If Busy, Team Up!
When Multitasking Fund Manager Meets Team[*]

Jean J. Chen[a,b], Li Xie[b], and Si Zhou[c]

[a]University of Liverpool
[b]Xi'an Jiaotong-Liverpool University
[c]University of Southampton

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ABSTRACT

This paper empirically investigates the performance consequences of managerial multitasking under various organizational structure for the U.S. mutual fund industry. Using a hand-collected sample of 5,477 unique fund manager names, we find multitasking-team-managed funds significantly outperform multitasking-sole-managed ones. We attribute this performance superiority to multitasking teams' heterogeneity in investment behaviors representing by the diversity in stock and industry sector trading, cross-fund return standard deviation and investment styles. Through exploring further the relation between intra-team diversity on managerial and investment experience, we find that informational diversity across members of the multitasking team serve as one salient driving force to the heterogeneous investment activities and consequently lead to superior fund performance. Our research contribute to both fund managerial multitasking and organizational structure literature by showing the complementary effect of team management on 'busy' fund managers.

Keywords: Fund Manager; Managerial Multitasking; Fund Performance; Team Management

JEL classification: G10, G20, G23

I. Introduction

Over the past two decades, the U.S. mutual fund industry sees a significant increase in the proportion of funds managed by teams. In 2010, more than 70% of all U.S. domestic equity mutual funds were under team management compared to only 30% in 1992 (Patel and Sarkissian (2015)). Despite the large effort devoted by economics and social psychology research, from a theoretical perspective, address the benefits of team management in confronting complex situations and facilitating the informational diversity (See for example Sharpe (1981), Lazear (1999), Jehn, Northcraft, and Neale (1999), and Brown (2000)), the existing empirical studies offers mixed findings concerning the advantage of teams, for example, Chen, Hong, Huang, and Kubik (2004) and Bär, Kempf, and Ruenzi (2011) find negative performance consequences of team management while Prather and Middleton (2002, 2006), Bliss, Potter, and Schwarz (2008), and Bär et al. (2011) suggest that team-based management provides no overall gains over single-managed funds and even gives rise to lower performance. A more recent research by (Patel and Sarkissian (2015)), however, argues that the performance underestimation of team management by prior studies can be primarily attributed to the inaccuracy in the dataset selected. Following the theoretical argument and the inconclusive empirical findings, it still remains the an open question regarding the influence of team features and its performance consequences.

In this paper we empirically investigate the impact of managerial multitasking on fund performance from the perspective of organizational structure. The motivation of our investigation is twofold. Firstly, the prevalence of multitasking fund managers raise the concern of fund managers' capabilities, particularly when doubts have been cast, from numerous research, upon managers' ability of generating good performance, however, evidence related to performance consequences from managerial multitasking is limited. Secondly and more importantly, team management potentially complement the previously documented drawbacks of managerial multitasking. On the one hand, existing studies attribute the effort distraction causing by multitasking to be the driving force of inferior performance (See for example Chen and Lai (2012) and Agarwal, Ma, and Mullally (2016)). Given multitasking managers as one type of busyness of corporate executives, their limited attention and energy result in a detrimental impact on the end users of products they managed. On the other hand, classical social psychology and economics literature has highlighted the potential benefits of team structure. For example, Hill (1982) suggests that the pooling and integrating information to form a solution is the main reason for the superiority of teams over individuals. Hinsz, Tindale, and Vollrath (1997) argues that, when the task is complex with high levels of uncertainty, team mem-

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bers tend to pool and integrate their resources and correct each others error. In addition, Sharpe (1981) suggests that teamwork in the fund management industry can reduce the possibility of the occurrence of a serious error in the management of funds made by a particular manager, thus alleviating the danger of overall fund performance. Thus, one possible positive consequence based on the aforementioned theoretical implications of team is that the intra-team information pooling and resources integration and the error correction across team members may exert certain effort which can complement the effort distraction of managerial multitasking.

Based on such two-fold motivation, we start by investigating the performance consequence of multitasking under different managerial organization structure using a sample of 3,832 funds with 5,477 identified unique fund managers. We consistently find that funds managed by multitasking teams largely outperform funds managed by multitasking sole managers showing performance gaps ranged from 44 to 121 basis points per annum across various performance measures. Our findings also survive the robustness check by using an instrumental variable approach and show that multitasking-team managed funds lead to better performance.

To further explore whether the nature of team can indeed complement the drawbacks of managerial multitasking and lead to better performance, we firstly examine the performance consequences from the divergence of investment activities under team- and non-team based multitasking management. We use four different measures to proxy such heterogeneity: (1) stock trading difference after considering stocks purchased, sold and maintained in the portfolio across different funds affiliated to one multitasking manager (team); (2) sector trading difference, i.e. the trading differences based on industrial sectors; (3) cross-fund return standard deviation, and (4) divergence in investment style. We find that, for multitasking management teams, all of the four heterogeneity measures are positively related to both their averaged performance and their cross-sectional performance ranks. For example, one unit increase in the stock trading difference and sector trading difference will lead to a 228- and 120- basis points increase per annum in team managers' averaged absolute and relative performance, respectively. Secondly, we advance our investigation on the casual relation of the managerial structure and its consequent divergence level of investment activities amongst underlying funds given the ambiguous findings documented in both economic and social psychology literature regarding the process of team decision making. We find team-based multitasking managers indeed show more divergent opinion through considering significantly higher level of heterogeneity in investment activities across their underlying products. These series of results further confirm the argument of divergence in managers' investment behavior across af-

filiated funds being the channel of multitasking team-based managers outperforming the multitasking sole ones.

Finally, to gain insight into the driving force of multitasking teams' heterogeneous investment behavior, we extend our research to examine the characteristics embedded in teams and their consequent influence on decision making. Existing literature suggests that facilitating informational diversity serves as one salient feature of team structure, particularly, the gains of team diversity are greatest when team members have different information or skill sets (See for example Stasser and Stewart (1992), Lazear (1999), Jehn et al. (1999) and etc.). Previous fund research argues that fund investment activities are closely related to managers' characteristics (Chevalier and Ellison (1999a,b) and Baks (2003)) and to the managerial organizational structure (Bär et al. (2011)). We thus give the consideration of both arguments by analyzing the possible connection between intra-team diversity and our previously documented heterogeneity in investment behaviors. We design three different measures, i.e. managerial diversity, managerial experience diversity, and investment experience diversity (i.e. including diversity in managing fund styles and investing into industrial sectors), to proxy the diversity among team members in experience and expertise. Our results suggest that multitasking team with more diversity in managerial and investment experience across its members is likely to conduct more heterogeneous investment activities for its underlying funds.

Further, to address the economic significance of such team diversity and its implication on fund performance from the perspective of informational diversity. We regress our designed team diversity measures (i.e. managerial experience, experience in fund style and industrial sector investment diversity) on individual fund performance, finding that teams containing managers with larger variety in managerial and investment experience deliver higher factor-adjusted returns. Meanwhile, to shed further lights on the possible spillover effect of team diversity under the context of managerial multitasking, we consider an out-of-sample portfolio approach to compare the performance delivered by portfolios containing funds managed by either singletasking or multitasking teams with various team diversity levels, and find that the portfolio of multitasking-based funds deliver significant performance premium over the one containing singletasking-based ones. For example, when fixing the constituting funds of both portfolios to be at the same diversity level, we find that the multitasking-based portfolios outperform the singletasking one with a scale of performance gaps ranged between 81 to 121 basis points per annum.

Our paper contributes to the literature in the following ways. First, our study contributes to the literature examining performance consequences of managerial multitasking. Existing studies such asAgarwal et al. (2016) and Chen and Lai (2012) have suggested

the underperformance of the multitasking funds, highlighting the agency problem caused by managerial multitasking as one types of busyness for corporate directors. Our findings highlight that team nature can exert certain effort which complements effort distraction of managerial multitasking, implying that the potential benefits from multitasking team managers may mitigate such agency problem. Second, our research contributes to the ongoing debate of team influence on fund managers' decision making. Existing literature investigating the impact of team management on fund performance suggests mixed empirical evidence[1]. More importantly, existing studies which favor the role of team management in fund management does not explore which dimension(s) in team nature contribute(s) to the superior performance of team-managed funds. Our paper contributes to this line of research by considering a more complex structural setting in which we investigating the interaction of team management with managerial multitasking. Our main results favor the positive effect of team management on fund performance from the multitasking perspective. More importantly, our incremental contribution is to identify multitasking managers' investment activities embodying informational diversity as one salient team nature, and further explore the specific dimensions within our defined team setting which influence such informational diversity. These two major findings facilitate the current theoretical and empirical understanding of why team benefits for fund performance. Third, we contribute to the broad empirical literature on team diversity (See for example, Lazear (1999), Jehn et al. (1999) and etc.). Most of these studies are based on lab experiment or with small number of observations. In our context of team management in fund industry, we identify various proxies of team diversity and empirically confirm the positive impact of team diversity on team performance through bridging the informational diversity amongst team members with their heterogeneous selection of actual investment decisions.

The rest of this paper is structured as follows: Section II describes the data and variable constructions. Section III of fund performance and multitasking organizational forms. Section IV addresses the effect of team diversity on investment activities on multitasking team managers. Section V examines the influence of intra-team favoritism and its performance consequences. Section VI offers the conclusion.

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[1]Studies such as Prather and Middleton (2002, 2006), Bliss et al. (2008), and Bär et al. (2011) find that team-based management provides no overall gains over single-managed funds and even gives rise to lower performance; whereas Patel and Sarkissian (2015) suggest that the differentials regarding fund performance and risk taking embedded in team-managed funds can be primarily attributed to the inaccuracy database selection. Using a hand-collected dataset they claim that team-based funds outperform peer one by taking no excessive risk.

II. Data and Fund Characteristics

A. Data source

We collect the mutual fund data from three major sources. First, fund reported returns and characteristics are obtained from the Center for Research in Security Prices (CRSP) Survivorship Bias Free Mutual Fund Database. Our data sample spans the period between 1992 and 2014. We restrict our focus to open-end US domicile actively managed equity mutual funds and eliminate balanced, sector, bond, money market, international and index funds[2]. Second, fund stock holdings are collected from Thompson Mutual Fund Holdings Database (Formerly CDA/Spectrum Mutual Fund Holdings Database). We screen out fund observations which have less than ten stocks in their holdings or have less than $1 million under management in the previous quarter. We connect the fund fundamentals with their holdings through MFLINKS files accessed from the Wharton Research Data Services. In addition, we avoid the multiple counting issue by aggregating the share-class level total net assets to generate the fund size at the portfolio level. We also compute the portfolio level fund returns and other fund fundamentals by taking the valued weighted average across multiple share classes.

Third, following Patel and Sarkissian (2015) who have addressed the issue of inaccuracy of managerial information obtained from the CRSP, we collect fund manager names from fund's NSAR-B and 485BPOS fillings through the SEC EDGAR website. To identify corresponding fillings of the sampled funds in the SEC EDGAR, we use the fund names given by CRSP, and manually match them with the record in SEC in order to obtain their central index key (CIK). To conduct the matching procedure, funds in our sample must have the exact same name as those included in the SEC EDGAR database. We then search funds' managerial information by accessing the relevant fillings using corresponding funds' CIKs.

To identify the multitasking fund managers, we conduct a rigorous procedure to complement the CRSP dataset. Firstly, we substitute the fund managerial information provided by CRSP with those collected from funds' SEC fillings by linking both dataset using CIK. We exclude funds with non-specified managerial information, namely, funds including terms such as "Management team", "Investment advisers", "Committee" etc. Secondly we collect managers' full names (including middle names and suffixes) when

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[2]We select funds with the following Lipper objectives: ABR, CA, DL, EI, EMN, G, GI, LSE, MC, MR, SG and SP. Our sampled funds fall into two macro sections of the CRSP style, namely, Equity Domestic Cap-based (EDC) and Equity Domestic Style (EDS).

funds have similar manager names[3]. Managers are identified as multitasking managers only if one has at least two distinct funds under management at the same time.

Our fund manager dataset finally contains in total 5,477 unique names and each of them maintains in average 2.24 funds. Figure 1 describes the proportion of funds managed by multitasking managers in our sampled fund universe. The plot sees a rapid growth in managers' multitasking. In 1995, only 35% of the funds were managed by multitasking managers and the percentage increase dramatically to almost 75% in 2010. Figure 1 also plots the proportion of total assets under the management of multitasking managers. Despite its sudden drops in 1995 and 2000, there has been a gradual increase in the growth of total assets managed by multitasking fund managers through the sample period.

[insert Figure 1 about here]

Figure 2 plots the proportion of multitasking funds which are simultaneously under team management over the sampled period. The sampled data indicates an increasing trend on the number of multitasking team in fund management. Particularly in 2003, it sees a significant increase for almost 20% in the fraction of multitasking teams compared with that in 2002. It can be partly explained by the amendments initiated by the SEC in 2004 which requires the registered management investment companies to disclose in their prospectus if their underlying funds are under team management and also the components of the management teams[4].

[insert Figure 2 about here]

B.   Multitasking organizational forms

The characterization embedded in team organizational forms could lead to distinct impact from the solo forms on processing information as well as making decisions. Early research on social psychology and behavioral decision making views group to facilitate its members to pool resources and recognize relevant information so as to reduce personal

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[3]We rely on Internet search engines and social network platforms to complete manager names when the information are missing from the SEC fillings. We search managers' full names in the same fashion when initials are used for forenames and middle names.

[4]SEC suggested the amendment was due to effective on October 1, 2004 (See SEC: Disclosure Regarding Portfolio Managers of Registered Management Investment Companies, 17 CFR Parts 239, 249, 270 and 274, Release No: 33-8458; 34-50227; IC-26533; File No: S7-12-04), but such a motion was initialized following the witness statement by Paul F. Roye, Director of the SEC Investment Management Division, made on March 10, 2004 during the hearing before the Committee on Banking, Housing, and Urban Affairs of the U.S. Senate.

bias (Hinsz et al. (1997) and Bikhchandani, Hirshleifer, and Welch (1998)). Modern social psychology research argues that the consequence of team operation is subject to the levels of group cohesion (See for example Myers and Lamm (1976) and Isenberg (1986)). Thus, the interaction among members of the organization could serve as the major distinct feature for teams when comparing with sole forms.

Despite the natural classification of team and sole organizations, we observe in our dataset the that multitasking managerial structure appears to have a third type of organizational form, that is, multitasking managers not only conduct sole management for part of their funds but simultaneously work as team members for their other concurrently managed funds. Given the arguments from the social comparison theory[5] that people prefer to evaluate their beliefs through comparing with other team member(s) who appears to have more advantage or expertise when making group decision Suls, Martin, and Wheeler (2000), the presence of multitasking managers from the third type could potentially induces the ambiguity of group influence. One justification for that is superior fund managers might be given additional products (Agarwal et al. (2016)), and be allocated more capital to better utilize their skills (Berk, van Binsbergen, and Liu (2014))[6]. Based on such justification, the multitasking managers from the third type are thus likely to become the "fashion leader" when working in teams, and hence could largely influence the other members in the team (Bikhchandani et al. (1998)). In addition, given that team view is highly correlated with the initial position from each of the individual team members, it would further reduce the likelihood of multitasking managers being swayed by other team members(Teger and Pruitt (1967)).

Therefore, to better examine the impact of team organization and to isolate the potential influence triggered by the aforementioned scenario that manager work simultaneously in team and by solo, we classify the sampled multitasking managers into three forms: (1) Strict multitasking sole (SMS, hereafter): A multitasking manager conducts management duties without teaming up with others for all of her affiliated funds; (2)Strict multitasking team (SMT, hereafter): A multitasking manager conduct management duties for all of her affiliated funds only by teaming up with other managers; (3)Mixed multitasking (MM, hereafter): A multitasking manager not only conducts sole management for part of her funds but simultaneously works as a team member for other affiliated

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[5]Brown (2000) argues that group decision making can be explained from three approaches, namely, the social comparison theory (Festinger (1954) and Sanders and Baron (1977)), the persuasive arguments theory (Burnstein and Vinokur (1973)), and intergroup competition (Turner (1987)).

[6]The cross-sectional mean of asset under management for the the third type multitasking managers in our dataset is $2,819 million, whereas it is $2651 million and $2064 million for the sole and team multitasking managers, respectively.

funds. By comparing fund performance from funds under the management of the first two types of organizational forms, we are able to examine the pure effect of team organizations on multitasking management. Figure 3 depict the proportion of the three types of multitasking managers. It is not surprising to see a significant increase in the number of SMT managers, from 20% in 1992 to over 60% in 2014, since the number of funds under team-based multitasking management are tripled over the last two decades.

[insert Figure 3 about here]

C.   Fund performance

To measure individual fund performance we calculate the adjusted return based on various factor pricing model, namely, the Carhart (1997) four-factor model; the Pastor and Stambaugh (2003) liquidity model and the Ferson and Schadt (1996) conditional model. The Carhart model has the following specifications:

$$R_{i,t} - Rf_t = \alpha_i + \beta_i^M(Rm_t - Rf_t) + \beta_i^{SMB}SMB_t + \beta_i^{HML}HML_t + \beta_i^{MOM}MOM_t + \epsilon_{i,t}$$

where the term $R_{i,t} - Rf_t$ is the excess return of fund i relative to the risk-free rate. $Rm_t - Rf_t$ denotes the market excess return. SMB_t is the return difference between the portfolios of small and big stocks. HML_t is the return difference between the high and low book-to-market stocks. MOM_t is the return difference between the portfolios of stocks with high and low returns in the previous year. The Pastor-Stambaugh model nests the Carhart model with an additional liquidity factor. We follow Wermers (2000) to estimate Ferson-Schadt conditional model with the following specification:

$$R_{i,t} - Rf_t = \alpha_i + \beta_i^M(Rm_t - Rf_t) + \beta_i^{SMB}SMB_t + \beta_i^{HML}HML_t + \beta_i^{MOM}MOM_t$$
$$+ \sum_{j=1}^{5} \beta_{i,j}[z_{j,t-1}(RM_t - Rf_t)] + \epsilon_{i,t}$$

where $z_{j,t-1}$ is one of the four demeaned values of lagged macro-economic variables and one additional indicator variable for the month of January. We follow the previous literature to include the following four macro-economic variables: the 1-month Treasury bill yield, the dividend yield of the S&P Index, the Treasury yield spread (long minus short-term bond) and the quality spread in the corporate bond market (low minus high-grade

bonds)[7]. Using the estimated factor loadings and the α_i generated by the four aforementioned factor pricing models we can define the adjusted return for fund i at time t to be,

$$adj\text{-}\alpha_{i,t} \equiv \alpha_i + \epsilon_{i,t}$$

In addition, we follow Kacperczyk, Sialm, and Zheng (2008) to calculate the return gap as an alternative performance measure. The return gap is calculated as the difference between fund's gross returns and its holding returns. To calculate fund holding returns, we construct hypothetical buy-and-hold portfolios for each sampled funds with stock positions from funds most recently disclosed holdings[8]. We then use the notation of $adj\text{-}\alpha_{i,t}^{4F}$, $adj\text{-}\alpha_{i,t}^{PS}$, $adj\text{-}\alpha_{i,t}^{FS}$ and RG to denote the factor adjusted return of fund i based on the Carhart four-factor model, the liquidity factor model, the conditional model and the return gap, respectively.

D. Fund characteristics and summary statistics

We include various fund and manager level characteristics as additional explanatory variables in this research, i.e. fund total net assets (TNA), age, expense ratio, turnover ratio, new money growth (NMG), fund return and risk level. Family TNA is the aggregated TNA of all funds affiliated to one fund family. Fund age is the age taken from the oldest share class in a fund. Expense ratio is the fraction of fund's annual operating expenses in its TNA. Turnover ratio is defined as the minimum value between the aggregated sales

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[7]The risk-free rate, market, size, book-to-market and momentum factors are obtained from Kenneth Frenchs website (`http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html`). The liquidity factor is obtained from Lubos Pastors website (`http://faculty.chicagobooth.edu/lubos.pastor/research/`). The dividend yield is obtained from Robert Shillers website (`http://www.econ.yale.edu/~shiller/data.htm`). The Treasury yield spread is the difference between a 10-year Treasury bond yield and the 3-month Treasury bill yield provided by CRSP. The quality spread is the difference between Moodys BAA-rated corporate bond yield and the AAA-rated corporate bond yield.

[8]The holding return of fund i at the time t can therefore be defined as:

$$RH_{i,t} = W_{i,t}' R_t$$

where $W_{i,t}' = [w_{1,t}^1 \ldots w_{i,t}^m]'$ is the m-dimensional vector of portfolio weight invested into the stocks held by fund i, and for each of the elements in $W_{i,t}'$ satisfies:

$$w_{i,t} = \frac{N_{j,t-\delta} P_{j,t-1}}{\sum\limits_{j=1}^{m} N_{j,t-\delta} P_{j,t-1}}$$

where $N_{j,t-\delta}$ is the number of holdings for stock j at the most recently disclosed date after adjusting for stock splits. We require stock holdings included in our sample to be no older than four quarters; $P_{j,t-1}$ is the stock price from the previous month.

or aggregated purchases of securities divided by the TNA of the fund. We follow Huang, Sialm, and Zhang (2011) to define the fund level NMG, which is the dollar change of funds' TNA net of price appreciation. Fund realized return is calculated as the change in fund's NAV (net of all management expenses and 12b-fees) including reinvested dividends across time.

In addition, to capture the impact of managers' activeness on funds' performance we control another two holding based characteristics, namely, industry concentration and active shares. Fund managers might concentrate their holdings on certain sectors due to their superior knowledge of specific industries. Previous research has found a significant positive relation between the scale of industry concentration and fund performance (Kacperczyk, Sialm, and Zheng (2005)). We adapt the measure proposed by Kacperczyk et al. (2005) to estimate the industry concentration index (ICI hereafter) of the fund portfolio, which is derived from the sum of squared deviation between value weights of each industry held by the portfolios relative to the weights of entire market[9]. Cremers and Petajisto (2009) suggests that fund superior performance can be partly characterized as the consequence of active management. They argues that funds maintaining holdings which are more deviated than the market benchmark outperform ones with less deviated holdings. We include such deviation as an additional determinants of fund performance[10].

For manager-level characteristics, we include managers' tenures, total underlying assets from one manager and number of different fund styles under management. We also calculate the TNA-weighted average value of NMG, turnover, expense ratio and returns from funds affiliated to the same manager.

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[9]The specification is given by,

$$ICI_{i,t} = \sum_{j=1}^{n} (w_{i,j,t} - \bar{w}_{j,t})^2$$

where $w_{i,j,t}$ is the value weights of industry j held by portfolio i at time t and $\bar{w}_{j,t}$ is the weights relative to the market. To adjust the upside biases of ICI due to negatively correlated with the portfolio size, it is scaled by the fund value. Stocks of each fund holdings are mapped into 10 macro sectors according to their SIC classifications.The SIC codes are collected from Kenneth French's website (http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html).

[10]The measure is given by,

$$AS_{i,t} = \frac{1}{2} \sum_{j=1}^{n} |w_{i,j,t}^{fund} - w_{j,t}^{index}|$$

where $w_{i,j,t}^{fund}$ is the value weight of stock j held by portfolio i relative to fund value while $w_{j,t}^{index}$ is the market value weight of stock j relative to a certain market index. The selection of the market indices includes S&P 500, S&P 500/Barra Growth, S&P 500/Barra Value, S&P MidCap400 and S&P SmallCap 600.

Table I reports the summary statistics of sampled fund characteristics between 1992 and 2014. Our final dataset covers in total 3,832 funds from 625 fund complexes with unique portfolios and contains 197,907 fund-month observations. Panel A reports that funds under the management of SMT managers has the smallest size with $770 million in average. It is the MM manager who has the largest underlying assets in average as reported in Panel B. Panel A shows that funds under the management of SMT managers deliver the highest realized returns in average, it is further confirmed in Panel B when using the manager-level averaged returns. Panel C also suggest that the SMT managers outperform others in terms of factor adjusted fund returns as well as in return gaps.

[insert Table I about here]

III. Fund Performance and Multitasking Organizational Forms

In this section, we study the impact of the organizational forms on funds adjusted returns. In Section III.A we examine whether different organizational forms in multitasking management can affect individual fund performance, it is then followed by a robustness check in Section III.B. Section III.C analyses the impact of the heterogeneity in investment activities across manager's underlying funds on their averaged performance.

A. Impact of multitasking organizational forms on individual fund performance

To analyze the impact of organizational forms on individual fund performance, we conduct comparisons on fund performance from four perspectives, that is, the adjusted returns between funds managed by multitasking team and all other funds in the sample; between funds containing at least one strict team manager defined in II.B and all other funds; between funds managed by multitasking-teams and non-teams; between funds containing at least one strict team manager and those managed by strict sole manager. The test specification can be written as,

$$
\begin{aligned}
\textit{adj-}\alpha_{i,t+1} = {} & \alpha_i + \beta_1 \{\text{Organizational Form}\}_{i,t} + \beta_2 log(TNA_{i,t}) + \beta_3 log(Age_{i,t}) \quad (1) \\
& + \beta_4 log(Family\_TNA_{i,t}) + \beta_5 NMG_{i,t} + \beta_6 Expense_{i,t} \\
& + \beta_7 Turnover_{i,t} + \beta_8 Load\_D_{i,t} + \beta_9 ICI_{i,t} + \beta_{10} AS_{i,t} \\
& + \beta_{11} Ret_{i,t} + \Phi_{Year} + \Gamma_{Style} + \Psi_{Family} + \epsilon_{i,t}
\end{aligned}
$$

We construct two indicator variables to facilitate the performance comparison, that is, for the comparison between multitasking-based funds and others, if fund is managed by

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multitasking teams we denote *Multitasking Team Indicator* to take the value of one and zero otherwise. Thus, when *Multitasking Team Indicator* equals to one it encloses the general case that fund is under group management and the team includes strict team multitasking manager(s) and/or mixed multitasking manager define in Section II.B. If the management team of the fund contains at least one SMT manager and no mixed multitasking manager, we denote *SMT Indicator* to take the value of one and zero otherwise. The case that *SMT Indicator* equals to one rule out the situation of MM managers presenting in the management team, and hence mitigate the impact from MM manager on team influence. Given the concern that multitasking managers could be fundamentally different with the singletasking ones regarding fund operation[11], we further conduct the comparison of performance between multitasking-managed funds with different organizational forms. We then define the indicator variables in the similar vein, specifically, *Multitasking Team Indicator* takes the value of one if fund is managed by multitasking teams and zero if it is managed by multitasking non-team based manager, and *SMT Indicator* takes the value of one if the management team contains at least one SMT manager but no MM manager, and zero when it is under the management of SMS manager. {*Organizational Forms*} in Eq1 includes the corresponding indicator variables to conduct the comparison. We also control fund/family level characteristics described in I, together with an additional dummy variable which equals to one if the fund has either front-end or back-end load, and zero otherwise. Year and fund style fixed effects as well as fund family fixed effect are included in the estimation. The standard errors are clustered at both fund and year level.

Result given by Table II report the estimation results of Eq1. In general we show that funds managed by multitasking teams outperform other funds under all four sets of comparisons. In column (1) to (4) of Panel A, our findings show significantly positive coefficients on *Multitasking Team Indicator* from three out of four performance measures and indicate a range of 24 to 48 extra basis points in performance over the sample of singletasking and non-team based multitasking funds. When comparing the performance between funds managed by SMT managers and others, the previously discovered outperforming is more pronounced with a improved scale ranged between 23 to 62 basis points as reported in column (5) to (8). Our findings regarding the comparison based on a refined sample of all multitasking based funds further confirm the superiority in adjusted returns offered by multitasking teams. Specifically, as reported in column (1) to (4) of Panel B the coefficients on *Multitasking Team Indicator* are significantly positive for two out of four performance measures when comparing the performance between multitasking teams and multitasking non-teams. Further, after stripping funds containing MM managers from

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[11]Talented fund managers are likely to be allocated with more products to manage by the fund family.

the sample, our results show enlarged performance gaps, with a scale ranged between 44 to 121 basis points between funds managed by SMT and SMS managers. Given the aforementioned concern regarding the "fashion leader" influence brought by MM managers, we argue that the composition of SMT managers could balance the management structure and better express the diversity of opinion nature embedded in groups.

[insert Table II about here]

B. Robustness check

Fund family may deliberately select teams to manage multitasking funds given the busyness concern when single manager is given additional fund(s). It is also likely that team management is chosen by the fund family for other exogenous reasons, i.e. management culture, marketing scheme etc, thereby our previous findings regarding the team effects on return dispersion could be driven by plagued endogeneity issue. To address such concern, we construct a measure to proxy fund family's policy of team usage as the percentage of funds running by SMT managers from a certain family at the end of per annum. We believe such measure satisfies both the validity restriction, since the likelihood of funds being team managed is closely related to this family policy measure, and the exclusion restriction, as it can hardly affect the investment behavior of the individual manager or team. We follow the instrumental variable approach by using the two stage least squares estimation (2SLS) to endogenize the team indicator, *SMT Indicator*, and using the *Family policy* as the instrumental variable. Our results from the first stage regression suggest the instrumental variable is significantly related with the endogenized team indicator[12]. Findings from the second stage regression confirm our previous argument that the fund managed by SMT managers lead to better performance. Such a result also persists when considering a variety of performance measures.

C. Impact of cross-fund investment activities on fund performance

In this section we study the heterogeneity of the investment activities cross funds by the same manager, and its consequence on managers' performance. Our previous findings suggest that the multitasking-team-managed funds significantly outperform both singletasking ones and funds managed by multitasking sole managers. Particularly, the performance gap is more pronounced when comparing funds under the two manager types, i.e. SMS and SMT. It therefore raises further inquiries on how the nature regarding

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[12]See Table A1 in the Appendix for the estimation results.

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team decision making can contribute to their superior performance. On one hand, the decision-making consequence of team operation is subject to the levels of group cohesion, and often resulting in group polarization and risky shift (Myers and Lamm (1976) and Isenberg (1986)). Therefore, we should observe that multitasking teams to conduct more homogeneous investment activities among their concurrently managed funds. On the other hand, despite that groupthink being the negative consequences to the presence of "powerful leaders" which can further damper groups' efficiency in decision making, such a high level of group cohesiveness should be driven by a variety of conditions, i.e. the style adopted by the leader Janis (1982), the obstacle to share information among the group members Stasser and Titus (1985) and are both in the perspective of task cohesion and socioemotional cohesion Bernthal and Insko (1993). Thus, groupthink might not necessarily to be outcome of group polarization. Further, following the classical social psychology argument that group opinion should reflect the average of the opinions of its constituent members (Brown (2000)), and particularly groups should have advantage in information processing and biases correction Hinsz et al. (1997). Given this climate of discussion, we should observe that the superior performance to be driven by the divergence in the investment activities among fund attached to the multitasking teams.

We proxy the heterogeneity in managers' investment activities through three different approaches. Firstly, we examine, for each of the concurrently managed funds from a certain multitasking manager, its trading activities including stocks purchased, sold and maintained in the portfolio across different periods[13]. We then compare these trading behaviors across all affiliated funds for one manager to estimate the divergence in their trading behaviors. Specifically, let $H_{i,k,t}$ be the holdings of equity k at time t for fund i. Then we denote $Trade_{i,k,t}$ to be the stock trading indicator which yields,

$$
Trade_{i,k,t} = \begin{cases} 1 & \text{if } \Delta H_{i,k,t} > 0 \text{ and } k \in \cap_{i=1}^{n} H_{i,k,t} \\ 1 & \text{if } \Delta H_{i,k,t} < 0 \text{ and } k \in \cap_{i=1}^{n} H_{i,k,t} \\ 0 & \text{otherwise.} \end{cases}
$$

where $\Delta H_{i,k,t} = H_{i,k,t} - H_{i,k,t-1}$ and n is number of funds affiliated to one multitasking manager. Similarly, we define, $Keep_{i,k,t}$, as the indicator funds to have the unchanged

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[13]We measure managers' trading activities based on the quarterly stock holdings reported by mutual funds in the N-30D filings to the SEC. It thus implies the assumption that funds maintain the same holdings through the holding period, normally, a quarter.

positions on stock k,

$$Keep_{i,k,t} = \begin{cases} 1 & \text{if } \Delta H_{i,k,t} = 0 \text{ and } k \in \cap_{i=1}^{n} H_{i,k,t} \\ 0 & \text{otherwise.} \end{cases}$$

Therefore, we can define the measure of heterogeneity in trading for all n funds attached to a certain manager as,

$$\text{Trading Difference}_t = 1 - Syn_t \tag{2}$$

in which,

$$Syn_t = \frac{\sum Trade_{i,k,t} + \sum Keep_{i,k,t}}{\left| \bigcup_{i=1}^{n} H_{i,k,t} \right|}$$

where $|\cup_{i=1}^{n} H_{i,k,t}|$ is the cardinality of the union set includes all of stocks in each fund i's portfolios. Given that Syn_t is designed to have the range from 0 to 1, thus when *Trading Difference* equals to zero, it indicates that the multitasking manager conduct exactly the same trading activities across all of her funds, while *Trading Difference* equals to one indicates that the multitasking manager has completely different trading position in all of her attached portfolios.

Secondly, we also extend our analysis to investigate the trading differences based on industrial sectors. Kacperczyk et al. (2005) find skilled managers are often associated with more concentrated portfolio holdings, and hence deliver better performance, whereas Bär et al. (2011) suggest that team-managed funds tend to seek less risky investment strategy and lead to less concentrated holdings. It is thus worth examining whether multitasking teams' superior performance can also be attributed to investment on concentrated industrial sectors. We therefore substitute $H_{i,k,t}$ in Eq2 with $I_{i,j,t}$ which describes fund i's holdings for industrial sector j at time k[14]. The *Trading Difference*$_t$ is then estimated by Eq2.

Thirdly, to provide further insights on the differentials of investment strategies deployed for each of affiliated funds managed by the same multitasking manager, we follow Nanda, Wang, and Zheng (2004) to calculate managers' cross-fund standard deviation based on the adjusted returns from their concurrently managed funds. Specifically, for a

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[14]We sort stocks into ten sectors based on stocks' SIC codes following Fama/French's industrial classifications. The industrial classification can be accessed through Kenneth French's website (`http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/Data_Library/det_10_ind_port.html`).

certain manager with n underlying funds, we have,

$$\text{Cross Fund Return SD}_{f,t} = \sqrt{\frac{1}{n-1} \sum_{i=1}^{n} (adj\text{-}\alpha_{i,t}^{4F} - \overline{adj\text{-}\alpha_{i,t}^{4F}})^2} \qquad (3)$$

We deploy the aforementioned three measures as the proxies of the divergence in investment activities and estimate the following specifications to examine their impact on managers' performance.

$$\text{Perfor}_{f,t+1}^{Mgr} = \alpha_f + \beta_1 \{\text{Divergence of Investment Activity}\}_{f,t} + \beta_2 \text{SMT Indicator}_{f,t} \qquad (4)$$
$$+ \beta_3 \{\text{Divergence of Investment Activities}\}_{f,t} \times \text{SMT Indicator}_{f,t}$$
$$+ X'_{f,t}\zeta + \Phi_{Year} + \Gamma_{Style} + \Psi_{Family} + \epsilon_{f,t}$$

where $Perfor_{f,t+1}^{Mgr}$ is performance measure of manager f. We consider both managers' absolute performance and relative performance, specifically, the absolute performance is given by the TNA weighted average of four-factor-adjusted returns delivered by the affiliated funds, and the relative performance is generated by ranking managers into ten deciles in an ascending order based on their averaged four-factor-adjusted returns at time t. $\{Divergence\ of\ Investment\ Activity\}_{f,t}$ takes the value of each of the three divergence measures on manager's trading activities. $SMT\ Indicator_{f,t}$ is the indicator variable which equals to one if manager f is SMT manager, and zero if she is SMS manager. X is the vector of manager-level control variables described in Table I including manager's underlying total assets, tenure, manager-level NMG, turnover, expense ratio, value-weighted average of returns, manager-level ICI and AS, and the number of investment styles managed by the manager.

Results given by Table III suggest that heterogeneity in investment activities affect the performance delivered by SMT and SMS managers in different ways. In column (1) to (3) we find that all of the three heterogeneity measures are positively related to managers' absolute performance when the fund managers are SMT ones. That being said, more diversified investment activities drive better performance in average for SMT managers. For example, one unit increase in the divergence of stock trading activities will improve SMT manager's average performance by 36 basis points per month. The performance improvement will enlarged to almost 6% for 1% increase in the cross-fund return standard deviation *ceteris paribus*. The findings are consistent in column (4) to (6) when substituting the performance measure to be the cross-sectional ranks of managers' averaged performance and re-estimating Eq4 based on an ordered logistic regression. All of the

three heterogeneity measures are positively related to managers' performance rank when interacting with the *SMT Indicator*. However, the results of Table **??** only identify weak evidence on the association between homogeneous investment activities and performance improvement for the SMS managers.

[insert Table III about here]

As a robustness check, we further examine the impact of the heterogeneity in manager's investment style on their averaged performance. Firstly, we follow Bär et al. (2011) to capture the extremity of fund's investment styles for each of manager's underlying funds based on the factor loading of the Carhart four factor model. The specification can be given as following,

$$ \text{SE}_{i,t}^F = \frac{|\beta_{i,t}^F - \bar{\beta}_{i,t}^F|}{\frac{1}{N}\sum_{j=1}^{N}|\beta_{j,t}^F - \bar{\beta}_{i,t}^F|} \tag{5} $$

where F denotes each of the four pricing factors of Carhart model, i.e. market Beta, size effect (SMB, hereafter), value effect (HML, hereafter) and momentum effect (UMD, hereafter). $\beta_{i,t}^F$ is the estimated loading of pricing factor F, and $\bar{\beta}_{i,t}^F$ is the segment average of loadings for fund i. N is the number of funds in the corresponding market segment as fund i at time t. Secondly, we define the divergence of manager's investment style as the cross-fund standard deviation of $SE_{i,t}^F$ from every fund attached to that manager. It then gives,

$$ \text{Mgr SE}_{f,t}^F = \sqrt{\frac{1}{n-1}\sum_{i=1}^{n}(\text{SE}_{i,t}^F - \overline{\text{SE}_{i,t}^F})^2} \tag{6} $$

a higher level of Mgr $\text{SE}_{f,t}^F$ indicates more dispersed investment style for the corresponding factor. We substitute {Divergence of Investment Activity}$_{f,t}$ of Eq4 with the dispersion measure given by Eq6 and re-estimate Eq4 for each of the four pricing factors to examine their effects on managers' performance.

In general the estimated results from Eq4 with the alternative measure given by Eq6 further confirm our previous findings. Table IV suggests that SMT managers who seek more heterogeneity styles across the affiliated funds can improve their averaged absolute performance. The coefficients on three out of four style dimensions report positive relation with managers' performance when interacting with the SMT indicator. For example, 1% increase in the dispersion level of the momentum style will improve the average adjusted returns of the SMT managers by 60 basis points. Similar results are found when

substituting the absolute performance with the managers' performance ranks. However, we do not find significant evidence on the dimension of size effect.

[insert Table IV about here]

Given our previous findings of SMT managers' seeking more heterogeneous investment activities to improve their performance, we now turn to the comparison on SMT managers with various level of heterogeneity in investment activities and their consequent performance. We follow the analysis in Table III to re-estimate Eq4 on a confined sample containing only the SMT managers and without adding the interaction with *SMT Indicator*. Findings in TableV confirm our conjectures that SMT managers with more heterogeneity in the investment across their concurrently managed funds can deliver significant better performance. Specifically, one unit increase in the *Stock Trading Difference* and *Sector Trading Difference* will lead to a 19 and 10 basis points increase per month in the averaged performance for the SMT managers. Positive relation is also documented when considering managers' ranks as the dependent variable in Eq4.

[insert Table V about here]

In addition, we also look into the performance consequences when interacting multitasking managers' investment heterogeneity with their organizational structure through an out-of-sample portfolio approach. We rank the sampled SMS and SMT managers, respectively, in an ascending order according to their monthly investment heterogeneity based on the previously constructed three measures, i.e. Stock trading, sector trading and cross-fund return SD. We then estimate the four-factor-adjusted performance based on the TNA-weighted returns of portfolios containing funds with various decile ranks and under either SMS or SMT managerial structure. For example, the HighStd-Team portfolio contains all SMT-based funds ranked above the 5th decile while the 9th-Sole portfolio includes only SMS-based funds ranked in the 9th decile. Our findings indicate that portfolio containing SMS-based funds significantly underperform the one formed by SMT-based funds when the constituted funds in both portfolio are managed by multitasking managers with above-median investment heterogeneity[15]. Specifically, the performance gaps between *HighStd-Sole* and *HighStd-Team* across the three investment heterogeneity measures are significantly negative and ranged from 7 to 11 basis points per month. Similar results are found when turning to the performance differences between the two portfolios containing products provided by managers with extreme high investment heterogeneity.

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[15]See Table A2 in the Appendix for the estimation results.

On the other hand, we find no consistent results of portfolio with SMS-based funds outperforming the SMT ones when the components for both portfolios come from managers with low investment heterogeneous level. The results consequently confirm our previous findings of more heterogeneous investment behaviors drive the superior performance delivered by SMT managers. Meanwhile, it also imply the error-correlation function embedded in team structure since the performance gaps are insignificant when deploying more concentrated investment activities across affiliated products.

IV. Does Team Diversity Affect The Investment Behavior of Multitasking Managers?

Our previous results provide evidence to support that SMT managers significantly outperform SMS ones by increasing the heterogeneity in investment strategies across their concurrently managed funds, however it remains an open question on how to relate team characteristics with the dispersion of managers' investment behaviors. In this section we investigate this question progressively, we firstly examine whether the team status of multitasking managers drives the heterogeneity in investment behaviors and then we move to identify the potential driving factors in the context of team characteristics.

A.   Impact of team status on the divergence of managers' investment strategies

We deploy a multivariate analysis based on a pairwise setting to examine the impact of team status on the heterogeneity of multitasking managers' investment activities. Considering a group of three funds, A, B and BM, if both fund A and B are under the same multitasking manager (or team), and BM is managed by a different multitasking manager (or team), j. Further, assuming BM is within the same investment style as B, and its characteristics are comparable to B, we should expect the heterogeneity of investment activities between A and B should be systematically higher that between A and BM if both A and B under the management of multitasking teams. Alternatively, if managerial structure has no effects on multitasking managers' investment activities, the heterogeneity measure should be indifferent between the two pairs of funds. The pairwise setting allows the inclusion a proper counterfactual cases and facilitates the comparison between the actual pairs (formed by A and B) and the control pairs (formed by A and BM). The

test specification can be given as following,

$$\text{Divergence}_{t+1}^{A,Match} = \alpha + \beta_1 \text{Same Mgr}_t^{A,Match} + \beta_2 \text{SMT Indicator}_t^{A,Match} \qquad (7)$$
$$+ \beta_3 \text{Same Mgr}_t^{A,Match} \times \text{SMT Indicator}_t^{A,Match}$$
$$+ controls + \zeta + \epsilon_t$$

where $Divergence_{t+1}^{A,Match}$ is divergence measure on managers' investment activities, i.e. the pairwise heterogeneity in stock and sector trading given by Eq2, the absolute difference in the factor adjusted return between the paired funds, and the absolute difference in investment style extremity of the paired funds defined by Eq5. We form the actual pair by matching each A with a randomly sampled fund B managed by the same multitasking manager (or team). We construct the control pair to address the counterfactual issue by matching each A with an additional fund BM of which its characteristics is comparable to B. To identify BM we conduct a similar strategy suggested by Daniel, Grinblatt, Titman, and Wermers (1997) in which all cross-sectional funds (including fund B) at time t are sorted into quintiles based on their three characteristics, namely, size, expenses and momentum. It thus gives in total $5 \times 5 \times 5$ sorting portfolios at time t for each of the investment style. BM is then sampled randomly from a pool of funds which has the same style as B, and ranked at the same quintile as B within the $5 \times 5 \times 5$ sorting portfolios. *Same $Mgr_t^{A,Match}$* is an indicator variable which equals to one if both A and its paired funds (B or BM) are managed by the same multitasking manager (or team) and zero otherwise. SMT Indicator$_t^{A,Match}$ equals to one if both funds in the pair are managed by SMT managers, it takes the value of zero if both funds are managed by SMS managers. Therefore, if the heterogeneity in investment strategies is driven by team-based managerial structure, we would expect the coefficient on the interaction term, β_2, to be significantly positive.

In addition, Eq7 also includes a collection of control variables, i.e. *Same Style* is an indicator of paired funds belong to the same investment style. We also control for the differences of paired funds' characteristics which potentially determinant the divergence in their investment activities, that is, the absolute differences of funds' size, age, expenses, flows, active shares and industry concentration level. ζ is a collection of fixed effects which include year and style fixed effects of both paired funds.

Table VI reports the estimation results of Eq7. Our findings suggest, comparing with the SMS managers, SMT ones conduct more divergent investment activities across their underlying funds. The coefficients of the interaction variable, *Same Mgr×SMT Indicator* are positive and statistically significant for both the heterogeneity measure of stock and sector trading. We also find strong evidence to there is considerable diversity in the factor

adjusted returns and investment styles across funds managed by the SMT managers. For example, the gaps of the adjusted returns are 18 basis points larger per month for the SMT managers than the pair of funds managed by the SMS manager. The differentials of style extremity is also more pronounced for the paired funds from the SMT managers.

[insert Table VI about here]

Given the coefficients on *Same Style* reported in Table VI is significantly negative, one may argue that such a divergence could only be driven by paired funds not being in the same investment style. Particularly, funds with the same market segment are more likely to be exposed to similar investment opportunities, and lead their corresponding manager(s) to reach comparable investment decision. To examine this concern, we thus extend the estimation of Eq7 conditional on the *Same style* indicator.

Interestingly, the estimation results given by Table VI show that the previously discovered divergence in investment activities of the SMT managers is even amplified when the paired funds belong to the same investment style, specifically, the coefficients of the three-way interaction, i.e. *Same Mgr×SMT Indicator×Same Style* are positively and significantly related with five out of seven divergence measures. For example, as shown in column (1) and (2), the heterogeneity in stock and sector trading is further increase by 11% and 6% for funds under the management of SMT managers and simultaneously from the same investment style. Our findings therefore argue that the investment heterogeneity is more pronounced when additional managers are included into the multitasking managerial organization, particularly, even when the underlying funds belong to the same investment style. It further implies that the diversity of opinion and its influence on team decision making. However, we do not find significant coefficients on the three-way interaction for the extremity differentials on HML factor but its loading on *Same Mgr×SMT Indicator* remains insignificant indicating that the variety of exposure to the value effect are indifferent with respect to funds from the same investment style.

[insert Table VII about here]

B.   Team diversity and heterogeneity in investment activities

In this section, we provide further insight into how team diversity can fit into the previously documented findings that multitasking team drives the heterogeneity of investment activities across underlying funds. Team composition, particularly the disjoint on the skills or information set amongst team members could largely contribute to team

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production (Putnam (1994); Lazear (1999)). Further, the diversity in fund managers' demographic characteristics also lead to distinct fund performance (Baks (2003); Chevalier and Ellison (1999b)), we thus posit that the heterogeneous investment behaviors diversity can be potentially driven by the diversity in the composition of multitasking teams. We follow Jehn et al. (1999) to consider the dimension of information diversity amongst the team members, and mainly look into managers' experience in team collaboration and investment decision.

We modify the pairwise method suggested in Section IV.A and pair each of the underlying funds attached to one SMT manager with another one from the same manager and regress each of the seven heterogeneity measures on our proxy of team diversity, together with the same set of controls variables considered in the previous sections. Given that our focus is on examining the impact of team diversity on multitasking managers' investment, the analysis is applied to a refined data set with paired SMT-managed funds only. The test specification is as following,

$$\text{Divergence}_{t+1}^{A,B} = \alpha + \beta_1 \text{Team Diversity}_t^{A,B} + controls + \zeta + \epsilon_t \tag{8}$$

where Team Diversity$_t^{A,B}$ is the selection of team diversity measure. To proxy the managerial experience in collaborating with different team member we compare the similarity of the two management teams from the paired funds. The similarity measure is given by the Jaccard coefficient of the two sets of managers. It yields,

$$\text{Mgr Overlap}_t^{A,B} = \frac{|M_t^A \cap M_t^B|}{|M_t^A \cup M_t^B|} \tag{9}$$

where A and B are the two paired funds managed by the same multitasking manger i, and M_t^A and M_t^B are sets of the two management team in additional to the common manager i at time t, respectively. $|M_t^A \cap M_t^B|$ is the cardinality of the intersection of the two management sets. Therefore, *Mgr Overlap* by design has the value range of $[0,1]$, and it equals to zero when both sets of management teams have no overlapped manager(s), and zero being the two team are perfectly overlapped with each other in addition to the communal manager i.

We further compare, between the paired funds, the record of the non-communal team members collaborating with other managers in the industry. Specifically, for each of the team member, we trace her record of historical team mates up to her first appearance in our dataset, and then compare the record similarity between the two management team[16].

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[16]We also consider the record up to i.e. 3 or 5 years from the current date to avoid potential sample selection bias, and the results are consistent.

The managerial experience measure can be given as,

$$\text{Mgr Exp Overlap}_t^{A,B} = \frac{\left| \bigcup_{j=1}^{N_A-1} M_j \cap \bigcup_{j=1}^{N_B-1} M_j \right|}{\left| \bigcup_{j=1}^{N_A-1} M_j \cup \bigcup_{j=1}^{N_B-1} M_j \right|} \tag{10}$$

$$\text{and } M_j = \{x : x \in \text{Mgr}_{j,h}\} \text{ for } h = 1, ..., t-1$$

where $Mgr_{j,h}$ is the set which includes all of the fund manager(s) that had working relation with manager j at time h, and M_j is thus the union of $Mgr_{j,h}$ for all h. N_A and N_B is the number of managers for fund A and B, respectively. Thus, Mgr Exp Overlap$_t^{A,B}$ measures the similarity on the collaboration record between the two managerial teams of the paired funds. *Mgr Exp Overlap* also has the value range of $[0, 1]$, and it equals to zero when both sets of management teams have no overlapping regarding their collaboration record, and one being perfectly overlapped.

Results given by Table VIII provide evidence to support our conjecture of a negative relation between managerial overlapping and the heterogeneity in investment behaviors. Specifically, in Panel A the management team overlapping measure defined in Eq**?** is negatively related with both of our trading diversity measures in column (1) and (2), and it is also negatively associated with the cross-fund return deviation in column (3) as well as the style extremity measures on size and momentum effects. The findings therefore indicate that teaming up with different managers enlarges the investment heterogeneity across SMT managers' underlying funds. Similar results are found when further implementing the managerial experience overlapping measure in Panel B. We show that working with team mates who have a variety of experience in collaborating with different fund managers would also increase the heterogeneity in investment activities. The managerial experience measure, *Mgr Exp Overlap*, remains negatively related with the two trading diversity measures, and also with the style extremity measures on size, value and momentum effects.

[insert Table VIII about here]

One can still argue that teaming up with different manager(s) or having different collaboration tracking record may not necessarily drive the heterogeneity in SMT managers' investment behaviors since the other team mates can have similar experiences or views in terms of investment strategies. We therefore further measure the similarity level regarding the investment experience between the two management teams of the paired funds.

Specifically, we firstly compare team member's tracking records of types of fund styles ever managed when initially appeared in our sample. In light of Eq10, we define *Style Exp Overlap$_t^{A,B}$* by substituting M_j with S_j which is the union of all sets that contains the Lipper codes for which manager j has ever managed up to time $t-1$, and let S_j satisfy the following,

$$S_j = \{x : x \in Sty_{j,h}\} \text{ for } h = 1, ..., t-1$$

where $Sty_{j,h}$ is the set which includes the Lipper objective codes manager j operates at time h, and N_A and N_B is the number of managers for fund A and B, respectively. Thus, *Style Exp Overlap$_t^{A,B}$* measures the similarity level between the two paired management teams in terms of their experience in handling variety of fund styles.

Yet we further measure the diversity in experience of picking industrial sectors between the two paired management teams. Kacperczyk et al. (2005) argues that skillful manager have advantage knowledge on certain industries and it may lead to superior performance in the affiliated fund(s). Therefore, manager's choice of industries in the stock holdings could also contribute to the building of her investment profile which reflects one's skill and information set. We define I_j to substitute M_j from Eq10 and it satisfies,

$$I_j = \{x : x \in Sec_{j,h}\} \text{ for } h = 1, ..., t-3$$

where $Sec_{j,h}$ is the set of stock SIC codes mapping into 49 macro industry sectors defined by Kenneth French. We trace managers' sector investment up to the 3 years from the most recent holding date. We evaluate the similarity level of the sector investment experience by substituting M_j from Eq10 with I_j. We perform the analysis in the similar fashion as Eq8 with the two proxies of investment experience to further examine the impact of team diversity on SMT managers' investment behaviors.

We find strong evidence to support that the diversity in team members' investment experience can significantly promote the heterogeneity in investment activities. Panel A of Table IX suggest that teaming up with managers who has richer experience of operating different fund styles could drive the diversity in trading diversity, reported by column (1) and (2). It also increases the differences in factor adjusted fund returns and the style extremities as reported in column (3) to (7). Panel B further support our speculation on the effect of team diversity on investment heterogeneity, it shows the less sector investment experience the paired two teams have in common, the more variety of investment activity they will conduct. It draws to consistent results with whichever heterogeneity measure of

investment activity. Consequently, our findings so far provide evidence of team diversity, by means of richness of team members' managerial and investment experience, as the diving force for the variety of investment activities across the underlying funds affiliated to the SMT managers.

[insert Table IX about here]

C. *Economic significance of diversity in multitasking teams*

Our findings in the previous sections provide evidence to support that team diversity being a strong driving force of heterogeneous investment activities deployed by SMT managers for their underlying funds. Meanwhile, given our results of SMT managers' superior performance discovered in Section III, it might imply the potential influence of diversity in multitasking teams on individual fund performance although such a relation could be indirect. Thus, we offer additional analysis in this section to examine the economic significance of team diversity and its consequence on fund performance: (1) we implement the team diversity measure suggested in Section IV.B and evaluate its effect on individual fund performance; and (2) we also consider an out-of-sample portfolio approach to compare returns delivered by portfolios containing funds managed by either singletasking or multitasking teams with various diversity levels.

To shed additional light on the economic consequences of diversity in multitasking teams, we regress the diversity level of the SMT structure on the individual fund performance. We estimate the fund level diversity following our measure defined in Eq10. For fund i with a management team containing N_i managers Eq10 can be modified as ,

$$\text{Exp Overlap}_t^i = \left| \bigcap_{j=1}^{N_i} \text{Exp}_j \right| / \left| \bigcup_{j=1}^{N_i} \text{Exp}_j \right| \tag{11}$$

where Exp_j equals the information set of M_j, S_j or I_j when evaluating the team diversity on managerial collaboration, experience of fund styles and experience of sector investment. It is then regressed on the performance of fund i, specifically, it gives,

$$adj\text{-}\alpha_{i,t+1} = \alpha_i + \beta_1 \{\text{Exp Overlap}\}_{i,t} + controls + \zeta + \epsilon_t \tag{12}$$

Eq12 includes the similar groups of control variables as those suggested by Eq1, and year, fund style and fund family fixed effects are also incorporated in the estimation.

Panel A of TableX reports the estimation results of Eq12 based on a refined sample of funds have a least one SMT manager. All of the three diversity measures show negative

coefficients and are statistically significant from zero, indicating that teams containing managers with larger variety in managerial and investment experience deliver higher factor adjusted returns. For example, as reported in column (1) one unit decrease in the overlapping level of the collaboration experience amongst team members will improve the factor adjusted return by 60 basis points per annum, such magnitude enlarges to 145 basis points when turning to the overlapping of managers' sector investment experience in column (3).

We further analysis the economic consequences of team diversity through comparing factor-adjusted returns from portfolios forming by funds with various team diversity level. We rank funds cross-sectionally into quintiles according to their previous 12-months team diversity level given by Eq11. Buy and hold fund portfolios are then formed over the subsequent 12 months using funds ranked below (above) the 3rd quintile, the former includes funds with higher diversity level than the median and the latter contains those funds with below-median team diversity. We conduct this comparison based on a refined sample of only team-managed funds, i.e. funds under the management of singletasking or multitasking teams. We can thus identify whether the diversity feature embedded in teams can be further enhanced when encountering even larger scale of information set under the context of multitasking.

Panel B and C report the results of the comparison. It shows that multitasking teams deliver significant performance premium over singletasking ones. Specifically, in Panel B when comparing portfolios formed by funds with high team diversity level, we find that SMT-based fund portfolio significantly outperform the singletasking team-based one with a scale of performance gaps ranged between 81 to 121 basis points. Such an outperformance is statistically significant from zero for all of the three diversity measures. In Panel C when comparing portfolios formed by funds with low team diversity level, despite the findings of SMT portfolio deliver lower performance than the singletasking one, the gaps are statistically insignificant. Our findings therefore bridge the team diversity with fund performance, and discover the economic consequence of experience-wise diversity amongst team members are better pronounced in multitasking teams by generating significant return premium over funds under the management of singletasking teams.

[insert TableX about here]

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V. Favoritism in multitasking teams

Previous research document that fund managers might favor certain high value funds by sacrificing the returns of other funds from the same fund complex. For example, Gaspar, Massa, and Matos (2006) shows that fund families subside those funds charging high fees or having better historical performance in order to pursue overall family profits. In the case of multitasking management, managers could utilize the nature of controlling multiple products simultaneously and easily facilitate the subsidization amongst their underlying funds. Particularly, SMT managers could conduct a wider scale of resource re-allocation than the SMS ones since the former type of multitasking management observes more targets potentially being subsided or sacrificed. SMT managers thus could achieve more efficient allocation of resource, and as a result, gain superior performance in average over the SMS managed ones. But such a subsidization could possibly damper investors' value of funds being sacrificed.

Furthermore, multitasking managers are subject to effort substitution when new funds are added to their management. Previous studies find empirical evidence suggest that multitasking managers underperform singletasking ones following the inception of other funds under the same management (See Abdesaken (2015) and Agarwal et al. (2016)). Multitasking managers may favor newly added funds by deliberately shifting performance from the incumbent funds to the new ones. SMT managers may have the advantages of better reallocating performance amongst underlying funds given their outreach to a variety of products, and consequently could achieve better performance than SMS managers.

To test whether our previous findings of SMT managers' superior performance are driven by these two previously addressed alternative explanations, we follow the pairwise method considered in Section IV.A to address the analysis. It gives,

$$
\Delta_{Adj\text{-}\alpha^{4F}_{A,t+1},Adj\text{-}\alpha^{4F}_{Match,t+1}} = \alpha + \beta_1 \text{Same Mgr}_t^{A,Match} + \beta_2 \text{SMT Indicator}_t^{A,Match} \tag{13}
$$
$$
+ \beta_3 \text{Same Mgr}_t^{A,Match} \times \text{SMT Indicator}_t^{A,Match}
$$
$$
+ controls + \zeta + \epsilon_t
$$

where $\Delta_{Adj\text{-}\alpha^{4F}_{A,t+1},Adj\text{-}\alpha^{4F}_{Match,t+1}}$ is the pairwise performance difference of the factor —adjusted returns between high value (newly added) and low value (incumbent) funds. We form the fund pair by randomly selecting one high value (newly added) funds and matched with another randomly sampled low value (incumbent) fund managed by the same multitasking manager. For each of the fund pair we also construct a control pair to address the

counterfactual issue by matching the high value (newly added) fund with an additional fund of which its characteristics is comparable to the low value (incumbent) fund in the actual pair. SMT Indicator$_t^{A,Match}$ equals to one if both funds in the pair are managed by SMT managers, it takes the value of zero if both funds are managed by SMS managers. Eq13 also controls for the differences of paired funds' characteristics suggested in Table 1.

Findings in Panel A of Table XI reports the estimation of Eq 13 when examining the performance subsidization between the high and low value fund attached to one multitasking manager. We find no significant results to support the case of multitasking managers' subsiding young funds with old ones, and between high fee funds and low fee ones in column (1) and (2), respectively. The findings suggest that SMS managed-funds with higher historical performance outperform the lower performed ones indicating the presence of managers' favoritism on high value funds but such a result reverses for funds under the management of SMT managers. Specifically, in column (3) the performance gaps between the paired high and low funds reduce by 13 basis points per month (1.56%s per annum) when both funds are under the management of the same SMT manager. We therefore argue that, contrary to the SMS managers, multitasking teams mitigate the potential subsidization between the previously better- and worse-performed funds underlain the same manager.

Panel B of Table XI reports the results when extending our analysis on managers' preference for funds newly added to the multitasking management over the incumbent ones. We define the newly added funds to be those having a tracking record less than 12-, 18- or 24-month following a 12-month incubation period after fund inception. Column (1) suggests that the cross-fund subsidization for products underlain SMS managers contributes around 30 basis points (3.60% per annum) of extra factor-adjusted performance for the newly added funds within the 12-month window after the incubation period. Whereas SMT managers mitigate such a subsidization through closing the gap by 39 basis points per month. However we find no evidence of neither cross-fund subsidization from the SMS managers nor further alleviation from the SMT managers when extending the window to be 18 or 24 months after the incubation period. Our findings therefore do not support multitasking teams' engagement with cross-fund subsidization and consequently rule out that their superior performance over the SMS managers to be attributed to managers' favoritism.

[insert Table XI about here]

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VI. Conclusion

In this paper we first investigate the effect of the different interaction of team management with managerial multitasking on fund performance, using hand-collected sample of 5,477 unique fund managers and 197,907 fund-month observations. Based on the CRSP Survivorship Bias Free Mutual Fund Database, the Thompson Mutual Fund Holdings Database and the funds NSAR-B and 485BPOS fillings through the SEC EDGAR website, our main findings imply that funds managed by the strict multitasking team (SMT) managers largely outperform funds managed by the strict multitasking solo (SMS) managers. We second identify the three divergence in investment activities i.e. stock trading difference, sector trading difference, and cross-fund return standard deviation as proxies embodying informational diversity as team nature for the SMT setting. We finally explore the four overlapping indicators i.e. managerial overlapping, managerial experience overlapping, and investment experience overlapping (i.e. including style experience overlapping and sector experience overlapping) to show differences among team members in experience and expertise, which are factors influencing information diversity embedded in the three divergence measures of investment activities conducted by the SMT managers.

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Table I
Summary Statistics

This table presents the summary statistics of the sampled mutual funds between 1992 and 2014. Funds are classified into three types based on their managerial structure, i.e. SMS manager, containing at least one SMT manager but no MM manager, and containing MM manager but no SMT ones. *Fund TNA* is the fund total net asset. *Family TNA* is the aggregated TNA of all underlying funds within certain family. *Fund age* is the age taken from the oldest share class in a fund. *Fund NMG* is the dollar change of funds' TNA net of price appreciation. *Expense ratio* is the fraction of fund's annual operating expenses in its TNA. *Turnover* is defined as the minimum value between the aggregated sales or aggregated purchases of securities divided by the TNA of the fund. *Realized return* is calculated as the change in fund's NAV including reinvested dividends across time. *ICI* is the industry concentration level of fund holding. *AS* measures the deviation between fund holding and market benchmark index. $adj\text{-}\alpha_{i,t}^{4F}$, $adj\text{-}\alpha_{i,t}^{PS}$ and $adj\text{-}\alpha_{i,t}^{FS}$ are factor adjusted returns based on the four-factor model, the liquidity factor model and the conditional model, respectively. *RG* is the return gap measured by the difference between the fund's gross returns and its gross holding returns.

	SMS Manager		SMT Manager		MM Manager	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Panel A: Fund/Family level control variables						
Fund TNA (in millions)	$1,108.11$	$4,190.14$	769.85	$1,706.45$	1030.65	3379.72
Family TNA (in millions)	$40,747.95$	$93,099.34$	$8,397.32$	$12,324.42$	$17,112.97$	$46,719.15$
Fund age (in month)	159.21	166.62	162.23	154.81	168.59	161.86
Fund NMG (in %, winsorized at 1%)	0.72	8.65	0.44	7.91	0.55	8.03
Expense ratio (%)	1.25	0.77	1.21	0.45	1.22	0.47
Turnover	0.99	1.54	0.87	0.84	0.93	0.98
Realized return (%)	0.60	5.72	0.68	5.22	0.66	5.43
ICI (%)	5.47	4.63	5.01	4.51	5.00	4.24
AS (%)	41.56	7.15	41.88	6.22	41.68	6.67
Number of fund-month observations	41,155		58,893		29,882	
Panel B: Manager-level control variables						
Mgr TNA (in millions)	$2,650.64$	$7,825.26$	$2,064.26$	$3,620.53$	$2,818.82$	$6,861.78$
Tenure (in year)	6.89	5.20	8.50	6.01	7.67	5.91
Mgr NMG (in %, winsorized at 1%)	0.13	9.31	0.14	16.64	0.02	0.70
Mgr Expense ratio (%)	1.19	0.64	1.17	0.36	1.18	0.40
Mgr Turnover	0.94	1.30	0.81	0.71	0.84	0.76
Mgr Realized return (%)	0.58	5.53	0.66	5.11	0.65	5.25
Number of fund styles	1.67	0.65	1.92	0.72	1.93	0.76
Number of Mgr-month observations	17,205		47,460		11,574	
Panel C: Individual fund performance						
$Adj\text{-}\alpha^{4F}$(%)	-0.04	1.49	-0.03	1.27	-0.07	1.35
$Adj\text{-}\alpha^{PS}$ (%)	-0.04	1.48	-0.02	1.27	-0.03	1.33
$Adj\text{-}\alpha^{FS}$(%)	-0.06	1.38	-0.04	1.17	-0.04	1.25
RG(%)	-0.06	7.64	0.14	7.01	-0.01	7.35

Table II
Fund Performance and Organizational Forms of Multitasking Management

This table examines the impact of funds' managerial organizations on fund performances. The dependent variable contains four measures of individual fund performance based on the four-factor Carhart model, liquidity-factor model, conditional factor model and the return gaps, respectively. Independent variables include indicator variables which classify individual funds under the management of various organizational forms. In Panel A the *Multitasking Team Indicator* takes the value of one if fund is managed by multitasking teams and zero otherwise. *SMT Indicator* takes the value of one if the management team of the fund contains at least one SMT manager (Manager who only teams up with others for fund management), and zero otherwise. In Panel B the *Multitasking Team Indicator* takes the value of one if fund is managed by multitasking teams and zero if it is managed by multitasking non-team based manager. *SMT Indicator* takes the value of one if the management team contains at least one SMT manager and no MM manager, and zero when it is under the management of SMS manager (Manager who only works alone for fund management). Independent variables also includes various fund and fund family controls defined in Table I. All regression specifications include both time and fund investment style fixed effects as well as fund family fixed effects. The standard errors are clustered by fund. The test statistics are in parentheses. Statistical significance of 1%, 5%, and 10% is indicated by ***, **, and * respectively.

Panel A	Multitasking Team Vs Others				Strict Multitasking Team Vs Others			
Dependent variable	$(1)Adj\text{-}\alpha^{4F}$	$(2)Adj\text{-}\alpha^{PS}$	$(3)Adj\text{-}\alpha^{FS}$	(4) RG	$(5)Adj\text{-}\alpha^{4F}$	$(6)Adj\text{-}\alpha^{PS}$	$(7)Adj\text{-}\alpha^{FS}$	(8) RG
Multitasking Team Indicator	0.0024 (1.97)**	0.0048 (4.02)***	0.0044 (4.07)***	0.0010 (0.24)	-	-	-	-
SMT Indicator	-	-	-	-	0.0044 (3.32)***	0.0052 (3.99)***	0.0023 (2.00)**	0.0062 (1.91)*
Log(TNA)	−0.0029 (−2.90)***	−0.0015 (−1.51)	−0.0029 (−3.32)***	−0.0246 (−7.68)***	−0.0029 (−2.91)***	−0.0014 (−1.46)	−0.0030 (−3.42)***	−0.0247 −(7.70)***
Log(Family TNA)	−0.0238 (−10.73)***	−0.0255 (−11.72)***	−0.0175 (−9.02)***	−0.0708 (−10.59)***	−0.0238 (−10.73)***	−0.0255 (−11.73)***	−0.0175 (−9.02)***	−0.0709 (−10.61)***
Log(Age)	−0.0022 (−1.08)	−0.0007 (−0.32)	−0.0077 (−4.37)***	0.0224 (3.49)***	−0.0022 (−1.10)	−0.0007 (−0.35)	−0.0078 (−4.39)***	0.0224 (3.50)***
NMG	0.0384 (4.84)***	0.0289 (3.71)***	0.0532 (7.66)***	0.0247 (1.08)	0.0384 (4.85)***	0.0290 (3.72)**	0.0532 (7.66)***	0.0248 (1.08)
Expense Ratio	−0.5080 (−2.43)**	−0.5970 (−2.91)***	−0.5880 (−3.21)***	9.1600 (14.91)***	−0.5100 (−2.43)**	−0.5940 (−2.89)***	−0.5800 (−3.16)***	9.1520 (14.90)***
Turnover	−0.0063 (−8.49)***	−0.0044 (−6.10)***	0.0011 (1.70)*	−0.0143 (−6.45)***	−0.0063 (−8.51)***	−0.0044 (−6.13)***	0.0011 (1.67)*	−0.0143 (−6.45)***
Load Dummy	−0.0006 (−0.40)	−0.0011 (−0.72)	0.0024 (1.79)*	−0.0003 (−0.06)	−0.0006 (−0.40)	−0.0011 (−0.71)	0.0024 (1.80)*	−0.0003 (−0.06)
ICI	−0.0507 (−3.53)***	−0.0769 (−5.46)***	0.0200 (1.59)	−0.0560 (−1.24)	−0.0505 (−3.51)***	−0.0772 (−5.48)***	0.0192 (1.53)	−0.0557 (−1.23)
AS	0.0419 (3.44)*	0.0755 (6.31)***	0.0584 (5.47)***	−0.0719 (−1.85)*	0.0418 (3.43)***	0.0752 (6.28)*	0.0581 (5.44)***	−0.0716 (−1.84)*
Ret	0.1190 (12.25)***	0.1390 (14.58)***	0.0705 (8.27)***	−11.630 (−35.60)***	0.1190 (12.23)***	0.1390 (14.56)***	0.0704 (8.26)***	−11.630 (−38.60)***
Constant	0.1270 (10.67)***	0.1210 (10.35)***	0.0804 (7.74)***	0.5070 (10.38)***	0.1270 (10.70)***	0.1210 (10.42)***	0.0813 (7.82)***	0.507 (10.38)***
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Style & Family FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
$\bar{R}^2$ (%)	6.04	8.81	16.7	47.5	6.04	8.81	16.7	47.5
Obs.	101,275	101,275	101,275	147,633	101,275	101,275	101,275	147,633

Panel B	Multitasking Team Vs Multitasking Non-team				Strict Multitasking Team Vs Strict Multitasking Sole			
Dependent variable	$(1)\,Adj\text{-}\alpha^{4F}$	$(2)\,Adj\text{-}\alpha^{PS}$	$(3)\,Adj\text{-}\alpha^{FS}$	(4) RG	$(5)\,Adj\text{-}\alpha^{4F}$	$(6)\,Adj\text{-}\alpha^{PS}$	$(7)\,Adj\text{-}\alpha^{FS}$	(8) RG
Multitasking Team Indicator	0.0004 (0.25)	0.0035 (2.25)**	0.0031 (2.29)**	0.0028 (0.68)	-	-	-	-
SMT Indicator	-	-	-	-	0.0049 (2.26)**	0.0058 (2.72)***	0.0044 (2.33)**	0.0121 (2.73)***
Log(TNA)	−0.0028 (−2.37)***	−0.0008 (−0.71)	−0.0029 (−2.84)***	−0.0247 (−7.69)***	−0.0028 (−2.03)***	−0.0013 (−0.92)	−0.0019 (1.56)	−0.0212 (−4.72)***
Log(Family TNA)	−0.0229 (−8.54)***	−0.0252 (−9.61)***	−0.0140 (−6.01)***	−0.0708 (−10.60)***	−0.0263 (−8.33)***	−0.0281 (−9.05)***	−0.0135 (−4.95)***	−0.0938 (−9.72)***
Log(Age)	−0.0013 (−0.52)	−0.0006 (−0.25)	−0.0086 (−3.99)***	0.0225 (3.51)***	0.0018 (0.63)	0.0035 (1.22)	−0.0035 (−1.41)	0.0217 (2.36)**
NMG	0.0402 (4.34)***	0.0303 (3.33)***	0.0539 (6.67)***	0.0247 (1.08)	0.0396 (3.71)***	0.0263 (2.51)**	0.0597 (6.46)***	0.0277 (0.89)
Expense Ratio	−0.6470 (−2.57)**	−0.6410 (−2.59)**	−0.8900 (−4.05)***	9.1580 (14.91)***	−0.4310 (−1.43)**	−0.4640 (−1.57)	−0.6080 (−2.34)**	10.0800 (11.01)***
Turnover	−0.0056 (−6.12)***	−0.0034 (−3.60)***	0.0028 (3.50)***	−0.0143 (−6.44)***	−0.0062 (−5.92)***	−0.0052 (−5.07)***	0.0005 (0.53)	−0.0138 (−4.24)***
Load Dummy	0.0020 (1.05)	0.0021 (1.12)	0.0042 (2.57)**	−0.0003 (−0.05)	0.0025 (1.16)	0.0023 (1.07)	0.0045 (2.36)**	−0.0033 (−0.47)
ICI	−0.0304 (−1.72)*	−0.0565 (−3.25)***	0.0334 (2.17)**	−0.0556 (−1.23)	−0.0398 (−1.95)*	−0.0737 (−3.69)***	0.0254 (1.44)	0.0065 (0.10)
AS	0.0254 (1.68)*	0.0493 (3.34)***	0.0508 (3.87)***	−0.0714 (−1.84)*	0.0086 (0.49)	0.0290 (1.68)*	0.0166 (1.09)	−0.0863 (−1.55)
Ret	0.1350 (11.61)***	0.1580 (13.86)***	0.0761 (7.52)***	−11.6300 (−38.60)***	0.1430 (10.70)***	0.1670 (12.66)***	0.8240 (7.11)***	−11.4900 (−27.80)***
Constant	0.1300 (8.96)***	0.1310 (9.23)***	0.0848 (6.71)***	0.5070 (10.36)***	0.1480 (8.61)***	0.1560 (9.23)***	0.0981 (6.58)***	0.5760 (7.33)***
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Style & Family FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
$\bar{R}^2$ (%)	6.36	9.19	18.0	47.5	6.69	9.60	19.2	47.3
Obs.	69,967	69,967	69,967	147,633	53,236	53,236	53,236	76,920

Table III
Impact of Divergence of Investment Activities on Manager Performance

This table examines the impact of divergence in cross-fund investment activities, conducted by managers from different organizational form, on managers' performances. The dependent variable considered in column (1) to (3) is manager's TNA weighted average of adjusted returns estimated by the Carhart four-factor model. In column (4) to (6) the dependent variable is manager's performance rank generated by ranking all of managers cross-sectionally based on their TNA weighted average of four-factor adjusted returns. Three types of measures are considered to proxy the cross-fund investment activities of the multitasking managers, i.e. *Stock Trading Difference* is defined by the divergence of manager's trading on stocks; *Sector Trading Difference* is defined by the divergence of manager's trading on industrial sectors; *Cross Fund Return SD* is the cross-fund return standard deviation of funds affiliated to one manager. *SMT Indicator* takes the value of one if the manager is a SMT manager and zero if the manager is a SMS manager. Other control variables includes various manager level value-weighted average of fund controls defined in Table I. All regression specifications include both time and fund investment style fixed effects as well as fund family fixed effects. The test statistics are in parentheses. Statistical significance of 1%, 5%, and 10% is indicated by ***, **, and * respectively.

Dependent variable	Mgr $Adj\text{-}\alpha^{4F}$			Manager Performance Rank		
	(1)	(2)	(3)	(4)	(5)	(6)
Stock Trading Difference	−0.0013	-	-	−0.2450	-	-
	(−0.92)			(−1.91)*		
Stock Trading Difference × SMT Indicator	0.0036	-	-	0.4500	-	-
	(2.25)**			(2.96)***		
Sector Trading Difference	-	−0.0005	-	-	−0.1950	-
		(−0.37)			(−1.34)	
Sector Trading Difference × SMT Indicator	-	0.0018	-	-	0.4580	-
		(1.97)*			(2.84)***	
Cross Fund Return SD	-	-	−0.0440			−3.1700
			(−3.65)***			(−1.88)*
Cross Fund Return SD × SMT Indicator	-	-	0.0582			3.8750
			(4.28)***			(2.07)**
SMT Indicator	−0.0033	−0.0012	−0.0006	−0.3400	−0.1910	−0.0176
	(−2.25)**	(−1.21)	(−1.48)	(−2.74)***	(−2.32)**	(−0.47)
Log(Mgr TNA)	−0.0016	−0.0017	−0.0020	−0.0283	−0.0381	−0.0692
	(−3.01)***	(−3.00)***	(−7.01)***	(−0.89)	(−1.17)	(−3.10)***
Log(Tenure)	0.0021	0.0028	0.0006	−0.0302	−0.0382	−0.0644
	(2.08)**	(2.68)**	(1.15)	(−0.40)	(−0.50)	(−1.28)
Mgr NMG	0.0039	−0.0043	0.0027	0.7210	−0.6680	0.3350
	(0.63)	(−0.41)	(1.00)	(0.85)	(−0.45)	(0.77)
Mgr Turnover	−0.0014	−0.0010	−0.0005	−0.1100	−0.1110	−0.0719
	(−3.79)***	(−2.70)***	(−2.59)***	(−3.94)***	(−3.87)***	(−4.30)***
Mgr Expense Ratio	−0.0169	−0.0287	−0.0381	−28.640	−27.960	−34.370
	(−0.15)	(−0.25)	(−0.65)	(−4.15)***	(−3.95)***	(−7.32)***
Mgr ICI	−0.0030	−0.0003	−0.0148	−1.0080	−0.9740	−1.0710
	(−0.47)	(−0.04)	(−4.47)***	(−1.71)*	(−1.58)	(−2.87)***

Table III

Impact of Divergence of Investment Activities on Manager Performance (cont'd)

Dependent variable	Mgr $Adj\text{-}\alpha^{4F}$			Manager Performance Rank		
	(1)	(2)	(3)	(4)	(5)	(6)
Mgr AS	0.0013	−0.0017	0.0040	1.1010	1.1260	1.1430
	(0.22)	(−0.30)	(1.35)	(2.95)***	(2.94)***	(4.67)***
Mgr Ret	−0.0118	−0.0122	0.0102	0.5880	0.7750	0.2110
	(−4.44)***	(−4.52)***	(8.79)***	(1.72)*	(1.87)	(1.17)
Log(No. of Style)	0.0038	0.0024	0.0027	0.1110	−0.0706	0.1670
	(1.41)	(0.85)	(1.98)**	(0.56)	(−0.35)	(1.34)
Constant	0.0107	0.0104	0.0079	Yes	Yes	Yes
	(1.83)*	(1.78)*	(2.70)***			
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Style & Family FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	11,798	11,382	40,485	11,798	11,382	40,485

Table IV

Impact of Divergence in Investment Style on Manager Performance

This table examines the impact of divergence in investment style, conducted by managers from different organizational form, on their averaged performances. The dependent variable considered in column (1) to (4) is manager's TNA weighted average of adjusted returns estimated by the Carhart four-factor model. In column (5) to (8) the dependent variable is manager's performance rank generated by ranking all of managers cross-sectionally based on their TNA weighted average of four-factor adjusted returns. The manager's divergence of investment style is computed by the cross-fund standard deviation of the style extremity given by each of the affiliated funds. $Mgr\ SE^{\text{Market Beta}}$, $Mgr\ SE^{\text{SMB}}$, $Mgr\ SE^{\text{HML}}$ and $Mgr\ SE^{\text{UMD}}$ are the divergence of investment style for market beta, size effect, value effect and momentum effect, respectively. $SMT\ Indicator$ takes the value of one if the manager is a SMT manager and zero if the manager is a SMS manager. Other control variables includes various manager level value-weighted average of fund controls defined in Table I. All regression specifications include both time and fund investment style fixed effects as well as fund family fixed effects. The test statistics are in parentheses. Statistical significance of 1%, 5%, and 10% is indicated by ***, **, and * respectively.

Dependent variable	Mgr $Adj\text{-}\alpha^{4F}$				Manager Performance Rank			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Mgr SE$^{\text{Market Beta}}$	−0.0015 (−2.20)**	-	-	-	−0.2490 (−1.27)	-	-	-
Mgr SE$^{\text{Market Beta}}$ × SMT Indicator	0.0021 (2.68)***	-	-	-	0.3650 (1.67)*	-	-	-
Mgr SE$^{\text{SMB}}$	-	−0.0016 (−2.21)**	-	-	-	−0.4030 (−2.02)**	-	-
Mgr SE$^{\text{SMB}}$ × SMT Indicator	-	0.0013 (1.55)	-	-	-	0.3440 (1.54)	-	-
Mgr SE$^{\text{HML}}$	-	-	−0.0014 (−1.64)	-	-	-	−0.4920 (−1.99)**	-
Mgr SE$^{\text{HML}}$ × SMT Indicator	-	-	0.0014 (1.97)**	-	-	-	0.5430 (2.01)**	-
Mgr SE$^{\text{UMD}}$	-	-	-	−0.0024 (−3.29)***	-	-	-	−0.5520 (−2.55)**
Mgr SE$^{\text{UMD}}$ × SMT Indicator	-	-	-	0.0029 (3.42)***	-	-	-	0.6290 (2.59)***
SMT Indicator	−0.0011 (−1.20)	−0.0008 (−0.85)	−0.0007 (−0.70)	−0.0015 (−1.58)	−0.4100 (−2.61)***	−0.4080 (−2.49)**	−0.4630 (−2.81)***	−0.5230 (−3.20)***

Dependent variable	Mgr $Adj\text{-}\alpha^{4F}$				Manager Performance Rank			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Log(Mgr TNA)	−0.0026	−0.0027	−0.0026	−0.0025	−0.2050	−0.2050	−0.2150	−0.2050
	(−3.87)***	(−3.91)***	(−3.81)***	(−3.62)***	(−2.46)**	(−2.49)**	(−2.59)***	(−2.47)^j**
Log(Tenure)	0.0009	0.0010	0.0011	0.0010	−0.2260	−0.2160	−0.2190	−0.2160
	(0.72)	(0.84)	(0.88)	(0.85)	(−1.22)	(−1.17)	(−1.20)	(−1.17)
Mgr NMG	−0.0852	−0.0611	−0.0684	−0.0612	−2.8080	−2.0690	−1.7150	−1.8030
	(−0.85)	(−0.62)	(−0.69)	(−0.62)	(−0.30)	(−0.22)	(−0.18)	(−0.19)
Mgr Turnover	−0.0003	−0.0005	−0.0004	−0.0002	−0.2110	−0.2110	−0.209	−0.2040
	(−0.67)	(−0.96)	(−0.74)	(−0.35)	(−2.80)***	(−2.81)***	(−2.79)***	(−2.70)***
Mgr Expense Ratio	0.1070	0.1130	0.1010	0.1250	−97.120	−96.780	−97.650	−95.420
	(0.68)	(0.72)	(0.65)	(0.80)	(−4.85)***	(−4.87)***	(−4.91)***	(−4.75)***
Mgr ICI	0.0026	0.0023	0.0017	0.0014	−3.5720	−3.5040	−3.4670	−3.4020
	(0.33)	(0.29)	(0.22)	(0.18)	(−2.24)**	(−2.21)**	(−2.19)**	(−2.14)**
Mgr AS	−0.0156	−0.0168	−0.0156	−0.0168	3.3140	3.3740	3.2900	3.3120
	(−1.88)*	(−2.04)**	(−1.88)*	(−2.03)**	(3.16)***	(3.24)***	(3.15)***	(3.16)***
Mgr Ret	−0.0323	−0.0332	−0.0336	−0.0353	−4.3910	−4.3750	−4.3020	−4.8010
	(−4.12)***	(−4.24)***	(−4.29)***	(−4.51)***	(−1.87)*	(−1.87)*	(−1.83)*	(−2.05)**
Log(No. of Style)	−0.0016	−0.0007	−0.0010	−0.0008	0.6220	0.7990	0.7310	0.7130
	(−0.53)	(−0.23)	(−0.31)	(−0.26)	(1.37)	(1.77)	(1.62)	(1.57)
Constant	0.0270	0.0274	0.0269	0.0274	Yes	Yes	Yes	Yes
	(5.75)***	(5.80)***	(5.69)***	(5.83)***				
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Style & Family FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	1,530	1,530	1,530	1,530	1,530	1,530	1,530	1,530

Table V

Heterogeneity in Investment Activities and Manager Performance

This table examines the impact of heterogeneity in investment activities on managers' averaged performances. The dependent variable considered in column (1) to (3) is manager's TNA weighted average of adjusted returns estimated by the four-factor model. In column (4) to (6) the dependent variable is manager's performance rank generated by ranking all of managers cross-sectionally based on their TNA weighted average of adjusted returns. Three types of measures are considered to proxy the cross-fund investment activities of the multitasking managers, i.e. *Stock Trading Difference* is defined by the divergence of manager's trading on stocks; *Sector Trading Difference* is defined by the divergence of manager's trading on industrial sectors; *Cross Fund Return SD* is the cross-fund return standard deviation of funds affiliated to one manager. Other control variables includes various manager level value-weighted average of fund controls defined in Table I. All regression specifications include both time and fund investment style fixed effects as well as fund family fixed effects. The test statistics are in parentheses. Statistical significance of 1%, 5%, and 10% is indicated by ***, **, and * respectively.

Dependent variable	Mgr Adj-α^{4F}			Manager Performance Rank		
	(1)	(2)	(3)	(4)	(5)	(6)
			SMT Indicator= 1			
Stock Trading Difference	0.0019	-	-	0.19900	-	-
	(1.77)*			(1.96)*		
Sector Trading Difference	-	0.0010	-	-	0.2580	-
		(1.94)*			(2.84)***	
Cross Fund Return SD	-	-	0.0123			0.6090
			(1.99)**			(2.88)***
Log(Mgr TNA)	−0.0006	−0.0008	−0.0015	−0.0449	−0.0670	−0.0643
	(−0.98)	(−1.24)	(−4.47)***	(−1.21)	(−1.74)*	(−2.63)**
Log(Tenure)	0.0015	0.0024	−0.0009	−0.0502	−0.0519	−0.1090
	(1.31)	(2.05)**	(−1.50)	(−0.59)	(−0.59)	(−1.84)*
Mgr NMG	0.0026	−0.0085	0.0140	0.7230	−0.9670	2.1570
	(0.44)	(−0.86)	(2.83)***	(0.84)	(−0.65)	(2.77)***
Mgr Turnover	−0.0017	−0.0011	−0.0006	−0.1230	−0.1180	−0.0655
	(−4.00)***	(−2.36)**	(−2.50)**	(−3.38)***	(−3.14)***	(−2.67)***
Mgr Expense Ratio	−0.0158	−0.0638	0.0003	−38.310	−37.960	−41.530
	(−0.13)	(−0.50)	(0.00)	(−4.77)***	(−4.57)***	(−7.36)***
Mgr ICI	0.0144	0.0176	−0.0099	−0.6910	−0.7880	−0.3770
	(1.90)*	(2.30)**	(−2.46)**	(−0.98)	(−1.05)	(−0.84)
Mgr AS	0.0068	0.0043	0.0025	1.1000	1.0770	0.8740
	(1.07)	(0.66)	(0.75)	(2.45)**	(2.33)**	(2.89)***
Mgr Ret	−0.0122	−0.0112	0.0114	0.2760	0.4970	0.2890
	(−4.11)***	(−3.73)***	(8.77)***	(0.57)	(1.01)	(1.36)
Log(No. of Style)	0.0036	0.0029	0.0029	0.1920	0.0405	0.2140
	(1.27)	(1.00)	(2.04)**	(0.87)	(0.17)	(1.48)
Constant	0.0006	0.0044	0.0053	Yes	Yes	Yes
	(0.10)	(0.69)	(1.73)*			
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Style & Family FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	8,877	8,561	30,432	8,877	8,561	30,432

Table VI
Impact of Team Status on Investment Activities

This table reports the estimation results of regressing the pairwise heterogeneity in investment activities on the team status of the multitasking managers. In column (1) and (2) the dependent variable are the divergence of manager's trading on stocks and industrial sectors, respectively. The dependent variable in column (3) is the pairwise absolute difference of the four factor adjusted returns. In column (4) to (7) the dependent variables are the pairwise absolute difference of the style extremity measure for market beta, size effect, value effect and momentum effect from the Carhart four factor model, respectively. *SMT Indicator* takes the value of one if the manager is a SMT manager and zero if the manager is a SMS manager. Fund pairs are created by pairing each of the sampled multitasking funds with two funds: one randomly sampled from the underlying funds from the same managers; the other is sampled from a a group of funds having comparable characteristics to the previous one but under different management. Statistical significance of 1%, 5%, and 10% is indicated by ***, **, and * respectively.

Dependent variable:	(1): Stocks	(2): Sectors	(3):$\Delta Adj\text{-}\alpha^{4F}$	(4):Δ SE^{Beta}	(5):Δ SE^{SMB}	(6):Δ SE^{HML}	(7):Δ SE^{UMD}
Same Mgr	−0.2330	−0.1440	−0.0039	−0.1510	−0.1250	−0.2710	−0.2244
	(−39.25)***	(−24.25)***	(−21.43)***	(−5.33)***	(−4.23)***	(−10.83)***	(−8.36)***
Same Mgr	0.0870	0.0388	0.0018	0.0670	0.0596	0.1530	0.0807
× SMT Indicator	(13.53)***	(6.05)***	(9.02)***	(2.17)**	(1.86)*	(5.64)***	(2.78)***
SMT Indicator	0.0129	0.0211	−0.0011	−0.0141	0.0372	−0.1070	−0.0767
	(2.25)**	(3.69)***	(−6.25)***	(−0.50)	(1.29)	(−4.37)***	(−2.92)***
Same Style	−0.1090	−0.0696	−0.0020	−0.2400	−0.1780	−0.1860	−0.1980
	(−42.82)***	(−27.41)***	(−25.62)***	(−19.64)***	(−14.07)***	(−17.30)***	(−17.20)***
Δ TNA	−0.0002	−0.0028	0.0001	0.0073	0.0292	−0.0262	0.0267
	(−0.08)	(−1.38)	(1.21)	(0.73)	(2.83)***	(−2.99)***	(2.84)***
Δ Age	−0.0507	−0.0392	−0.0008	−0.0571	−0.0427	−0.0905	−0.0419
	(−12.12)***	(−9.35)***	(−6.20)***	(−2.87)***	(−2.07)**	(−5.16)***	(−2.23)**
Δ Expense Ratio	−4.1350	−0.3940	0.0266	18.9100	−4.1550	−6.8850	0.9050
	(−11.07)***	(−1.06)	(2.24)**	(9.86)***	(−2.09)**	(−4.08)***	(0.50)
Δ NMG	0.0433	0.0316	0.0044	0.4880	0.3370	0.1990	0.2140
	(3.59)***	(2.62)***	(9.63)***	(7.74)***	(5.15)***	(3.60)***	(3.61)***

Table VI
Impact of Team Status on Investment Activities (cont'd)

Dependent variable:	(1): Stocks	(2): Sectors	(3):$\Delta Adj\text{-}\alpha^{4F}$	(4):Δ SE^{Beta}	(5):Δ SE^{SMB}	(6):Δ SE^{HML}	(7):Δ SE^{UMD}
Δ AS	1.3030	0.6050	0.0196	0.7720	0.2130	0.5940	0.6670
	(52.69)***	(24.52)***	(26.03)***	(6.50)***	(1.73)*	(5.68)***	(5.95)***
Δ ICI	1.3090	1.3640	0.0414	3.0350	3.0700	2.7320	2.7500
	(41.15)***	(43.11)***	(42.33)***	(19.01)***	(18.54)***	(19.45)***	(18.26)***
Constant	0.9860	0.5300	0.0193	0.9660	0.8010	0.9180	0.7920
	(76.18)***	(40.20)***	(53.49)***	(15.17)***	(12.13)***	(16.38)***	(13.18)***
Style FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
$\bar{R}^2$ (%)	39.7	23.6	16.5	8.13	4.93	7.16	6.46
Obs.	32,153	31,716	76,222	21,343	21,343	21,343	21,343

Table VII
Does Fund Style Drive Managers' Heterogeneity In Investment Activities

This table reports the estimation results of regressing the pairwise heterogeneity in investment activities on the team status of the multitasking managers. In column (1) and (2) the dependent variable are the divergence of manager's trading on stocks and industrial sectors, respectively. The dependent variable in column (3) is the pairwise absolute difference of the four factor adjusted returns. In column (4) to (7) the dependent variables are the pairwise absolute difference of the style extremity measure for market beta, size effect, value effect and momentum effect from the Carhart four factor model, respectively. *SMT Indicator* takes the value of one if the manager is a SMT manager and zero if the manager is a SMS manager. Fund pairs are created by pairing each of the sampled multitasking funds with two funds: one randomly sampled from the underlying funds from the same managers; the other is sampled from a a group of funds having comparable characteristics to the previous one but under different management. Statistical significance of 1%, 5%, and 10% is indicated by ***, **, and * respectively.

Dependent variable:	(1): Stocks	(2): Sectors	(3):ΔAdj-α^{4F}	(4):Δ SE^{Beta}	(5):Δ SE^{SMB}	(6):Δ SE^{HML}	(7):Δ SE^{UMD}
Same Mgr	−0.1080	−0.0804	−0.0028	0.0314	0.0097	−0.2100	−0.0792
	(−13.00)***	(−9.52)***	(−10.33)***	(0.77)	(0.23)	(−5.85)***	(−2.06)**
Same Mgr	0.0116	−0.0012	0.0010	−0.0606	0.0023	0.1520	−0.0097
× SMT Indicator	(1.30)	(−0.13)	(3.37)***	(−1.39)	(0.05)	(3.97)***	(−0.23)
Same Mgr × SMT	0.1100	0.0601	0.0013	0.1990	0.0469	−0.0463	0.1290
Indicator × Same Style	(8.72)***	(4.70)***	(3.20)***	(3.22)***	(0.73)	(−0.85)	(2.21)**
Same Mgr × Same Style	−0.2430	−0.1230	−0.0022	−0.3520	−0.2610	−0.1180	−0.2790
	(−21.18)***	(−10.55)***	(−6.07)***	(−6.27)***	(−4.50)***	(−2.40)**	(−5.28)***
SMT Indicator	0.0084	−0.0035	−0.0006	−0.0597	0.1770	0.1350	−0.0017
× Same Style	(0.76)	(−0.31)	(−1.92)*	(−1.08)	(3.10)***	(2.79)**	(−0.03)
SMT Indicator	0.0236	0.0302	−0.0006	0.0381	−0.0239	−0.1560	−0.0552
	(2.99)***	(3.76)***	(−2.42)**	(0.97)	(−0.59)	(−4.52)***	(−1.49)
Same Style	−0.0062	−0.0135	−0.0005	−0.0479	−0.1530	−0.1810	−0.0654
	(−0.60)	(−1.29)	(−1.58)	(−0.94)	(−2.89)***	(−4.03)***	(−1.36)
Constant	0.9320	0.5010	0.0185	0.8670	0.7850	0.9160	0.7230
	(68.48)***	(35.59)***	(46.33)***	(12.68)***	(11.09)***	(15.22)***	(11.21)***
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Style & Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
$\bar{R}^2$ (%)	42.5	24.4	16.6	8.54	5.67	7.53	6.85
Obs.	32,153	31,716	76,222	21,343	21,343	21,343	21,343

Table VIII
Managerial Overlapping and Diversity of Investment Activities

This table analyzes the impact of the pairwise-overlapping in managerial experience on the heterogeneity of SMT managers' investment activities. Fund pairs are created by mapping any one fund with the other underlying funds attached to the same SMT manager. In column (1) and (2) the dependent variable are the divergence of manager's trading on stocks and industrial sectors, respectively. The dependent variable in column (3) is the pairwise absolute difference of the four factor adjusted returns. In column (4) to (7) the dependent variables are the pairwise absolute difference of the style extremity measure for market beta, size effect, value effect and momentum effect from the Carhart four factor model, respectively. *Mgr Overlap* is the Jaccard index comparing the similarity of the paired management teams. *Mgr Exp Overlap* compares the similarity of colleagues associated to the paired management teams. Statistical significance of 1%, 5%, and 10% is indicated by ***, **, and * respectively.

Dependent variable:	(1): Stocks	(2): Sectors	(3):$\Delta Adj\text{-}\alpha^{4F}$	(4):Δ SE^{Beta}	(5):Δ SE^{SMB}	(6):Δ SE^{HML}	(7):Δ SE^{UMD}
				Panel A			
Mgr Overlap	-0.0911	-0.0633	-0.0007	0.0127	-0.0331	0.0046	-0.0455
	$(-28.19)^{***}$	$(-19.61)^{***}$	$(-7.22)^{***}$	(0.72)	$(-1.89)^{*}$	(0.30)	$(-2.83)^{***}$
Constant	0.7580	0.2800	0.0061	0.6590	0.6190	0.7430	0.6740
	$(5.42)^{***}$	$(2.02)^{**}$	(0.97)	$(10.79)^{***}$	$(10.19)^{***}$	$(14.15)^{***}$	$(12.08)^{***}$
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Style & Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
$\bar{R}^2$ (%)	28.4	14.3	15.1	6.88	2.92	5.91	5.40
Obs.	20,378	20,160	43,634	10,129	10,129	10,129	10,129
				Panel B			
Mgr Exp Overlap	-0.0451	-0.0368	-0.0001	0.0247	-0.0347	-0.0310	-0.0543
	$(-13.26)^{***}$	$(-10.91)^{***}$	(-1.06)	(1.35)	$(-1.91)^{*}$	$(-1.98)^{**}$	$(-3.26)^{***}$
Constant	0.6360	0.1930	0.0051	0.6610	0.6690	0.7340	0.6510
	$(4.49)^{***}$	(1.38)	(0.82)	$(11.23)^{***}$	$(11.44)^{***}$	$(14.51)^{***}$	$(12.12)^{***}$
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Style & Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
$\bar{R}^2$ (%)	26.3	13.2	15.0	6.90	2.92	5.95	5.43
Obs.	20,378	20,160	43,634	10,129	10,129	10,129	10,129

Table IX
Diversity of Investment Experience and Heterogeneity in Investment Activities

This table analyzes the impact of the pairwise-overlapping in investment experience on the heterogeneity of SMT managers' investment activities. Fund pairs are created by mapping any one fund with the other underlying funds attached to the same SMT manager. In column (1) and (2) the dependent variable are the divergence of manager's trading on stocks and industrial sectors, respectively. The dependent variable in column (3) is the pairwise absolute difference of the four factor adjusted returns. In column (4) to (7) the dependent variables are the pairwise absolute difference of the style extremity measure for market beta, size effect, value effect and momentum effect from the Carhart four factor model, respectively. *Style Exp Overlap* and *Sector Exp Overlap* compare the similarity of historical investment experience on managing fund styles and sector trading between the paired management teams, respectively. Statistical significance of 1%, 5%, and 10% is indicated by ***, **, and * respectively.

Dependent variable:	(1): Stocks	(2): Sectors	(3):ΔAdj-α^{4F}	(4):Δ SE^{Beta}	(5):Δ SE^{SMB}	(6):Δ SE^{HML}	(7):Δ SE^{UMD}
				Panel A			
Style Exp Overlap	−0.0538	−0.0406	−0.0013	−0.1070	−0.1900	−0.0464	−0.1090
	(−14.42)***	(−10.98)***	(−11.57)***	(−5.30)***	(−9.50)***	(−2.67)***	(−5.93)***
Constant	0.6880	0.2330	0.0051	0.6990	0.7020	0.7590	0.6540
	(4.85)***	(1.67)*	(0.82)	(11.97)***	(12.11)***	(15.11)***	(12.27)***
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Style & Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
$\bar{R}^2$ (%)	26.4	13.2	15.2	7.14	3.75	5.98	5.66
Obs.	20,378	20,160	43,634	10,129	10,129	10,129	10,129
				Panel B			
Sector Exp Overlap	−0.0668	−0.0570	−0.0012	−0.1250	−0.1240	−0.0983	−0.1060
	(−12.46)***	(−10.48)***	(−7.51)***	(−3.75)***	(−3.73)***	(−3.43)***	(−3.47)***
Constant	0.6860	0.2300	0.0065	0.7600	0.7520	0.8260	0.7250
	(4.84)***	(1.65)*	(1.04)	(11.73)***	(11.65)***	(14.80)***	(12.24)***
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Style & Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
$\bar{R}^2$ (%)	26.2	13.2	15.1	7.15	3.02	6.15	5.33
Obs.	20,687	20,469	43,405	10,301	10,301	10,301	10,301

Table X
Economic Significance of Team Diversity and Fund Performance

This table analyzes the economic significance on the impact of team diversity on fund performance. Team diversity are defined in SectionIV.B in which managers' tracking record on collaboration with others, varieties of fund styles under management and sector investment experience are measured. Panel A reports the coefficients of the managerial team diversity when regressing each of the three team diversity measures on individual fund performance. Panel B and C compare the return given by portfolio of funds under different team structure, i.e. single-tasking team and multitasking team, and formed through ranking funds cross-sectional according to their team diversity in the previous 12 months. Panel B and C compare returns of portfolio contained funds with above-median and below-median value of team diversity. Statistical significance of 1%, 5%, and 10% is indicated by ***, **, and * respectively.

Diversity Measure:	**(1): Mgr Exp Overlap**		**(2): Style Exp Overlap**		**(3): Sector Exp Overlap**	
	Panel A: Team diversity and fund performance					
Coefficient on	-0.0060		-0.0087		-0.0145	
diversity measure	$(-1.78)^*$		$(-2.55)^{**}$		$(-2.58)^{***}$	
Controls	Yes		Yes		Yes	
Style & Year FE	Yes		Yes		Yes	
$\bar{R}^2$ (%)	7.20		7.21		7.22	
Obs.	$32,177$		$32,177$		$32,130$	
Organizational Forms	(1): Single-task	(2): SMT	(3): Single-task	(4): SMT	(5): Single-task	(6): SMT
	Panel B: High Diversity Team					
$Adj\text{-}\alpha^{4F}$	-0.0101	-0.0017	-0.01473	-0.0067	-0.0169	-0.0047
Single-task$-$SMT	-0.0084		-0.0081		-0.0121	
	$(-1.33)^*$		$(-1.34)^*$		$(-1.92)^{**}$	
	Panel C: Low Diversity Team					
$Adj\text{-}\alpha^{4F}$	-0.0031	-0.0143	0.0031	-0.0079	0.0071	-0.0093
Single-task$-$SMT	0.0113		0.0110		0.0164	
	(1.06)		(0.61)		(1.01)	

Table XI
Managerial Favoritism And Fund Performance

This table examines the impact of managerial favoritism on fund performance. Panel A examines the performance shifting between high/low value funds affiliated to certain multitasking manager. High/low value funds are defined following three criteria, i.e. fund age, expense ratio and performance. Funds are classified as high (low) value funds if their age are ranked at the top 25th (75th) quartile among all underlying funds. The dependent variable is calculated by taking the factor-adjusted performance difference between the high- and low-value funds. Panel B examines the performance shifting between funds newly included under the management of multitasking managers, for the period of 12-, 18- and 24-month following the inception of multitasking manager(s), and their incumbent funds. *SMT Indicator* takes the value of one if the manager is a SMT manager and zero if the manager is a SMS manager. The control variables are defined in Table I. Statistical significance of 1%, 5%, and 10% is indicated by ***, **, and * respectively.

| *A: High vs Low value*	**(1) Age**	**(2) Expense Ratio**	**(3)** $Adj\text{-}\alpha^{4F}$
Same Mgr	−0.0005	0.0001	0.0020
	(−0.98)	(0.25)	(1.77)*
Same Mgr×SMT Indicator	0.0005	0.0003	−0.0013
	(0.92)	(0.49)	(−1.98)**
SMT Indicator	−0.0003	−0.0012	−0.0001
	(−0.56)	(−2.43)**	(−0.05)
Constant	−0.0044	0.0033	0.0099
	(−2.30)**	(1.80)*	(3.02)***
Controls	Yes	Yes	Yes
Style & Year FE	Yes	Yes	Yes
$\bar{R}^2$ (%)	1.12	1.59	1.82
Obs.	17,821	19,342	7,453
B: Effort substitution	**(1) 12M**	**(2) 18M**	**(3) 24M**
Same Mgr	0.0030	0.0014	−0.0005
	(2.56)**	(1.37)	(−0.56)
Same Mgr×SMT Indicator	−0.0039	−0.0016	0.0003
	(−3.05)***	(−1.50)	(0.29)
SMT Indicator	0.0044	0.0021	0.0001
	(3.79)***	(2.17)**	(0.14)
Constant	0.0016	0.0069	0.0102
	(0.79)	(3.64)***	(5.64)***
Controls	Yes	Yes	Yes
Style & Year FE	Yes	Yes	Yes
$\bar{R}^2$ (%)	1.88	1.06	1.57
Obs.	4,125	5,589	6,269
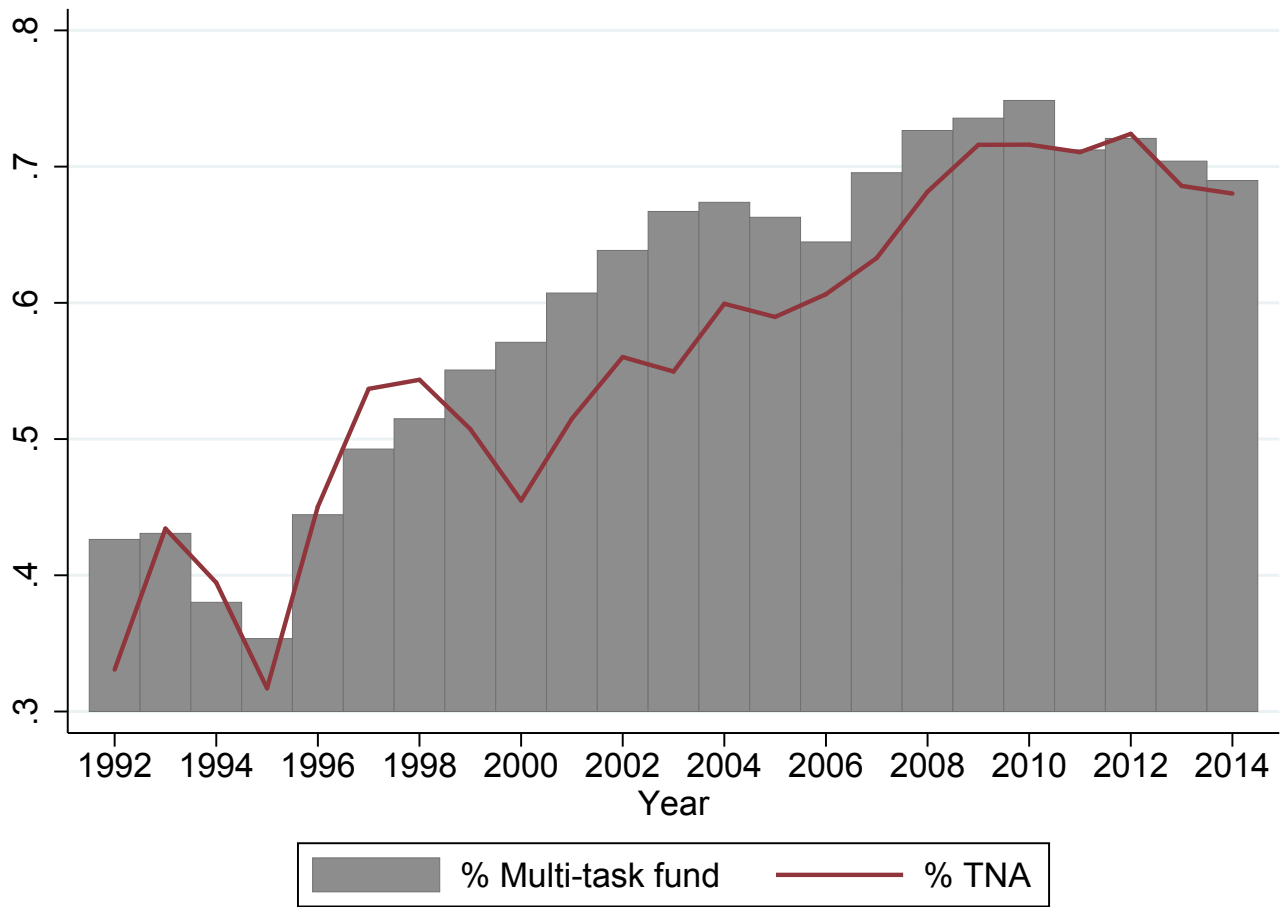
Figure 1. Summary of Multitasking Fund Managers This figure describes the percentage number of funds and the total asset under management from the multitasking managers in the US fund universe from 1992 and 2014.
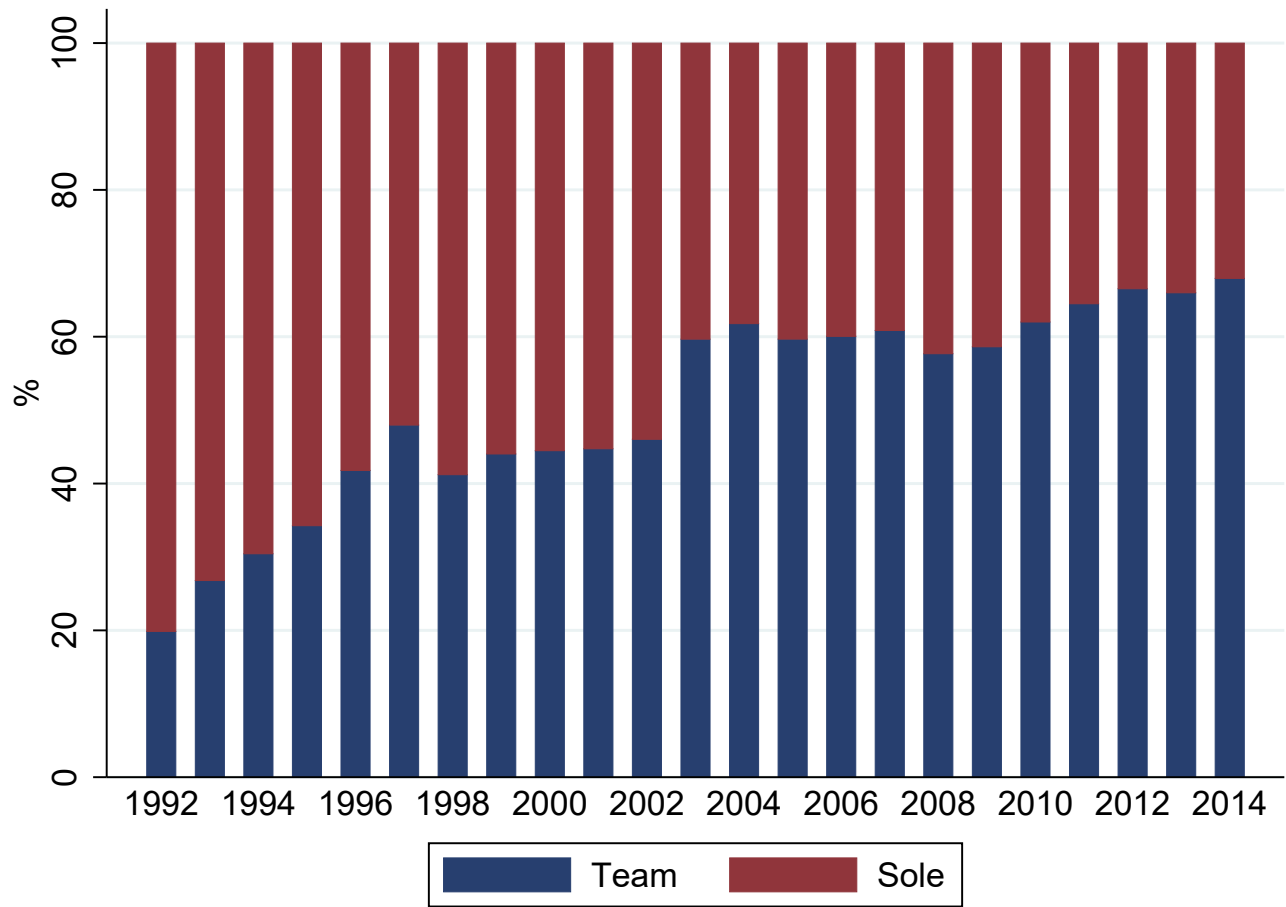
Figure 2. Summary of Managerial Structure in Multitasking Funds This figure compares the percentage number of multitasking funds managed by sole managers against team management for the sample period between 1992 and 2014.
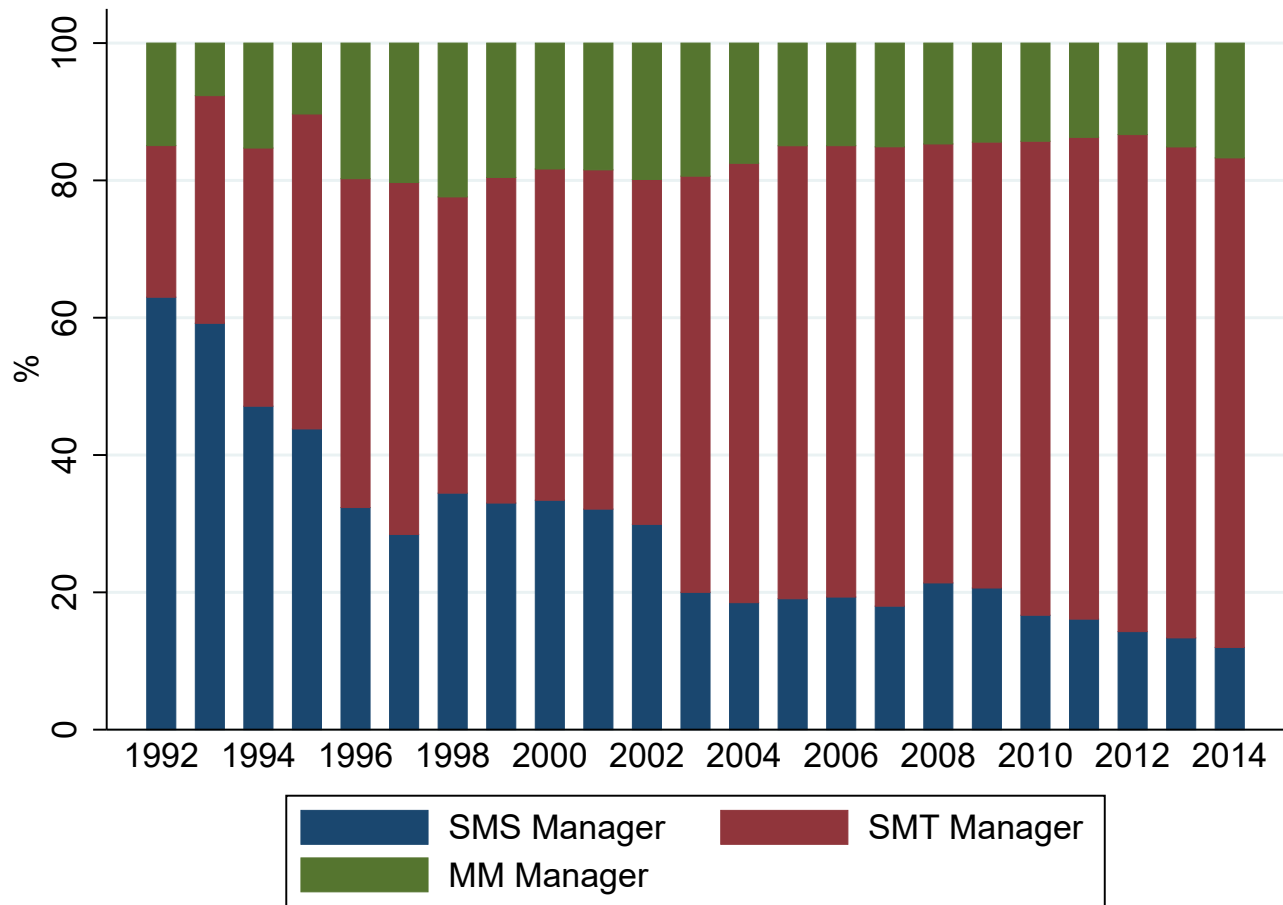
Figure 3. Summary of Types of Multitasking Managers This figure compares the proportion of three types of multitasking fund managers across the sample period between 1992 and 2014, namely, Strict multitasking sole (SMS Manager): A multitasking manager conducts management duties without teaming up with others for all of her affiliated funds; Strict multitasking team (SMT Manager): A multitasking manager conduct management duties for all of her affiliated funds only by teaming up with other managers; Mixed multitasking (MM Manager): A multitasking manager not only conducts sole management for part of her funds but simultaneously works as a team member for other affiliated funds.

Internet Appendix
(This version: 13th Jan 2017)

Table A1
Impact of Family Policy on Fund Performance

This table examines the impact of SMT managers on fund performance following a instrumental variable approach by using a two stage least squares regressions (2SLS). Panel A reports the first stage regression with the dependent variable as SMT Indicator, and the main regressor as the instrumental variable, *Family Policy*, defined as the percentage of funds running by SMT managers from a certain family at the end of per annum. Panel B reports results from the second stage regression by regressing various measure of fund performance on the fitted value given by the first stage model. The performance measures contain factor-adjusted returns based on the four-factor Carhart model, the liquidity-factor model and the conditional factor model, together with the return gaps. Independent variables also includes various fund and fund family controls defined in Table I. All regression specifications include both time and fund investment style fixed effects as well as fund family fixed effects. Statistical significance of 1%, 5%, and 10% is indicated by ***, **, and * respectively.

	Panel A: First stage regression	
Dependent variable:	*SMT Indicator*	
Family Policy	0.8680	$(20.43)^{***}$
Log(TNA)	0.0144	$(8.22)^{***}$
Log(Family TNA)	0.0013	(0.35)
Log(Age)	-0.0101	$(-2.84)^{***}$
NMG	0.0171	(1.41)
Expense Ratio	0.7400	$(2.12)^{**}$
Turnover	-0.0025	$(-2.03)^{**}$
Load Dummy	0.0047	$(1.69)^{*}$
ICI	-0.0884	$(-3.61)^{***}$
AS	-0.0723	$(-4.03)^{***}$
Ret	0.0175	(0.99)
Constant	0.0892	$(4.94)^{***}$
Year FE	Yes	
Style & Family FE	Yes	
F Ratio	1778.1^{***}	
$\bar{R}^2$ (%)	72.9	
Obs.	$81,713$	

	Panel B: Second stage regression			
Dependent variable	$(1) Adj\text{-}\alpha^{4F}$	$(2) Adj\text{-}\alpha^{PS}$	$(3) Adj\text{-}\alpha^{FS}$	(4) RG
SMT Indicator	0.0060	0.0090	0.0056	0.0281
	$(1.92)^{**}$	$(2.48)^{***}$	$(1.74)^{*}$	$(2.48)^{**}$
Fund & family controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Style & Family FE	Yes	Yes	Yes	Yes
Obs.	52,506	52,506	52,506	75,946

Table A2

Heterogeneous Investment Activities And Out-of-Sample Portfolio Performance

This table compares the factor adjusted returns delivered by portfolio of funds from multitasking managers with various heterogeneity level in investment activities. Managers are ranked in deciles with an ascending order based on their monthly heterogeneity level of investment behavior measured by three proxies, i.e. Stock trading, sector trading and cross-fund return SD. Funds are formed into portfolios for each decile. Four-factor-adjusted returns are estimated using the TNA-weighted returns of funds from each portfolio for the following twelve months. Fund portfolios are classified according to their decile ranks of investment heterogeneities, i.e. above or below the 5th decile (HighStd or LowStd) and their managerial forms (Sole- or team-multitasking). The test statistics are in parentheses. One-tail statistical significance of 1%, 5%, and 10% is indicated by ***, **, and * respectively.

	(1) Stock Trading Difference	(2) Sector Trading Difference	(3) Cross Fund Return SD
HighStd-Sole −HighStd-Team	−0.0011 $(-2.04)^{**}$	−0.0013 $(-2.27)^{***}$	−0.0007 $(-1.38)^{*}$
LowStd-Sole −LowStd-Team	0.000 (0.10)	0.0009 $(1.51)^{*}$	−0.0001 (-0.22)
10*th*-Sole −10*th*-Team	−0.0011 $(-1.65)^{**}$	−0.0021 $(-2.30)^{***}$	0.0009 (0.60)
1*st*-Sole −1*st*-Team	0.0000 (0.03)	−0.0002 (-0.25)	0.0006 (0.75)