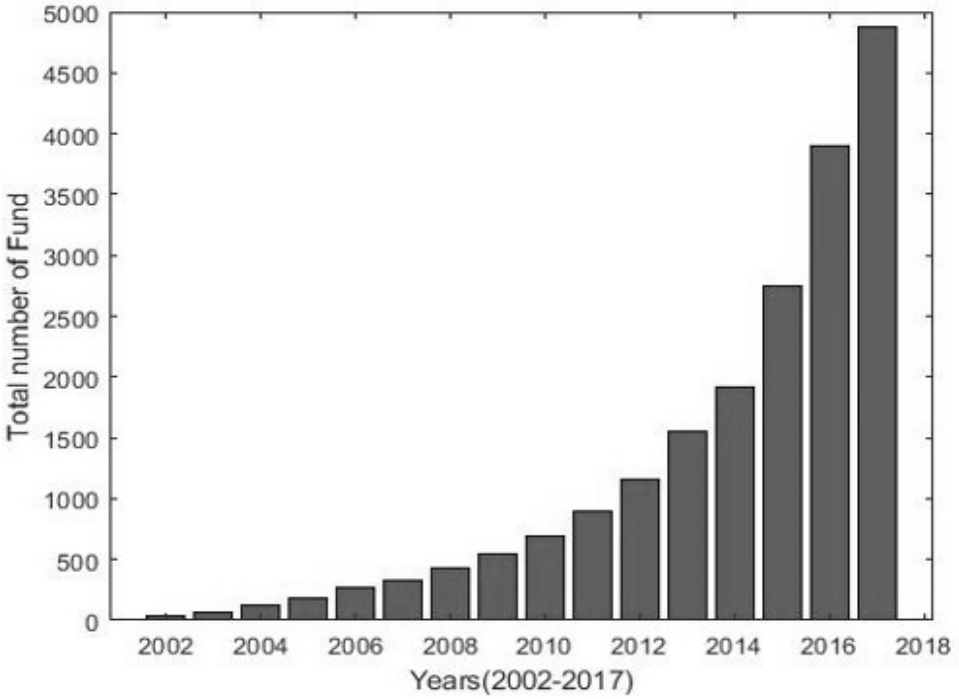

Figure 2.1: The number of the funds in Chinese fund market from 2002 to 2017

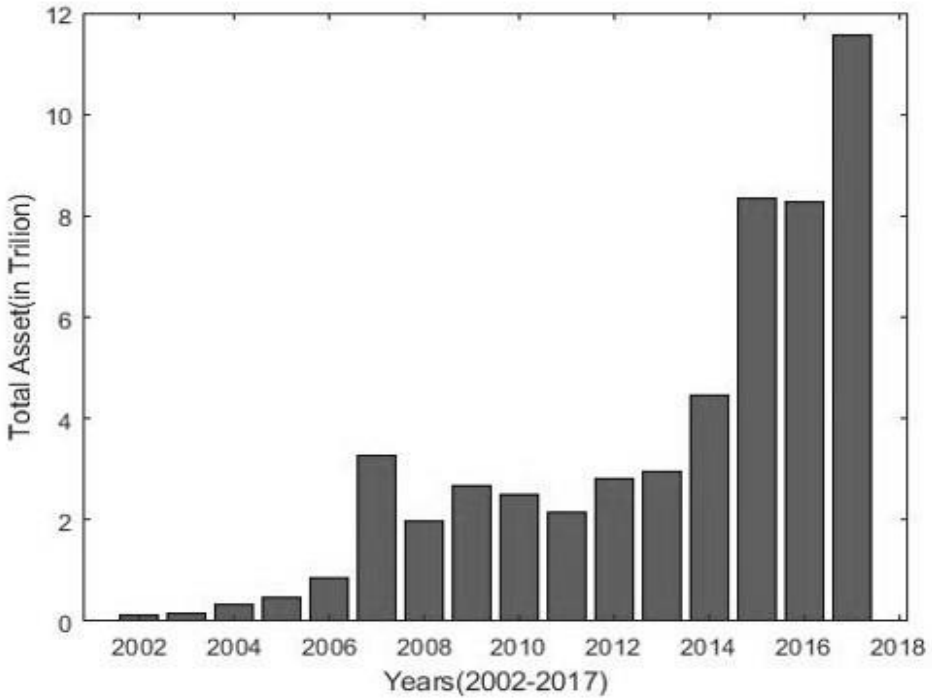

Figure 2.2: The total asset of the funds in RMB Chinese fund market from 2002 to 2017

Figure 2.1 plots the number of Chinese mutual funds under management from 2002 to 2017, and Figure 2.2 shows the total assets in RMB under management from 2002 to 2017. While Figure 1 shows that the total number of funds exponentially increased from 2008 to 2011, Figure 2 reports that the total assets in RMB under management experienced a downward trend from 2008 to 2011 due to the Global Financial Crisis (GFC), followed by rapid growth from 2012.

The Chinese fund market has three main characteristics that distinguish it from the U.S. fund manager market. U.S. fund managers must commence their career in the role of junior analyst. The thriving development of the Chinese fund market, however, has brought not only opportunities but also challenges; there was limited time for most fund management companies to train up fully competent fund managers from analysts during the rapid development stage. Seeking qualified and experienced fund managers was even more difficult. In response to an urgent demand for fund managers, some fund management companies employed people with relevant finance work experience from the government, research, banking and investment industries. Although they received short-term training in order to become a fund manager, the impact of their prior experience remains (Dearborn and Simom, 1958). The second important difference is that most Chinese mutual funds are managed by a single management team. Indeed, more than 60% of the assets in the fund market are under solo management. The proportion of single managed funds in Chinese mutual funds in recent years was 54% in 2013, 56% in 2016 and 61% in 2017. This is contrary to the trend in the U.S., as team management has become the dominant management structure for the U.S. mutual fund

industry (Wang, 2016). Moreover, the Chinese stock market is highly volatile as it experiences frequent fluctuations when compared with the U.S. stock market (Chen et al., 2016). Moreover, Chinese mutual funds present no survivorship bias. These characteristics of the Chinese mutual fund market provide a unique setting for examining the impact of a fund manager's background on fund performance and style.

3. Empirical Predication

There are several reasons to believe that fund managers with diverse career paths perform differently and manage their funds in a variety of styles, and that they benefit from a comparative advantage accumulated throughout their careers to generate risk-adjusted returns. First, previous studies find that the executives use their problem-solving skills developed during their prior professional experience to understand a current issue (Dearborn and Simon, 1958), and that top managers with a variety of previous employment experience results in diverse finance and saving decisions (Dittmar and Duchin, 2013). In our setting, the sample of Chinese fund managers with highly diverse prior professional experience may result in a significantly varied performance in generating return, using a multiplicity of investment styles.

Second, the comparative advantage accumulated throughout different careers to generate risk-adjusted return is broadly studied. Brown et al. (1987) suggest that the informational advantages that a research analyst has are converted from the following: first, a contemporaneous advantage, whereby, research analysts can choose a time series model that is dedicated to analyzing companies in a certain industry while adding

adjustments according to their own judgement; and second, related professional knowledge, where analysts usually have finance, accounting and industry knowledge in the sector in which the company is located. Thus, fund managers from the research background are better able to filter, analyze and interpret information for a certain industry. China is viewed as a country with weak legal regulation in the finance market (Fisman, 2018). Politically connected companies (i.e., including state-owned companies and firms whose top managers are former government officials) enjoy government protection and favorable policy treatment (Jing et al., 2018). The informational advantages of the managers with the government background are: first, a network with the senior manager from a politically connected company, which provides the fund managers with internal information on this company (Cohen et al., 2007); and second, political sensitivity, which is the ability to interpret government policy and regulation, and allows managers to react in advance (Chen et al., 2018). Therefore, fund managers from the government background would tilt their portfolio towards politically connected firm and reveal their market timing skill.

4. Sample and Data

4.1 Sample Selection

Our samples are actively managed domestic open-ended equity and equity-majority hybrid mutual funds[3] in China from 2002 to 2017. We exclude funds that have operated for less than 12 months. The monthly data is sourced from Wind database (Wind), the

[3] The index fund and international fund are excluded.

China Asset Management Academy (CAMA) and China Stock Market and Accounting Research (CSMAR), from January 2002 to December 2017. Specifically, work experience and characteristics of the fund manager, the characteristics of the fund, and the mutual fund's stock holding (reported semi-annually) are collected from Wind. On a monthly basis, the four risk-loading factors, which are the Chinese market excess return, small minus big size (SMB), high minus low book to market value (HML), and the winner's minus loser's momentum (MOM), are retrieved from CAMA.[4] The monthly stock return is source from CSMAR. We also use Baidu Encyclopedia and Tiantian Fund[5] to cross-check our data on fund managers' work experience. We eliminate the data with errors and outlier, which comprise of 5% of our data sample. To summarize, our final sample consist of 680 funds and 1,182 fund managers. Table 4.1 provides a summary of the funds and fund manager statistics of our sample.

4.2 Prior Professional Background

We review the resumes of 1,182 fund managers in the sample. Each position in a fund manager's previous career path is categorized into one of four different backgrounds: government, investment, banking, and research. We summarize positions from entry level to senior level in each background. In terms of the scope of the government background, there are politically connected firms and state-owned enterprises, such as Sinopec and the People's Bank of China. Positions within this background include staff, branch-level cadre, departmental cadre, and ministerial cadre.

[4] CAMA provides the formation and calculation of these four risk factors.

[5] Tiantian Fund https://fund.eastmoney.com.

Within the investment background, people work in securities companies, investment companies and insurance companies as traders, investment managers and directors or general managers. Within the research background, people work within research companies, consultant companies or higher education institutions. Positions include researchers, analysts, senior analysts, and research directors. Within the banking background, people work within commercial banks[6] or asset management companies. Positions include client managers, senior managers, branch managers, and division directors.

Individuals do not always follow traditional career paths, as many fund managers have worked in multiple positions within different backgrounds. Our first object is to test how each segment of prior professional experience impacts on fund performance and style. Therefore, we use the multiple professional backgrounds, which describe all of the backgrounds that are related to a fund manager's career path, in order to define a manager's prior professional experience. We set the one-hot career dummy variable with the backgrounds that are related to fund manager's prior professional experience as 1, and the others as 0.

Alternatively, we use the prime professional background, which describes the background that is most related to a fund manager's career path, to define a manager's prior professional experience. We measure the weight of all positions within the background of a manager's career path using the background score system, which combines the level of each position and its tenure. We then find the background with

[6] The fund managers who used to work within the investment department of a commercial bank are recognized to has having an investment background.

highest background score as the prior prime professional background. The background score formula is defined as follows:

$$Background\ Score_i = \sum_{j=1}^{4} PositionScore_j \frac{Tenure_{i,j}}{TotalTenure} \qquad (\mathbf{4.1})$$

where i represents a certain background, j represents position level in this background. The position score for the four different position levels from low to high are 1, 2, 3, and 4 points, respectively. The total tenure is the total length of time that the fund manager has spent within these four backgrounds. $Tenure_{i,j}$ represents the time that the fund manager has spent at position level j in i background.

For instance, one fund manager worked as staff (level 1) for two years in the China Sinopec (government background), then worked for four years as an investment manager (level 2), and then two years as an investment director (level 3) in Huaxia Securities (investment background). Later, this fund manager worked as a researcher (level 1) at Huaxia Fund (research background) for one year. Therefore, the total tenure for this manager is nine years. We then calculate the background score for government, investment and research, as this manager has participated in all three industries. We take the background score for the investment background as an example:

$$Background\ score\ for\ investment$$
$$= PositionScore_2 \frac{Tenure_{investment,2}}{TotalTenure}$$
$$+ PositionScore_3 \frac{Tenure_{investment,3}}{TotalTenure}$$

By substitution:

$$Background\ score\ for\ investment = 2 * \frac{4}{9} + 3 * \frac{2}{9} = 1.55$$

From the results of all background scores, we find that the background score for

investment is highest. Therefore, we define investment as this manager's prime professional background. One-hot dummy variables are used for representing the prime professional background. The one-hot dummy variable with the highest background score is set as 1, and the others are 0.

From Table 4.1, we see that out of 1,182 fund managers, 53 fund managers have government as their prime professional background, 60 have banking, 357 have investment, and 712 have research. Additionally, 85 fund managers have partial government professional experience, 99 fund managers have partial banking experience, 527 fund managers have partial investment experience, and 886 fund managers have partial research experience.

4.3 Fund Characteristics

Previous research has shown that the age of the fund (Chevalier and Ellison, 1997), the size of the fund (Chen et al., 2004), the fund's expense ratio (Carhart, 1997), joint management (Adam and Rao, 2018), and fund manager management replacement (Khorana, 2001), all affect the performance of a fund. As such, we control for these five variables in our model.

Fund age is calculated by subtracting the present date from the fund established date. We only consider the month, not the exact date. Since the share of fund is reported quarterly, we calculate the size of the fund in the next month by multiplying the value of the share of the fund reported in the last quarter by the net asset value in the current month.

Fund expense ratio is calculated using the following steps: first, we compute the

daily management fee by using the formula as follows:

$$Daily\ management\ fee = \frac{Net\ asset\ value\ of\ the\ previouse\ day\ *\ Management\ \ annual\ fee}{Number\ of\ days\ in\ the\ current\ year} \quad (4.2)$$

Second, we calculate the daily custodial fee:

$$Daily\ custodial\ fee = \frac{Net\ asset\ value\ of\ the\ previouse\ day\ *\ Custodial\ \ annual\ fee}{Number\ of\ days\ in\ the\ current\ year} \quad (4.3)$$

Adding both the daily custodial fee and daily management fee, we obtain the daily expense ratio. After this, we accumulate the daily fund expense ratio within a month to determine the monthly fund expense ratio.

We also check whether the fund is under solo management in the same month. From Table 4.1, the highest number of fund managers managing the same fund within the same month is five, while the average number of fund managers managing the same fund is 1.32, which means that most funds are still managed by one person.

4.4 Fund Manager Characteristics

In terms of the personal characteristics of the fund manager, we consider the fund manager's gender (Barber and Odean, 2001), overseas experience, tenure (Rich et al., 1999), age (Golec, 1996), higher education background (Gottesman and Morey, 2006), and how many funds the manager has managed to date.

We define each fund manager's characteristics as follows: we define the gender of the fund manager as 1 if the manager is male and 0 if the manager is female. The fund manager's tenure can be calculated by subtracting the present date from the date the mutual fund manager started their career. The age of the mutual fund manager can be

easily calculated based on the present date. We define overseas experience as 1 if the manager has any experience abroad.

From Table 4.1, we observe 1,035 male fund managers and 141 managers with overseas experience. The average tenure of a fund manager is 2.089 years, the average age of a fund manager is 41, and the average number of funds that managers have managed is two. Notably, the results of the average manager replacement and average tenure suggest that the young managers have a lower probability of experiencing manager replacement, which is consistent with the conclusion that manager tenure influences manager replacement (Alda and Marco, 2016).

4.5 Fund Performance

We employ three models of fund performance measurement, which are the Return of Fund (RoF), the Capital Asset Pricing Model one-factor model (CAPM) (Sharpe, 1964), and the Carhart four-factor model (Carhart, 1997), in order to calculate the raw return and risk-adjusted return of each fund.

The raw net return of a fund in the current month is calculated as the difference between the Net Asset Value of the fund in the current month and the Net Asset Value of the fund in the last month, plus the dividend of the fund in the current month and capital gain in the last month. This is divided by the net asset value of the fund in the last month. The formula is shown below:

$$\boldsymbol{RoF_{i,t} = \frac{NAV_{i,t} - NAV_{i,t-1} + CG_{i,t-1} + D_{i,t}}{NAV_{i,t-1}}} \qquad (\mathbf{4.4})$$

where $RoF_{i,t}$ denotes the raw return of fund i at month t; $NAV_{i,t}$ stands for net assess value for fund i at month t; $CG_{i,t-1}$ refers to capital gain for fund i at month

$t-1$; $D_{i,t}$ denotes the dividend for fund i at month t.

Many mutual fund-based researchers focus on the CAPM model (Sharpe, 1964). The intercept variable in the CAPM model is often interpreted as an important factor in measuring whether the performance of a fund is outperforming or underperforming. Therefore, we calculate the intercept of a mutual fund by regressing the excess return of a fund on a market risk premium using the monthly observations over its whole sample period:

$$\boldsymbol{RoF_{i,t} - RF_t = \alpha_i + \beta_{i,M}(MR_t - RF_t) + \sigma_{i,t}} \qquad \boldsymbol{(4.5)}$$

where $RoF_{i,t}$ indicates the return of fund i at time t; RF_t is the monthly interest rate at month t based on the official annual deposit rate; MR_t represents the market return data at month t; $\sigma_{i,t}$ refers to the error term of fund i at time t; α_i represents the intercept of fund i over its whole sample period.

We calculate the CAPM risk-adjusted return of a fund over its whole sample period by adding the error term of the fund over its whole sample period to the intercept. We then get the CAPM adjusted return for this fund over its whole sample period:

$$CAPM\,RoF_{i,t} = \alpha_i + \sigma_{i,t} \qquad \boldsymbol{(4.6)}$$

$CAPM\,RoF_{i,t}$ is the CAPM market risk-adjusted return for fund i at time t, which is also known as the abnormal return obtained from CAPM; $\sigma_{i,t}$ refers to the error term of fund i at time t; α_i represents the intercept of fund i over its whole sample period.

The motivation for using multi-factor asset pricing is in line with the literature on the cross-sectional changing of stock returns (Fama and French, 1996) (Chan,

Jegadeesh and Lakonishok, 1996). These studies allow us to consider whether the single index model is enough to evaluate mutual fund performance. The three-factor model was first introduced in 1993 for a better explanation of mutual fund behavior and performance (Fama and French, 1993). Although this model has improved the accuracy of CAPM pricing errors by resolving the issue related to small size company and valuable stock portfolio return, it does not resolve the issue associated with cross-sectional variation in momentum-sorted portfolio returns. Carhart (1997) extended the Fama-French Model by including an extra factor, the fourth factor, that includes a momentum anomaly. This four-factor model is consistent with a market equilibrium model with four risk factors, which is interpreted as a performance attribution model. Therefore, we calculate the intercept of a mutual fund by performing regression analysis of the excess return of a fund on the market risk premium, SMB, HML and MOM for each month using the monthly observations over the entire sample period:

$$\boldsymbol{RoF_{i,t} - RF_t = \alpha_i + \beta_{i,M}(MR_t - RF_t) + \beta_{i,SMB}SMB_t + \beta_{i,HML}HML_t + \beta_{i,MOM}MOM_t + \sigma_{i,t}} \quad (\mathbf{4.7})$$

where $RoF_{i,t}$ indicates the return of fund i at time t; RF_t is the monthly interest rate at month t based on the official annual deposit rate; MR_t represents the market return data at month t; $\sigma_{i,t}$ refers to the error term of fund i at time t; α_i represents the intercept of fund i over its whole sample period. SMB_t represents small size effect in month t. HML_t represents valuable stock effect in month t. and MOM_t represents the momentum effect in month t.

We calculate the four-factor risk-adjusted return of a fund over its whole sample

period by adding the error term of the fund over the whole sample period to the intercept in order to get the four-factor adjusted return:

$$\boldsymbol{Four - Factor\ RoF_{i,t}}=\boldsymbol{\alpha_i + \sigma_{i,t}} \qquad (\mathbf{4.8})$$

$Four - Factor\ RoF_{i,t}$ is the four-factor market risk-adjusted return for fund i at time t, which is known as the four-factor abnormal return, $\sigma_{i,t}$ refers to the error term of fund i at time t; α_i represents the intercept of fund i over its whole sample period.

From Table 4.1, we find that the mutual funds have a large variation in raw return, one-factor risk-adjusted return and four-factor risk-adjusted return. The minimum returns in raw, one-factor adjusted, and four-factor adjusted are -36.20, -17.64, and -24.5, respectively, Whereas the maximum returns in raw, one-factor and four-factor are 45.54, 22.06, and 32.9, respectively.

Table 4.1: Summary Statistics for Characteristics of the Sample Data

This table summarizes the statistics for Chinese mutual fund characteristics and Chinese mutual fund manager characteristics. The symbol hash (#) represents the number of observations that meet certain conditions.

	#	Min	Median	Mean	S.D.	Max
number of fund-month Obs.	51428					
number of funds	680					
number of fund managers	1182					
Fund Characteristics						
Rof		-36.2	1.37	1.19	0.08	45.54
CAPM Return		-17.64	0.27	0.38	0.03	22.06
Four-Factor Return		-24.5	0.19	0.29	0.04	32.9
Fund age		1.00	6.00	6.20	3.93	16.00
Fund size		0.52	3.17	3.06	0.67	4.65
Expense ratio		0	0.10	0.09	0.03	0.28
Joint management	27994	0		0.54		1.00
Managerial Replacement	4095	0		0.07		1.00
Prime Professional Background						
Government	53	0		0.04		1
Banking	60	0		0.05		1
Investment	357	0		0.30		1
Research	712	0		0.61		1
Multiple Professional Background						
Government	85	0		0.07		1
Banking	99	0		0.08		1
Investment	527	0		0.46		1
Research	886	0		0.77		1
Other Manager Characteristics						
Male gender	1035	0		0.87		1
Oversea experience	141	0		0.12		1
Postgraduate	1018	0		0.95		1
Fund manager tenure		1.00	2.00	2.09	1.48	12.00
Fund manager age		28.00	40.00	40.65	5.64	58.00
#of FUM		1	2.00	2.04	1.15	8.00

5. Empirical Results and Analysis

5.1 Fund Manager Prior Professional Background and Fund Performance

In this section, we examine the association between managers with different prior professional backgrounds and their fund performance. We first conduct a univariate analysis of fund performance based on prior professional backgrounds. We then utilize the Fama-Macbeth regression (Fama and Macbeth, 1973) of fund performance on both prime professional background and multiple professional background, while controlling for the manager and fund characteristics.

Table 5.1 represents the mean performance against four different prime professional backgrounds with and without risk-adjusted. Panel A in the table shows that the managers with banking as their prime professional background obtain the lowest raw return and adjusted returns, while others significantly outperform. In particular, the four-factor risk-adjusted returns of research, investment, and government are 0.39%, 0.34% and 0.33%, respectively. In contrast, the four-factor risk adjusted return of banking is only 0.01%. Panel B of the table shows a consistent result that the performance difference in raw and risk-adjusted return between the managers of banking and others are significantly positive.

Our result from the univariate analysis suggests that a manager's professional experience is one of the determinants of fund performance. However, the fund performance differences in professional prime background may be influenced by other characteristics of the fund and fund manager. In addition, we are interested in the impact of multiple professional backgrounds on fund performance, in order to measure how

Table 5.1: Univariate Analysis of Prior Professional Experience and Fund Performance

This table summarizes the univariate analysis of prior professional experience on fund performance. Panel A reports the mean performance against four different prime professional backgrounds with and without risk adjusted (and the t-statistics in parentheses). Panel B reports the pair-wise performance varying across four different prime professional backgrounds. (Performance is measured in raw return (Rof), and risk-adjusted return (CAPM and Four-Factor)) *, **, and *** represent the statistical significance at the 1%, 5% and 10% level, respectively.

	Rof		CAPM Return		Four-Factor Return	
Panel A: Mean performance measures						
Government	1.31	***	0.27	***	0.33	***
	(5.81)		(3.73)		(5.81)	
Investment	1.11	***	0.26	***	0.34	***
	(20.19)		(2.08)		(16.35)	
Research	1.18	***	0.28	***	0.39	***
	(28.92)		(14.15)		(25.48)	
Banking	0.65	***	0.04		0.01	
	(4.64)		(0.58)		(0.28)	
Panel B: Pair T-test						
Government-Investment	0.19		0.12		0.02	
	(0.92)		(1.22)		(0.31)	
Government-Research	0.27		-0.03		-0.15	*
	(1.29)		(-0.29)		(-1.92)	
Government-Banking	0.67	***	0.23	**	0.32	***
	(3.13)		(2.29)		(4.07)	
Investment-Research	-0.13	*	-0.08	**	-0.14	***
	(-1.66)		(-2.18)		(-4.55)	
Investment-Banking	0.41	**	0.09		0.26	***
	(2.02)		(0.88)		(3.41)	
Research -Banking	0.39	**	0.27	***	0.48	***
	(1.89)		(2.64)		(6.14)	

each industrial experience on a manager's career path affects the fund performance. To that end, we conduct a Fama-Macbeth regression (Fama and Macbeth, 1973) with cross-sectional approach. We run a regression analysis of fund performance on fund managers' prime professional backgrounds and control for fund characteristics and fund manager characteristics for each month. The regression is shown below:

$$\begin{aligned} Performance(y)_{i,j,t} = {} & \delta_{0,t} + \gamma_{1,t} Government\ Dummy_j + \gamma_{2,t} Investment\ Dummy_j + \gamma_{3,t} Research\ Dummy_j \\ & + \gamma_{4,t} Banking\ Dummy_j + \gamma_{5,t} Joint\ Management_{i,t} + \gamma_{6,t} Fund\ Age_{i,t} \\ & + \gamma_{7,t} Fund\ Expense_{i,t} + \gamma_{8,t} Fund\ Size_{i,t} + \gamma_{9,t} Fund\ Manager\ Age_{j,t} \\ & + \gamma_{10,t} Fund\ Manager\ Tenure_{j,t} + \gamma_{11,t} Fund\ Manager\ Gender_{j,t} \\ & + \gamma_{10,t} Fund\ Manager\ Oversea_{j,t} + \gamma_{10,t} Number\ Of\ FUM_{j,t} + \varepsilon \end{aligned} \quad (\mathbf{5.1})$$

where $Performance(y)_{i,j,t}$ indicates the fund performance in raw return or risk-adjusted return against fund i, managed by j number of fund managers at time t. The values in $GovernmentDummy_{i,j}$,$InvestmentDummy_{i,j}$, $ResearchDummy_{i,j}$, and $BankingDummy_{i,j}$ are given according to the prime or multiple professional background of the j^{th} fund manager in fund i. In the case of the prime professional background, the $BankingDummy_{i,j}$ is omitted as we are using banking as the bench mark. $\gamma_{\{1,2\ldots10\},t}$ indicates the coefficients against the variables in the above formula in month t. As result, we obtain the average and t-statistics of coefficients of professional background, and the characteristics of fund and fund manager.

In Table 5.2, Panel A shows average coefficients and related t-statistics from regression using a career dummy variable according to prime professional background. Panel B shows the results derived from regression using a career dummy variable according to multiple professional background. The results found in Panel A are consistent with the results from the univariable analysis. The career dummies of

government, investment and research are found positive in RoF, CAPM adjusted return and four-factor adjusted return at least at 1% significant. This first indicates that the fund managers with banking as their prime background perform worse than those from the other three backgrounds. The fund managers with government as their prime professional background perform the best in raw return, CAPM and four-factor adjusted return. This is in contrast to the univariable result whereby the managers with research as their prime professional background perform the best in four-factor risk-adjusted return. This measurement difference may be caused by the correlation between the four-factor adjusted return, fund characteristics and fund manager characteristics.

Panel B, which indicates the results from regression using a dummy variable according to multiple background, suggests similar results as those found in Panel A. The average coefficient of government, investment and research are significantly positive in RoF, CAPM adjusted return and four-factor adjusted return. In addition, the fund managers who had partial professional experience in research have the highest four-factor risk-adjusted return, which shows that having research experience on a manager's career path may benefit their future fund investment skills. This is in line with the standard fund manager career path in the U.S. whereby fund managers have traditionally started their career as a financial analysist. On the contrary, and as we expected, the fund managers with partial professional experience in banking have the lowest return in all scenarios, which suggests that having only a small degree of banking experience leads to poor fund management performance. After all, the effects of a multiple professional background of a manager can also be viewed as the sum of the

coefficients of all career dummies that a manager has experienced.

We further examine the difference between raw return and risk-adjusted return of each prior professional background from Panel A and Panel B. In Panel A, the coefficients of the government dummy are 0.2840, 0.2746 and 0.2842 in RoF, CAPM and four-factor, respectively, which remains constant even after controlling for systematic risk and the other three loading factors. Similar results are found in the coefficients of research, which are 0.2180, 0.2331 and 0.2249 at 1% significance level. On the other hand, the coefficients of investment against RoF, CAPM and four-factor shows a downward trend, which decreases from 0.2564 to 0.2201, and to 0.2364, and is highly significant. CAPM and four-factor risk-adjusted return also test a fund manager's investment skill, as they measure the actual return not generated from ordinary investment strategies, such as having large systematic risk, investing in small firms, buying valuable stock, and chasing momentum (Carhart 2012). Hence, the decreasing trend of the coefficient of investment indicates that the manager with investment as their prime background has the investment portfolio relying on higher risk-loading factors. On the contrary, the fund managers from research and government backgrounds add extra value to their portfolio by using their investment skills. We further investigate the investment style of the fund manager with different professional backgrounds by examining the risk-loading factors in their portfolio. In conclusion, our results suggest that past professional experience has a significant effect on fund performance, especially when the risk-loading factors are controlled for.

We now discuss the control variables used in regression testing. First, we find the

coefficient of joint management is 5% significantly negative correlated to the fund performance. This result is contrary to the literature of the U.S. fund (Adams et al., 2018). It provides an answer to the debate on the trend of mutual funds under solo management in China. The team management structure of Chinese mutual fund does not benefit the fund performance, while in the U.S., the funds under team management generate more risk-adjusted abnormal return. The coefficients on expenses are negative and 1% significant. This is consistent with a large body of literature of U.S. mutual funds that find that funds charging more expensive service rate perform worse (Carhart, 1997). Similarly, we find that the age of the fund manager is negatively correlated with performance, suggesting that some young fund managers may perform better than older managers (Golec, 1996). In addition, we find the coefficients of an MBA unrelated master and PhD degrees are significantly positive, which proves that a fund manager with post-graduate study experience brings more returns, which is contrary to the U.S. fund literature (Gottesman and Morey, 2006).

5.2 Fund Manager Prior Professional Background and Fund Style

This last section shows that managers with different prior professional experience generate different risk-adjusted abnormal return. Therefore, we further investigate the style of portfolio of managers with different prior professional experience by examining the risk-holding factors in their investment portfolios (Chan et al., 2002). Generally, prior professional experience shapes a fund manager's management style in two ways. First, personal attributes shaped by a prior professional experience impact the fund investment style. For instance, traders are often found to be

Table 5.2: Fama-Macbeth Regression Analysis of Fund Performance on Prior Professional Background

Panel A reports estimates and t-statistic of regression analysis of fund performance on prime professional background. Panel B uses regression analysis of fund performance on multiple professional background. (Performance is measured in raw return (Rof), and risk-adjusted return (CAPM and Four-Factor)) *, **, and *** represent the statistical significance at the 1%, 5% and 10% level, respectively.

	Dependent Variable: Fund Performance Evaluation											
	Panel A: Prime Professional background					Panel B: Multiple Professional background						
	Rof		CAPM Return		Four-Factor Return		Rof		CAPM Return		Four-Factor Return	
Government	0.284	***	0.2746	***	0.2842	***	0.0847	**	0.0876	**	0.0792	**
	(3.1992)		(3.4881)		(3.2092)		(1.8798)		(1.9581)		(1.8485)	
Investment	0.2564	***	0.2201	***	0.2364	***	0.0893	***	0.0689	**	0.069	**
	(3.5135)		(3.5463)		(3.4739)		(2.6175)		(2.4706)		(2.5418)	
Research	0.218	***	0.2331	***	0.2249	***	0.0743	**	0.0732	*	0.0985	**
	(3.0035)		(3.7929)		(3.262)		(1.7307)		(1.7235)		(2.4881)	
Banking							-0.1245	**	-0.1129	**	-0.1261	***
							(-2.5593)		(-2.5068)		(-2.886)	
Managerial Replacement	-0.0271		-0.0035		-0.0154		-0.0233		-0.0112		-0.002	
	(-0.3493)		(-0.0489)		(-0.209)		(-0.2949)		(-0.1477)		(-0.0274)	
Joint management	-0.0688	**	-0.0612	**	-0.0604	**	-0.0757	**	-0.0638	**	-0.0622	**
	(-2.0563)		(-2.1029)		(-1.982)		(-2.3334)		(-2.1466)		(-2.211)	
Number of FUM	-0.019		-0.0031		-0.0234		-0.0139		-0.0179		-0.0016	
	(-0.6149)		(-0.1132)		(-0.7895)		(-0.4817)		(-0.63)		(-0.057)	
Overseas	0.0041		0.031		0.0112		-0.0019		0.0103		0.0339	
	(0.103)		(0.8527)		(0.2952)		(-0.0458)		(0.2669)		(0.9123)	
Gender	0.0006		-0.0187		-0.0304		0.0125		-0.0194		-0.0063	
	(0.0111)		(-0.422)		(-0.6289)		(0.2393)		(-0.4003)		(-0.1384)	
Postgraduate	0.173	***	0.1976	***	0.1953	***	0.1667	***	0.1913	***	0.1942	***
	(2.6386)		(3.2934)		(3.0715)		(2.5591)		(3.0444)		(3.2)	
Fund manager age	-1.1511	***	-1.2447	***	-1.1418	***	-1.0198	***	-1.0596	***	-1.1485	***
	(-2.9996)		(-3.7894)		(-3.2653)		(-2.7344)		(-3.0788)		(-3.4841)	
Fund size	-0.0303	***	0.0425		-0.0076		-0.036		-0.0148		0.0317	
	(-0.4644)		(0.7791)		(-0.1226)		(-0.5427)		(-0.2348)		(0.5653)	
Fund age	-0.0567		-0.003		-0.0198		-0.0506		-0.016		0.0002	
	(-2.8402)		(-0.1309)		(-0.8531)		(-2.5147)		(-0.6559)		(0.0093)	
Tenure	0.0207		0.0155		0.0088		0.0167	**	0.0053		0.0117	
	(1.3543)		(1.0774)		(0.5595)		(1.0781)		(0.3177)		(0.7603)	
Expense	-60.1235	***	-50.4925	***	-58.3755	***	-59.2848	***	-57.6767	***	-49.7761	***
	(-3.0566)		(-2.9799)		(-3.08)		(-3.0571)		(-3.0704)		(-2.9518)	
CONSTANT	8.7088	***	6.4043	***	7.2649	***	8.5631	***	7.2079	***	6.3205	***
	(4.6491)		(4.0092)		(4.0701)		(4.6517)		(4.0834)		(3.9962)	
Obs.	64760		64760		64760		64760		64760		64760	
Adjusted R^2	6.86%		7.74%		6.98%		7.06%		7.88%		7.17%	

overconfident (Barber and Odean, 2001). The fund managers with investment professional experience may be more overconfident and therefore more likely to bear market risk in their investment portfolio. Second, the comparative advantage formed as a result of previous professional experience could be transferred into their current management style (Coval and Moskowitz, 2001). For instance, the fund manager who previously worked as departmental cadre in the People's Bank of China, and who is used to retrieving internal sensitive data from the top manager from a politically connected firm, may continue to use this advantage rather than conducting research on data open to the public. Therefore, a better stock holding decision can be made, and less market risk is carried.

To conduct our analysis, we calculate the seasonal betas for the market risk factor and the other three loading factors of each mutual fund by using the four-factor rolling regression with steps of three months and windows of 24 months.

$$\boldsymbol{RoF_{i,t} - RF_t = \alpha_i + \beta_{i,M}(MR_t - RF_t) + \beta_{i,SMB}SMB_t + \beta_{i,HML}HML_t + \beta_{i,MOM}MOM_t + \sigma_{i,t}} \quad (\mathbf{5.2})$$

where $RoF_{i,t}$ indicates the return of fund i at time t; RF_t is the monthly interest rate at month t based on the official annual deposit rate; MR_t represents the market return data at month t; SMB_t, HML_t, and MOM_t are returns generated by investing in a small size company, valuable stocks, and chasing momentum, respectively. Among these factors, the positive or negative of $\beta_{i,SMB}$ represents whether the fund is oriented towards large company stocks or small company stocks. The positive and negative of $\beta_{i,HML}$ indicates the fund focus on the value stock or the growth stock. The positive or

negative of $\beta_{i,MOM}$ indicates that the fund tends to move forward or backward.

To address the question as to whether it is possible that a fund company would choose the manager with a certain style that matches the fund style, we obtain the median betas of risk-loading factors of the funds with the same reported style. We then obtain style-adjusted betas by subtracting the actual beta from the median beta (Wermers, 2000). We run the Fama-Macbeth regression (Fama and Macbeth, 1973) of each beta on the fund manager's prior professional background, and control for manager characteristics and fund characteristics, which is similar to Equation 5.1. We also find similar results using style-adjusted beta.

In Table 5.3, the coefficients estimated in Panel A are consistent with the results in Panel B. The managers from a government background and those from a research background take significantly less systematic risk and have minimal momentum strategy. These management styles suggest that the fund managers with government and research backgrounds not only rarely rely on ordinary investment strategy but also possess advanced investment skills. On the contrary, managers with an investment background largely incline towards the momentum chasing strategy and bear enormous market risk, which reflects that mangers from the investment background rely on an ordinary investment strategy and have relatively lower investment skills. The fund managers from a banking background are proven to have the least skillful investment strategy as they heavily load more valuable stocks and market risk.

Next, we examine the control variable in the regression. There are some control variables that are worth discussing, such as joint management, gender, fund manager

age, fund size, and fund age. The funds under team management are found to be leaning towards growth stocks. Regarding the number of funds that a manager has managed, the more funds that a manager has managed, the less market risk this manager will take. Male managers have a significantly negative correlation to systematic risk, which is contrary to the Barber and Odean (2001) research suggesting that male managers take more systematic risk. Elder managers prefer to follow conventional investment strategy by having a lot of market risk and invest in stocks in small companies. This result is in line with the conclusion from the Golec (1996) research that finds that elder managers generate less risk-adjusted return than younger managers. Funds with a large asset value hold a large proportion of stocks tilting towards a large company. Finally, the older funds incline towards investing in stocks from the big company.

In summary, fund managers with different prior professional experience have different fund investment styles. This section provides an explanation of the results found in Table 5.2. The returns on funds managed by managers from an investment background decrease when the risk-loading factors are controlled for. This is because there is a lot of raw return obtained by following the traditional investment strategy while having large market risk. In contrast, the return on funds managed by managers from the government and research backgrounds remain constant when risk-loading factors are controlled for, since they possess exceptional investment abilities rather than following a 'template investment plan'. We argue that acquired informational advantage from previous professional experience contributes to a manager's investment skills.

Table 5.3: Fama-Macbeth Regression Analysis of Fund Risk-loading Factor on Prior Professional Background

Panel A reports the estimates and t-statistic of regression analysis of fund portfolio risk-holding factors on prime professional background. Panel B presents results of regression analysis of risk-holding factors on multiple professional background. *, **, and *** represent the statistical significance at the 1%, 5% and 10% level, respectively.

	Dependent Variables							
	Panel A: Prime Professional background				Panel B: Multiple Professional background			
	Market Risk	SMB	HML	MOM	Market Risk	SMB	HML	MOM
Government	-0.007***	0.020 **	-0.005	-0.054***	-0.001	0.000	-0.012	-0.041
	(-3.105)	(2.088)	(-0.31)	(-4.90)	(-0.152)	(0.014)	(-1.125)	(-1.194)
Investment	0.004 **	0.025***	-0.016	-0.007	0.010 **	0.023 **	-0.032 *	0.008 ***
	(2.189)	(3.261)	(-1.48)	(-1.09)	(2.498)	(2.337)	(-1.920)	(1.151)
Research	-0.009***	0.017	-0.022 **	-0.018***	-0.006***	0.012	-0.035 **	0.009
	(-6.613)	(1.459)	(-2.43)	(-2.94)	(-3.750)	(1.258)	(-2.467)	(0.629)
Banking					0.011***	-0.005	0.025 ***	0.015
					(4.845)	(-0.51)	(2.965)	(2.049)
Managerial Replacement	0.002	-0.005	0.014	0.009	-0.001	0.000	0.050 **	0.034
	(0.263)	(-0.57)	(1.518)	(1.023)	(-0.190)	(0.046)	(2.292)	(1.111)
Joint management	-0.002	-0.001	-0.014 **	-0.006	-0.003	-0.004	-0.023 ***	-0.012
	(-0.661)	(-0.31)	(-2.35)	(-0.92)	(-0.904)	(-0.89)	(-2.743)	(-0.973)
Number of FUM	-0.950 **	0.525	-1.501 **	0.110	-0.821 **	0.684	-0.969	1.241
	(-2.450)	(0.996)	(-2.15)	(0.260)	(-2.193)	(1.259)	(-1.305)	(0.997)
Overseas	0.005	-0.032***	-0.033 **	0.003	0.006	-0.034	-0.023	0.040
	(0.537)	(-4.63)	(-2.68)	(0.378)	(0.733)	(-4.85)	(-1.061)	(1.242)
Gender	-0.009***	-0.002	0.017***	-0.004	-0.010***	0.000***	0.027	-0.008 ***
	(-5.165)	(-0.53)	(4.465)	(-2.27)	(-4.513)	(0.085)	(1.4061)	(-1.1315)
Postgraduate	-0.006 *	-0.003	-0.003	0.000 **	-0.005	0.001	-0.005	0.019
	(-1.738)	(-0.30)	(-0.26)	(0.049)	(-1.173)	(0.075)	(-0.287)	(1.507)
Fund manager age	0.015***	0.016 **	-0.014	-0.004	0.014***	0.012 *	-0.035 *	0.010
	(4.441)	(2.461)	(-1.50)	(-0.40)	(3.501)	(1.605)	(-1.845)	(0.683)
Fund size	-0.013	-0.048***	-0.005	0.017	-0.005	-0.061***	-0.038	0.055 ***
	(-1.262)	(-3.58)	(-0.21)	(1.286)	(-0.369)	(-3.70)	(-0.869)	(1.050)
Fund age	0.003	-0.031***	0.005	-0.004	0.005	-0.029***	-0.008	0.005 ***
	(0.612)	(-5.39)	(0.556)	(-0.37)	(0.855)	(-3.00)	(-0.564)	(0.238)
Tenure	0.003***	-0.002***	0.000	-0.001	0.003	-0.001	0.001	-0.001
	(4.862)	(-3.49)	(-0.43)	(-1.05)	(4.288)	(-1.65)	(0.877)	(-0.304)
Expense	0.001	0.004 *	-0.001	0.001	-0.001	0.004 *	0.001	-0.005 **
	(0.608)	(1.683)	(-0.33)	(0.552)	(-0.710)	(1.968)	(0.146)	(-0.889)
CONSTANT	0.207 **	-0.034	0.257	0.208	0.148	-0.087	0.091	-0.372
	(1.711)	(-0.24)	(1.251)	(1.610)	(1.247)	(-0.56)	(0.383)	(-0.654)
Obs.	16271	16271	16271	16271	16271	16271	16271	16271
Adjusted R^2	18.02%	9.16%	0.90%	5.83%	18.36%	6.29%	8.19%	7.50%

5.3 Fund Manager Prior Professional Background and Information Advantage: Evidence from Investment Skills

In this section, we study the informational advantage of managers with different prior professional experience by testing the association between a fund manager with a differing professional background and investment skills. The information advantage can be reflected in two ways: first, their stock holding skill, which is the skill used to manage stocks in a portfolio that have the potential to grow, can be measured mathematically in a concentration ratio (Kacperczyk et al., 2005), contribution ratio(Chung and Kim, 2012), and return gap (Kacperczyk et al., 2008); and second, market timing, which is the skill used to foresee trends in stock movement and act on it accordingly, and can be measured using the HM (Henriksson and Merton,1981) and TM (Treynor and Mazuy, 1966) models. Since the results of multiple prior professional backgrounds and that of prior prime professional background have similar qualities, henceforth we only state the results derived from prior professional background.

Our first predication on the stock holding of the fund managers with an informational advantage is that their portfolios are less diverse. We first use the concentration ratio, which is the percentage of the market value of the top 10 stock holdings in a portfolio, to the market value of this portfolio. Next, we examine the contribution ratio, which is the ratio of the number of stocks that perform better than the median stock in terms of the value of adjusted risk return, to the total number of stocks held in the fund. Contribution rates may represent the percentage of stocks that drive the growth in obtaining risk-adjusted returns, and may also indicate that fund

managers have a consistent informational advantage and not simply luck. In addition, we study the return gap, which measures the difference between the return on the investment portfolio (disclosed previously from the fund holding) and the return of the fund. The return gap reveals the unobserved action taken by a fund manager in stock trading using their informational advantage, where a higher return gap may contribute to the growth of the risk-adjusted return.

Moreover, we study market timing by using the HM and TM models, while controlling for the risk-loading factor. We use these two models to perform a regression analysis of the excess return of a mutual fund on the market risk premium return, and the square of the market risk premium return (Treynor and Mazuy, 1966) or the market risk premium return of the fund that is larger and equal to zero (Henriksson and Merton, 1981). We use monthly observations over the entire sample period. The TM model formula is expressed as follows:

$$Rof_{i,t} - Rf_t = \alpha_i + \beta_{i,1}(MR_t - Rf_t) + \gamma_i(MR_t - Rf_t)^2 + \varepsilon_{i,t} \qquad (\mathbf{5.3})$$

and the HM model is represented by:

$$Rof_{i,t} - Rf_t = \alpha_i + \beta_{i,1}(MR_t - Rf_t) + \gamma_i Max((MR_t - Rf_t),0) + \varepsilon_{i,t} \qquad (\mathbf{5.4})$$

where $RoF_{i,t}$ indicates the return of fund i at time t; RF_t is the monthly interest rate at month t based on the official annual deposit rate; MR_t represents the market return data at month t; α_i represents the intercept of fund i over the entire sample period.

To take the risk levels faced by fund managers into consideration, we include three risk factors: the size factor (SMB), the value factor (HML) and the momentum factor

(MOM) to the TM and HM models. The formula is expressed as:

$$Rof_{i,t} - Rf_t = \alpha_i + \beta_{i,1}(MR_t - Rf_t) + \beta_{i,2}SMB_t + \beta_{i,3}HML_t + \beta_{i,4}MOM_t + \gamma_i g(Rof_{i,t} - Rf_t) + \varepsilon_{p,t} \quad (5.5)$$

where the function $g(Rof_{i,t} - Rf_t)$ takes the form $(MR_t - Rf_t)$ in the TM model and $Max((MR_t - Rf_t),0)$ in the HM model. $RoF_{i,t}$ indicates the return of fund i at time t; RF_t is the monthly interest rate at month t based on the official annual deposit rate; MR_t represents the market return data in month t; SMB_t represents the size effect in month t; HML_t represents the value effect in month t; MOM_t represents the momentum effect in month t; α_i represents the intercept of fund i over the whole sample period (which reflects the fund manager's stock picking ability). γ_i indicates the market timing against the fund i. If α_i is a positive number, the fund manager can then successfully select stocks that are underestimated. If γ_i is a positive number, the fund manager can buy or sell a stock that is about to rise or fall.

Last, we can find the associations between the fund managers' prime professional background and concentration ratio, contribution ratio, return gap, and market timing Gammas, respectively, using the Fama-Macbeth regressions (Fama and Macbeth, 1973) method mentioned in Equation 5.1. From Table 5.4, we find that the mean coefficients of the concentration ratio against different prior professional backgrounds are not the same. We find that fund managers with government as their prime professional background have the highest coefficient of 0.9951. The coefficient of the fund managers with research as their prime professional background is second to fund managers with a government background, at 0.6433. Interestingly, the fund managers with investment

as their prime background hold more diverse investment portfolios than those with the banking background. These results are in line with our prediction that managers with an informational advantage incline their investment portfolio towards some companies in a certain industry or government connected firms. With regards to the contribution ratio, the managers with the government and research backgrounds have relatively higher coefficients of 0.0284 and 0.0213, respectively. The managers with an investment background are placed third, at 0.0165. These results are consistent with our prediction that managers may use their particular information advantage to acquire optimal solutions for stock selection. In relation to the return gap, all fund managers reveal a positively correlated and highly significant result, except for the benchmark of the banking background, and suggest that the source of their informational advantage differs. The results of the coefficients of government and investment in the HM and TM models are similar. They both demonstrate their much stronger market timing skill. These findings are in line with our hypothesis regarding market timing, that the fund managers of government background have the ability to interpret the potential future impact of new government policy or social events, and can act on them accordingly. In addition, the fund managers with government as their prime background are found to have superior market timing skills compared with the managers with a research background. In possessing stock holding and market timing skills, the managers with a government background are able to generate the highest risk-adjusted return, which is demonstrated in Table 5.2.A. Since the managers with investment as their prime background do not

Table 5.4: Fama-Macbeth Regression Analysis of Investment Skill on Prior Professional Background

This table summarizes the estimates and t-statistic of regression analysis of investment skills on prime professional background. *, **, and *** represent the statistical significance at the 1%, 5% and 10% level, respectively.

	Dependent Variables									
	Prime Professional background									
	Contribution ratio		Concentration ratio		Return gap		HM		TM	
Government	0.0284	**	0.9951	***	0.2871	***	0.0416	***	0.0009	**
	(2.3629)		-3.8746		(3.3277)		(4.4042)		(2.4475)	
Investment	0.0165	*	-0.1978		0.2356	***	0.0400	***	0.0016	***
	(1.9009)		(-0.8070)		(3.224)		(3.9050)		(3.5630)	
Research	0.0213	**	0.6433	***	0.216	***	0.0199		0.0012	**
	(2.1822)		-3.1656		(2.922)		(1.4722)		(2.4244)	
Banking										
Managerial Replacement	0.0115		-0.2529		-0.0477		0.0019		0.0003	
	(1.6308)		(-0.6252)		(-0.7166)		(0.2571)		(1.1268)	
Joint management	-0.0002		-0.8337	*	-0.0207		-0.0160	***	-0.0009	***
	(-0.0491)		(-1.8828)		(-0.7843)		(-8.1303)		(-10.4334)	
Number of FUM	0.003		57.8078	*	-0.0368		-0.0127	***	-0.0003	***
	(0.5697)		-1.7919		(-1.2873)		(-4.0286)		(-2.9891)	
Overseas	0.0159	**	-3.5778	***	0.0094		0.0120	***	0.0003	**
	(2.4395)		(-4.5790)		(0.2699)		(5.3275)		(2.5925)	
Gender	-0.0078		1.4709	***	0.0031		0.0029		-0.0001	
	(-1.4075)		-4.6802		(0.0648)		(0.7085)		(-0.5718)	
Postgraduate	0.027	***	-0.899	***	0.0886		0.0078		-0.0002	
	(2.9471)		(-3.3736)		(1.3174)		(1.2011)		(-1.1341)	
Fund manager age	-0.0016	***	2.3415	***	-0.3597		-0.1491	***	-0.0023	*
	(-2.9521)		-4.3507		(-1.1519)		(-4.3106)		(-2.1177)	
Fund size	-0.0199	***	-1.1282	*	0.2001	***	0.0342	***	0.0007	***
	(-2.2292)		(-1.7526)		(3.5944)		(6.6830)		(4.6237)	
Fund age	-0.0037	**	-2.0852	***	-0.0584	*	0.0023		0.0001	
	(-0.8518)		(-5.3381)		(-2.8483)		(0.9260)		(1.2478)	
Tenure	-0.0011		-0.0674		0.0299	**	0.0090	***	0.0003	***
	(-0.4871)		(-1.4365)		(1.8531)		(5.2119)		(4.3511)	
Expense	2.2877		0.0003	**	-14.921	**	-0.4627		0.0001	
	(3.1708)		-0.0025		(-2.4258)		(-0.4326)		(0.0022)	
CONSTANT	0.1331		45.5184	***	0.4244		0.1754		0.0013	
	(0.621)		-4.6872		(0.517)		(1.5197)		(0.3147)	
Obs.	21092		21092		64760		64760		64760	
Adjusted R^2	5.16%		9.97%		7.42%		4.07%		2.62%	

have proper stock holding skill, but rather market timing skill, the return on funds that they manage declines dramatically.

Finally, we prove that the risk-adjusted returns from Table 5.2.A are generated and driven by stock holding and market timing skills. Managers with government and research backgrounds are proven to have an informational advantage from different sources by testing their stock holding and market timing skills. This is in line with our hypothesis that fund managers benefit from a comparative advantage accumulated throughout their career to generate risk-adjusted return, and the source of this informational advantage is subject to its comparative advantage.

6. Robustness Checks

We test the robustness of our results with regard to two different aspects: first, we use the alternative approach to define prior professional background; and second, we use the alternative approach to evaluate the association between performance and prior professional experience.

6.1 Alternative Prior Professional Background

In this section, we only report the association between the alternative professional background and fund performance, since finding in the fund management style, stock holding, and market timing are robust to these alternative approaches. In Section 3.2, we define the prime professional background for a manager using the background score system, which takes both tenure and position level into consideration. Panel A in Table 6.1 presents the coefficients of different prime professional backgrounds against raw

return and risk-adjusted returns, where the prime professional background is defined by the industrial background in which the manager has stayed the longest. The intuition behind this approach is that the longer a fund manager stays in an industry, the more related work they would conduct, and subsequently, the more experience and comparative advantage they would gain. Panel B in Table 6.1 presents the results using another prime professional background defined by the background in which the manager achieves the highest position level. Similarly, the rationale is that the higher position would provide a fund manager with superior resources and access to internal channels, giving them a deeper understanding of this particular background. The results state that the funds managed by the managers with the investment background lose the return when the risk-loading factors are controlled for, while the results regarding the managers with research and government backgrounds remain the same in raw return and risk-adjusted returns. Moreover, concerns regarding the definition of the multiple professional backgrounds of a manager have increased, as we have not taken tenure and level of the position into account. We differentiate the impact of each segment of background experience on fund return by assigning the actual background score derived from Section 3.2 into each career dummy (rather than assigning one to a career dummy that is related to this manager's career path, and zero to a career dummy that is not related to this manager). Table 6.2 presents the results that are in line with Table 5.2.B, which suggests that our testing results related to the multiple professional backgrounds are robust. In terms of significance, the quality of the results from Table 5.2 is the best among these different approaches, since it provides a relatively higher

Table 6.1: Fama-Macbeth Regression Analysis of Performance on Alternative Prime Professional Background

Panel A reports the estimates and t-statistic of regression analysis of performance on alternative prime professional background defined by the industrial background in which the manager has stayed the longest. Panel B presents results of regression analysis of performance on alternative prime professional background defined by the background in which the manager achieves the highest position level. (Performance is measured in raw return (Rof), and risk-adjusted return (CAPM and Four-Factor)) *, **, and *** represent the statistical significance at the 1%, 5% and 10% level, respectively.

	Dependent Variable: Fund Performance Evaluation											
	Panel A: Long Tenure as Professional Background						Panel B: High Position as Professional Background					
	Rof		CAPM Return		Four-Factor Return		Rof		CAPM Return		Four-Factor Return	
Government	0.1803	***	0.1578	**	0.1121	*	0.2667	***	0.2646	***	0.2458	***
	(2.8450)		(2.4996)		(1.8360)		(3.1997)		(3.1982)		(3.3282)	
Investment	0.1661	***	0.1261	**	0.1216	**	0.2354	***	0.2163	***	0.195	***
	(2.6958)		(2.2753)		(2.1475)		(3.4397)		(3.3348)		(3.3292)	
Research	0.1411	**	0.1297	**	0.1496	***	0.2134	***	0.2227	***	0.2104	***
	(2.415)		(2.3252)		(2.6826)		(3.0317)		(3.3093)		(3.5269)	
Banking												
Managerial Replacement	-0.0252		-0.0146		-0.0075		-0.0252		-0.0126		-0.0061	
	(-0.3261)		(-0.1997)		(-0.1062)		(-0.3303)		(-0.1732)		(-0.0862)	
Joint management	-0.0751	**	-0.0667	**	-0.067	**	-0.0653	**	-0.0557	**	-0.0556	*
	(-2.3361)		(-2.2746)		(-2.4381)		(-1.9414)		(-1.8125)		(-1.9045)	
Number of FUM	-0.0145		-0.0175		0.0017		-0.0171		-0.02		-0.0041	
	(-0.4697)		(-0.5904)		(0.0641)		(-0.578)		(-0.6974)		(-0.152)	
Overseas	0.0022		0.0128		0.0337		-0.0007		0.007		0.0295	
	(0.0543)		(0.3393)		(0.9345)		(-0.0175)		(0.1817)		(0.8076)	
Gender	0.0129		-0.0145		-0.0024		-0.0036		-0.0313		-0.0165	
	(0.2513)		(-0.2999)		(-0.0536)		(-0.0706)		(-0.6515)		(-0.3679)	
Postgraduate	0.1698	**	0.1872	***	0.1914	***	0.1681	**	0.1943	***	0.206	***
	(2.5993)		(2.9837)		(3.2279)		(2.5532)		(3.0559)		(3.4235)	
Fund manager age	-1.1327	***	-1.1222	***	-1.1809	***	-1.1282	***	-1.0844	***	-1.204	***
	(-2.9971)		(-3.2738)		(-3.6372)		(-2.9304)		(-3.0817)		(-3.609)	
Fund size	-0.0258		-0.0049		0.0439		-0.0253		-0.0014		0.0435	
	(-0.3984)		(-0.0788)		(0.8134)		(-0.3911)		(-0.0229)		(0.7967)	
Fund age	-0.0563	**	-0.0193		-0.0017		-0.0573	***	-0.0212		-0.005	
	(-2.8631)		(-0.8398)		(-0.0786)		(-2.8767)		(-0.9041)		(-0.2173)	
Tenure	0.0207		0.0089		0.0161		0.0198		0.0075		0.0158	
	(1.3835)		(0.573)		(1.1303)		(1.3223)		(0.4745)		(1.0785)	
Expense	-59.5714	***	-58.1654	***	-50.5598	***	-58.7035	***	-56.7999	***	-48.8347	***
	(-3.0815)		(-3.0904)		(-2.995)		(-3.0798)		(-3.0966)		(-2.9885)	
CONSTANT	8.7058	***	7.3048	***	6.3867	***	8.5469	***	7.0146	***	6.2065	***
	(4.6736)		(4.0887)		(4.0058)		(4.6455)		(4.0355)		(3.9819)	
Obs.	64760		64760		64760		64760		64760		64760	
Adjusted R^2	7.51%		8.28%		7.63%		6.89%		7.74%		7.09%	

Table 6.2: Fama-Macbeth Regression Analysis of Fund Performance on Alternative Multiple Professional Background

This table summarizes the estimates and t-statistic of regression analysis of performance on alternative multiple professional background in which assigning the actual background score derived from Section 3.2 into each career dummy. (Performance is measured in raw return (Rof), and risk-adjusted return (CAPM and Four-Factor)) *, **, and *** represent the statistical significance at the 1%, 5% and 10% level, respectively.

	Dependent Variable: Fund Performance Evaluation					
	Background Score System Defining Professional Background					
	Rof		CAPM Return		Four-Factor Return	
Government	0.1146	***	0.0608	**	0.1215	**
	(3.8494)		(2.2495)		(4.2846)	
Investment	0.0562	***	0.0224		0.0624	***
	(2.9455)		(1.3416)		(3.4966)	
Research	0.0604	***	0.0384	**	0.0703	***
	(3.0225)		(1.8098)		(3.3651)	
Banking	-0.2068	***	-0.2295	***	-0.1928	***
	(-5.5376)		(-7.2554)		(-5.5054)	
Managerial Replacement	-0.0009		0.0351		0.0343	
	(-0.0113)		(0.4450)		(0.4238)	
Joint management	-0.0761	**	-0.0608	**	-0.0596	**
	(-2.4821)		(-2.2458)		(-2.1010)	
Number of FUM	-0.0122		0.0051		-0.0206	
	(-0.4129)		(0.1893)		(-0.7242)	
Overseas	-0.0004		0.0238		-0.0109	
	(-0.0101)		(0.6030)		(-0.2666)	
Gender	0.0582		0.0292		0.0210	
	(1.0542)		(0.5898)		(0.3993)	
Postgraduate	0.1819	***	0.2155	***	0.1927	***
	(2.7107)		(3.4165)		(2.9054)	
Fund manager age	-1.2881	***	-1.2297	***	-1.2499	***
	(-3.0967)		(-3.2517)		(-3.1131)	
Fund size	-0.0400		0.0272		-0.0207	
	(-0.6067)		(0.4988)		(-0.3196)	
Fund age	-0.0649	***	-0.0197		-0.0381	
	(-3.3040)		(-0.7754)		(-1.4632)	
Tenure	0.0239		0.0175		0.0136	
	(1.4700)		(1.2077)		(0.8562)	
Expense	-102.7195	***	-88.0281	***	-103.4859	***
	(-3.7220)		(-3.5807)		(-3.6879)	
CONSTANT	13.0440	***	10.0725	***	11.7697	***
	(5.0371)		(4.4638)		(4.5027)	
Obs.	64760		64760		64760	
Adjusted R^2	9.69%		9.45%		10.60%	

correlation at the highest significant level.

6.2 Alternative Regression Method

In this section, we examine the association between professional background and fund performance using an alternative regression approach, named the Fixed Effect Model, while controlling for time-varying fund characteristics, fund manager characteristics, fund fixed effect, and time fixed effect. The purpose of adding time fixed effect and fund fixed effect is to observe the other unobserved control variables. The formula is shown as followed:

$$Performance(y)_{i,j,t} = \alpha_t + \gamma_i + \beta X_{i,t} + \lambda Z_j + \varepsilon_{i,j,t} \qquad (\mathbf{6.1})$$

where $Performance(y)_{i,j,t}$ indicates the fund performance in raw return or risk-adjusted return against fund i, managed by j number of fund managers at time t; $X_{i,t}$ represents the characteristics of fund i and that of fund manager jth who manages the fund i; Z_j is the industry dummy for manager j; α_t and γ_i are the monthly fixed effect and fund fixed effect, respectively.

Results from Table 6.3 provide similar results to Table 5.2. Managers with government as their primary professional background outperform the other three backgrounds in raw return and risk-adjusted return, followed by the managers with the research background. The returns generated by the managers with the investment background decline dramatically after controlling the risk-loading factors, whereas the results for managers from the government and research backgrounds remain constant throughout all measurements. These results further verify the robustness of our previous findings.

Table 6.3: Fixed-Effect Regression Analysis of Fund Performance on Prior Professional Background

This table summarizes the estimates and t-statistic of fixed-effect regression analysis of performance on prime professional background in Panel A, and multiple professional background in Panel B. (Performance is measured in raw return (Rof), and risk-adjusted return (CAPM and Four-Factor)) *, **, and *** represent the statistical significance at the 1%, 5% and 10% level, respectively.

	Fund Performance Evaluation: Fixed Effect model											
	Panel A: Prime Professional background						Panel B: Multiple Professional background					
	Rof		CAPM Return		Four-Factor Return		Rof		CAPM Return		Four-Factor Return	
Government	0.4191	***	0.4047	***	0.3600	***	0.1769	**	0.157	**	0.1865	**
	(0.1265)		(3.2995)		(0.1074)		(2.2769)		(2.379)		(2.4745)	
Investment	0.2089	**	0.1744	*	0.1763	**	0.0510		0.0672	*	0.0432	
	(0.0964)		(1.8645)		(0.0819		(1.0657)		(1.6554)		(0.9316)	
Research	0.2250	**	0.2132	**	0.2035	**	0.0913	*	0.1044	**	0.0945	*
	(0.0934)		(2.3536)		(0.0793)		(1.7602)		(2.37)		(1.8792)	
Banking							-0.1607	**	-0.1432	**	-0.1406	**
							(-2.2489)		(-2.3599)		(-2.0294)	
Managerial Replacement	-0.0739		-0.0586		-0.0340		-0.0745		-0.0345		-0.0592	
	(0.0620)		(-0.9749)		(0.0527)		(-1.2009)		(-0.6559)		(-0.9841)	
Joint management	-0.0317		-0.0187		-0.0194		-0.0322		-0.0202		-0.0194	
	(0.0316)		(-0.6082)		(0.0268)		(-1.0202)		(-0.7522)		(-0.6317)	
Number of FUM	-0.0288		-0.0340		-0.0346		-0.0297		-0.0359	*	-0.0351	*
	(0.0216)		(-1.6212)		(0.0184)		(-1.3732)		(-1.956)		(-1.6753)	
Overseas	0.1607	**	0.1305	**	0.1391	**	0.1485	**	0.1243	**	0.1179	*
	(0.0650)		(2.0717)		(0.0552)		(2.2740)		(2.2416)		(1.8615)	
Gender	0.0779		0.0896		0.0260		0.0913		0.0413		0.1040	*
	(0.0610)		(1.5130)		(0.0518)		(1.4950)		(0.797)		(1.7564)	
Postgraduate	0.0233		0.0274		-0.0023		0.0036		-0.0184		0.0122	
	(0.0973)		(0.2899)		(0.0826)		(0.0372)		(-0.2238)		(0.1293)	
Fund manager age	-2.0893	***	-1.8304	***	-1.7216	***	-2.0394	***	-1.6765	***	-1.7906	***
	(0.4502)		(-4.1917)		(0.3823)		(-4.5018)		(-4.3587)		(-4.0753)	
Fund size	-0.5607	***	-0.4695	***	-0.3761	***	-0.5619	***	-0.3778	***	-0.4706	***
	(0.0506)		(-9.5663)		(0.0430)		(-11.0980)		(-8.7895)		(-9.5850)	
Tenure	0.0163		0.0139		0.0186		0.0168		0.0189	*	0.0143	
	(0.0114)		(1.2606)		(0.0097)		(1.4687)		(1.949)		(1.2903)	
Expense	-108.5390	***	-102.4760	***	-78.0551	***	-108.5600	***	-78.0662	***	-102.488	***
	(-57.950)		(-49.417)		(-48.60)		(-50.772)		(-43.004)		(-49.423)	
Fund fixed effect	Yes		Yes		Yes		Yes		Yes		Yes	
Month fixed effect	Yes		Yes		Yes		Yes		Yes		Yes	
Obs.	64760		64760		64760		64760		64760		64760	
Adjusted R^2	3.40%		3.12%		2.02%		3.41%		2.04%		3.12%	

7. Fund Manager Professional Experience and New Money Growth

The managers with the banking professional background are found to be the worst performing in the managers group throughout our analysis. Why then does a fund management company hire a fund management candidate with banking experience? One possible answer to this question is that some fund companies operate as subsidiary corporate of banks; therefore they promote some of their staff to fund managers instead of training a new fund manager. The other possible explanation is that fund managers with banking experience may attract more new money growth to the mutual fund that they manage. Banking is the prime distribution channel for retail financial products including mutual funds (PWC, 2017). Every branch of a bank is well distributed geographically, and individual investors prefer to consult with the financial advisors from the local branch of a bank and purchase a mutual fund directly from them. The personal network within the banking industry that the fund manager with the banking professional background has built provides special advantages when selling the mutual fund that it manages. This is a valuable resource that mutual fund companies seek.

Our analysis of fund managers with different professional background on their new money flow abilities aims to provide evidence that the managers with the banking background bring more cash flow compared with the other three backgrounds. Under the assumption that new money flow is received at a certain time, the new money growth to a fund is calculated as the difference between Net Asset Value of the fund in the current month and the value appreciation in Net Asset Value of the fund in the last

month. This is then divided by the net asset value of the fund in the last month. It is also called new money growth rate (NMFR) and is shown in the formula below:

$$NMFR_{i,t} = \frac{TNA_{i,t} - TNA_{i,t-1}(1 + RoF_{i,t})}{TNA_{i,t-1}} \qquad (\mathbf{7.1})$$

where $NMFR_{i,t}$ denotes the raw return of fund i at season t; $TNA_{i,t}$ stands for total net asset for fund i at season t. We then take the Fama-Macbeth regression of NMFR on professional backgrounds and control for fund characteristics and manager characteristics.

The results in Table 7.1 indicate that managers with banking as their prime professional background have the best ability to attract new money flow, since the prime government, research, and investment backgrounds are negatively correlated to the new money flow at 1% significance. In addition, the estimates in multiple professional backgrounds suggest that having professional experience in the banking industry contributes to the ability to attract new money flow, whereas the other backgrounds are not significantly correlated to this ability. Interestingly, the control variables provide some insight as to how investors select a fund. The coefficient of prior performance is correlated to NMFR at 10% significance, which suggests that an investor may refer to the prior performance of a fund. In addition, they also prefer to purchase the young fund or a large value of total net asset. These findings suggest that most Chinese investors purchase a fund without examining the characteristics of the fund manager who manages it.

Since some Chinese investors take the fund's prior performance into account, we study the correlation between NMFR and the past raw return that the managers with the

government background can generate. We observe that the managers with government as their prime background outperform the managers with banking as their prime background by 0.284% monthly in raw return, which translates to 0.854% seasonally. The coefficient of past performance is 0.4298% correlated to NMFR, which means the high raw return that the managers with the government background made only make them $0.3670 \times 10^{-4}\%$ $(0.854\% \times 0.4298\%)$, thus outperforming those with the banking background. In contrast, the fund managers with banking as their prime professional background with 0.0777% in NMFR outperform the managers with the government background. In conclusion, the managers with the banking background compensate for their lowest performance in generating returns by attracting more new money flow.

To extend the scope of our last observation, we determine which prime professional background is most likely to lose new money growth due to its past performance. Once again, we study a manager with a certain background by applying the Fama-Macbeth regression of NMFR on a prime professional background, the return generated by the manager of this background and total return. In Table 7.2, we find that the past performance of managers with the research, investment and government backgrounds is found is to have no correlation to abstracting new money flow, whereas the past performance of the fund manager with a banking background is less likely to affect the NMFR.

In conclusion, the fund managers with banking as their prime professional background have the strongest ability to attract new money flow, although they

Table 7.1: Fama-Macbeth Regression Analysis of Fund New Money Growth on Prior Professional Background

This table summarizes the estimates and t-statistic of Fama-Macbeth regression analysis of new money growth on prime professional background and multiple professional background respectively. *, **, and *** represent the statistical significance at the 1%, 5% and 10% level, respectively.

	Dependent Variable: New Money Growth(%)			
	Prime Professional background		Multiple Professional background	
Government	-0.0777	***	0.0257	
	(-1.7619)		(0.6102)	
Investment	-0.0811	***	-0.001	
	(-1.836)		(-0.0754)	
Research	-0.1229	***	-0.0158	
	(-2.0138)		(-0.4659)	
Banking			0.1257	***
			(1.7386)	
Past Performance	0.4298	*	0.4947	
	(1.8023)		(1.63)	
Managerial Replacement	-0.0574		-0.0627	
	(-1.2143)		(-1.1384)	
Joint management	-0.0456		-0.0467	
	(-1.2314)		(-1.1603)	
Number of FUM	-0.0334		-0.0239	
	(-1.0215)		(-0.8409)	
Overseas	-0.0755		-0.1066	*
	(-1.3741)		(-1.7893)	
Gender	0.0008		0.0049	
	(0.0455)		(0.258)	
Postgraduate	-0.0855		-0.0858	
	(-1.0582)		(-1.0563)	
Fund manager age	-0.0006		0.0002	
	(-0.0833)		(0.0211)	
Fund size	0.1685	***	0.1797	
	(2.4344)		(2.4135)	
Fund age	-0.0225		-0.0289	**
	(-0.8234)		(-0.8402)	
Tenure	-0.0089		-0.0147	
	(-1.0926)		(-1.5864)	
Expense	-2.6039		-2.4507	
	(-1.4949)		(-1.479)	
CONSTANT	0.7631		0.5821	
	(1.083)		(0.9015)	
Obs.	21092		21092	
Adjusted R^2	13.27%		11.62%	

Table 7.2: Fama-Macbeth Regression Analysis of Sensitivity of Money Growth to Prior performance, on Prime Professional Background

This table summarizes the estimates and t-statistic of Fama-Macbeth regression analysis of sensitivity of new money growth on prime professional background. *, **, and *** represent the statistical significance at the 1%, 5% and 10% level, respectively.

Dependent Variable: New Money Growth (%)								
Government	-0.0038							
	(-0.1648)							
Government *Past Performance	0.4031							
	(0.7306)							
Investment			-0.0109					
			(-0.1592)					
Investment *Past Performance			1.2837					
			(1.0157)					
Research					-0.0395			
					(-0.6139)			
Research *Past Performance					1.0266			
					(1.149)			
Banking							0.0532	**
							(1.7685)	
Banking *Past Performance							-1.2329	**
							(-2.2049)	
Past Performance	0.0696		0.7605	**	-0.1681		0.2995	**
	(0.1494)		(2.5221)		(-0.2373)		(2.1356)	
Managerial Replacement	-0.0471		-0.0572		-0.0623		0.0133	
	(-0.9142)		(-0.9545)		(-1.0763)		(0.6026)	
Joint management	-0.0281		-0.0161		-0.0089		-0.0447	
	(-0.872)		(-0.4374)		(-0.2504)		(-1.5015)	
Number of FUM	-0.0218	**	-0.0244		-0.0312	**	0.0091	**
	(-0.7871)		(-0.9205)		(-0.9757)		(1.7953)	
Overseas	-0.0562	**	-0.0397		-0.0228		-0.0466	
	(-1.8729)		(-0.8629)		(-0.4809)		(-1.5233)	
Gender	-0.0128		-0.0323		-0.0191		-0.0043	
	(-1.1578)		(-1.4685)		(-1.4991)		(-0.4598)	
Postgraduate	-0.0958		-0.0898		-0.088		-0.1109	
	(-0.9131)		(-0.8709)		(-0.9569)		(-1.0475)	
Fund manager age	-0.0018		-0.0026		-0.0044		0.0026	
	(-0.2769)		(-0.4105)		(-0.6365)		(0.8685)	
Fund size	0.1423		0.1368		0.1319		0.076	
	(2.1311)		(2.1937)		(2.2114)		(1.8301)	(**)
Fund age	-0.0408		-0.0339		-0.034		-0.0127	
	(-1.3548)		(-1.4134)		(-1.4621)		(-1.0843)	
Tenure	-0.009		-0.0096		-0.0026		-0.0061	
	(-1.1785)		(-0.9453)		(-0.4096)		(-1.4283)	
Expense	-0.9485		-0.9926		-1.3253		0.6884	
	(-0.7009)		(-0.6912)		(-0.7986)		(0.6978)	
CONSTANT	0.2821		0.3136		0.5053		-0.298	
	(0.5383)		(0.5745)		(0.74)		(-0.998)	
Obs.	16973		16973		16973		16973	
Adjusted R^2	13.25%		13.62%		12.94%		13.58%	

underperform in relation to the other three prime professional backgrounds, which is in line with the prime distribution channel for mutual funds in China. This result is also consistent with our hypothesis that the managers with diverse prior professional experience perform differently in various aspects and use a range of comparative advantages in order to outperform.

8. Conclusion

The prior professional experience of a manager is significant to the investor in order to evaluate the future opportunity and risk that this manager can bring to a firm. This thesis examines the impact of the Chinese fund managers' differing professional backgrounds on their fund performance and investment style. We use a sample of 680 funds and 1,182 fund managers taken from the Chinese open-ended mutual fund from January 2002 to December 2017. We provide empirical results to demonstrate that the fund manager's prior professional experience affects their fund performance and investment style. Further detailed analysis states that the fund managers with a research background and those of government background have notable stock holding skills, although the return gap and market timing measurements suggest that the sources of their informational advantage may differ. Using a fund manager within the banking sector as a bench mark, we find that managers with government as their professional background have the highest abnormal return while taking least market risk, and the most concentrated portfolio, while they barely chase momentum. Managers from the research background continue to outperform, as they bear less systematic risk and hold

the second most concentrated portfolio, which inclines them towards more valuable stocks. By contrast, managers with an investment background have a high raw return generated by chasing stock momentum, taking higher market risk and holding more diverse portfolios. The fund manager with a banking background makes more new money growth and compensates for their lower performance by generating returns that attract more new money flow. In addition, part of the association between professional experience and fund management is associated with comparative advantages, including information network, technical knowledge, distribution channel, or political sensitivity that are accumulated along the professional career path.

Importantly, we consider that our findings regarding prior professional experience, fund performance and fund investment style are not limited to the Chinese mutual fund market. Although the sample we study may be peculiar, we believe that our finding should be consistence with any other emerging capital market. Overall, professional experience is often the most essential part of formation of human capital.

Our future research will examine the performance of fund managed by the manager with government background after Chinese anti-corruption reform and financial regulations mandate. We intend to explore the extent of using their comparative advantage to generate higher abnormal return. In addition, we need to find more related controlled variable and the precise timeline of regulations that is impacted to mutual fund industry.

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