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投資信託は企業の成長性を重視するか？中国における実証分析

Do Mutual Funds Prefer Growth of Companies? Evidence from China

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Abstract

This paper examines the correlation between mutual fund ownership and firm growth. Using data of Chinese listed companies from 2011 to 2019, we find that Chinese mutual funds prefer to invest in firms with higher Tobin's Q ratio, larger capital expenditure and higher sales growth rate. We also find that mutual fund ownership is positively associated with capital expenditures and sales growth rate in subsequent years, by using OLS regressions and fixed-effect estimations. The propensity scoring matching analysis further supports mutual funds' positive effects on capital expenditure and sales growth rate. These results indicate that Chinese mutual funds prefer utilizing a growth-oriented strategy instead of a more conservative income-focused strategy, despite the latter curtailing free cash flow problems. We also examine the effects of mutual fund ownership on dividend payout, cash holding level and firm performance as measured by Tobin's Q and ROA. We find little evidence that mutual fund ownership is positively associated with dividend payouts. In contrast, we find that mutual fund ownership is positively related to cash holding level. Furthermore, we find that mutual fund ownership is positively associated with a firm's operating and financial performance in subsequent years, which indicates that growth-oriented investment strategies of mutual funds contribute to value creation.

1. Introduction

In the Chinese market, the concentrated shareholding structure and lack of information transparency make minority shareholders face high costs to secure appropriate returns due to insufficient timely financial information. Accordingly, it is challenging for minority shareholders to oversee companies effectively.

In contrast to individual investors who have a lower ownership stake, public mutual funds cannot employ traditional strategies such as selling off stocks to protect their capital value. Given their large share holdings, they cannot dispose of their shares without causing a significant decline in stock

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prices. Consequently, public mutual funds are motivated to actively engage in supervision to obtain greater supervisory benefits. Additionally, as mutual funds hold shares in numerous companies, their engagement in the corporate governance process enables them to accumulate professional knowledge concerning successful and effective practices which can be applied to their holdings in other investee companies. The sharing of such expertise substantially reduces the unit cost of mutual funds' engagement in corporate governance, making their participation a profitable venture with long-term benefits.

In China, the government has actively encouraged developments in the mutual fund industry. With the overall increase in the scale of public mutual funds' holdings, the country expects the surge of public mutual funds to cause a significant improvement in corporate governance quality. In 2002, the Chinese government and securities market regulator, the China Securities Regulatory Commission (hereafter CSRC) and the National Development and Reform Commission jointly issued the "Guidelines on Corporate Governance of Listed Companies", outlining the importance of institutional investors in board director appointments, incentives, supervision, and significant decision-making.¹⁾ Furthermore, the CSRC added a new chapter "Institutional Investors and Other Related Institutions" to the guideline in September 2018, aiming to encourage institutional investors' active engagement in corporate governance through the lawful exercise of voting and other shareholder rights.²⁾ Yuan et al. (2009) indicate that the average mutual fund ownership in China was only 0.52 % in 2003. However, our sample suggests the average mutual fund ownership increased to 4.46% during the period from 2011 to 2019.

Previous studies find that Chinese mutual funds play a positive role in increasing firm value. Drawing from a sample of 5,314 firm-year observations spanning from 2001 to 2005, Yuan et al. (2008) establish a significant and positive relationship between the ownership level of mutual funds and subsequent Tobin's Q and operating profit ratios. Using data from 2003 to 2011, Firth et al. (2016) also observes a positive impact of equity ownership by mutual funds on firm performance, as assessed by Tobin's Q and the return on assets. These findings support the notion that mutual funds possess both the incentive and capability to actively engage in corporate governance by using direct monitoring. Their practice of aggregating minority holdings and monitoring their management has been beneficial to the industry in China.

This paper investigates whether mutual funds in China promote corporate investments. The standard theory suggests that mature firms should conduct large payouts to prevent the management from disgoring free cash flow in negative-NPV projects (Jensen, 1986). Previous US

1) See Article 11 of the "Guidelines on Corporate Governance of Listed Companies" from the government official website: https://www.gov.cn/gongbao/content/2003/content_62538.html

2) See chapter 7 of the revised "Guidelines on Corporate Governance of Listed Companies" from https://www.gov.cn/gongbao/content/2019/content_5363087.html

studies suggest that institutional investors prefer firms conducting large payouts, showing that institutions have concerns about overinvestments by empire-building managers. (Eckbo et al., 1994; Brush et al., 2000; Short et al., 2002; Ferrria et al., 2008; Crane et al., 2016; Firth et al., 2016) Under the significant economic growth in the last decades, however, Chinese mutual funds may take different approaches to corporate governance. The conventional financial theory suggests that firms with rich growth opportunities should retain a significant portion of their earnings, rather than pay them out to shareholders, to internally finance their projects. This idea gives rise to the prediction that Chinese institutional investors prefer growing firms, providing large capital gains, rather than making large dividend payouts. Indeed, we find that Chinese mutual funds exhibit a preference for companies with high Tobin's Q, large capital expenditures, and high sales growth. Their investments in growing firms enable these companies to conduct large investments, increasing the availability of external financing. After controlling for mutual funds' preference, we observe a positive relationship between the level of mutual fund ownership and a company's capital expenditures and sales growth rate in the following year. Meanwhile, mutual funds do not significantly impact firms' dividend payouts, and we find some evidence that their ownership is positively related to firms' cash holdings. These results suggest that mutual funds actively encourage firms to seize growth opportunities. The firms pursued these goals without causing overinvestment problems. Indeed, we find a significantly positive relationship between mutual fund ownership and firm performance. In contrast, such an effect is not evident for financial companies that operate as a financial intermediary in a corporate group.

This paper contributes to the literature on institutional investors by showing their preference for high-growth companies and their positive impacts on corporate growth. The results sharply contrast with the results of previous US studies which purport the benefits of institutional investors taking measures (e.g., large payouts) to restrain companies from conducting overinvestments. (Eckbo et al., 1994; Brush et al., 2000; Short et al., 2002; Ferrria et al., 2008; Crane et al., 2016; Firth et al., 2016) A closely related paper to ours is Fung and Tsai (2012). Using a sample of 14,055 firm-year observations from U.S. listed firms from 1997 to 2006, Fung et al. (2012) find that institutional ownership increases the positive relationship between capital expenditures and firm performance. Using the Chinese dataset, this research finds that institutional shareholders' willingness to promotes growth by increasing capital expenditure. This research also finds that institutional ownership is positively related to sales growth rate.

Several Chinese studies argue that mutual funds may collude with large shareholders in specific situations rather than safeguard the interests of minority shareholders. (Ding et al., 2016; Firth et al., 2010; Chizema et al., 2020). Moreover, opinions and recommendations made by mutual funds with lower ownership levels are more likely to be overlooked during decision-making processes. (Yuan et al., 2009). Our findings suggest that Chinese mutual funds do not promote large dividend payouts,

but this strategy does not harm firm value. Rather, Chinese mutual funds contribute to value creation by enhancing investment decisions.

The rest of the paper is structured as follows: Section 2 discusses the literature and develops the hypotheses; Section 3 presents the data and descriptive statistics; Section 4 presents the main empirical results; Section 5 provides additional analysis; finally, the summary and conclusions are described in Section 6.

2. Literature review and hypothesis development

2.1 *Previous studies on corporate governance and free cash flow*

How firms should distribute their cash has been discussed extensively in previous literature. The free cash flow theory (Black, 1976; Jensen, 1986) argues that managers tend to allocate free cash flow in negative-NPV projects despite the fact that it harms shareholders' interests. To prevent overinvestment and limit managers' empire-building tendency, shareholders push companies to pay substantial and consistent dividends. (Easterbrook, 1984; Jensen, 1986) Higher dividends also force firms to go to the capital market for new outside funds and thus strengthen the effectiveness of monitoring, which lowers agency costs. La Porta et. al. (2000) find that firms in common law countries make higher dividends than those in civil law countries, suggesting that minority shareholders use their legal rights to protect their wealth. In addition, regular dividends serve as a signal to the market about a firm's undervaluation, caused by information asymmetries between firms and outside shareholders. (Bhattacharya, 1979; Miller et al., 1985)

While high dividends can alleviate agency problems caused by information asymmetry between shareholders and management, it can increase firms' external financing costs in the future. (Rozeff, 1982) The pecking order theory (Rozeff, 1982, Myers, 1984) suggests that firms prefer more accessible internal financing. If high-growing firms do not retain sufficient funds for their investment opportunities, they need to rely on costly external financing which can lead to underinvestment problems. La Porta et al. (2000) find that in common law countries, high-growth firms make significantly lower dividends than mature companies. When firms have opportunities for profitable projects, significant value will be lost if the firm cannot finance them. Using a set of investment opportunity metrics including the market-to-book ratio, R&D expenditure, earnings-to-price ratio, etc., Gaver et al. (1993) find that growth firms have significantly lower debt/equity ratios and dividend yields compared to non-growth firms.

Fama and French (2001) detect that the surge of newly listed small-sized firms with lower profitability and extraordinary investment opportunities leads to the overall decline in dividends of U. S. listed firms. Chae et al. (2009) find that good governance leads to large dividend payments, providing evidence for the outcome model of La Porta et al. (2000) which states that dividends are paid

because minority shareholders pressure corporate insiders to disgorge cash. On the other hand, they find that once financial constraints become binding, firms with good governance pay out less cash. Their results indicate that payout policy is a balancing act, reflecting the relative importance of agency costs versus the costs and availability of external capital. We highlight institutional investors as a key player in corporate governance. Since this research investigates an emerging market that has abundant investment opportunities, we pay significant attention to the role of institutional investors reducing the cost of external financing.

2.2 Previous studies on institutional ownership and free cash flow

Previous studies indicate institutional investments are a sign of good corporate governance and most of them support the view that institutional shareholders reduce agency costs by increasing dividend payouts. Using a simultaneous equation model, Eckbo et al. (1994) find that cash dividend level has a significant positive association with the ownership of institutional shareholders in Canadian firms. They also explain that institutional investors have a tax-induced preference for cash dividends in the Canadian market. Using a sample of 211 U.K. firms from 1988 to 1992, Short et al. (2002) find a positive and significant link between institutional ownership and dividend payout ratio. Using a sample of 1,570 firm-year observations from 1988 to 1995 in the U.S. market, Brush et al. (2000) find that free cash flow weakens the positive influence of sales growth on firm performance because managers may spend the excess cash in negative-NPV projects to further enhance sales even when the growth is not profitable. Importantly, they find that the presence of mutual fund investors reduces the impact of free cash flow on the positive relationship between sales growth and firm performance. They argue that mutual funds prefer dividends over sales-growth investments when the firm encounters severe agency problems as measured by free cash flow. Using an instrumental variable regression, Crane et al. (2016) show that a one-percentage increase in institutional ownership leads to a seven million dollar increase in dividends, which accounts for 8% of the median dividends of Russell 1000 firms.

In terms of curtailing overinvestments, capital expenditure also serves as an important variable for investigation of institutional monitoring. Using a world-wide sample over the 2000-2005 period, Ferreira et al. (2008) find a significant and negative relationship between capital expenditure and ownership by independent institutions (mutual funds and investment advisors). They detect that a 10% increase in the ownership of independent institutions is associated with approximately 2% decrease in capital expenditure relative to the sample mean. Using data of Chinese-listed firms from 2003 to 2011, Firth et al. (2016) find that mutual fund ownership is positively and significantly associated with a firm's dividend payout and the likelihood to pay dividends in the following year. Overall, prior studies support the outcome model of La Porta (2000), indicating that institutional investors, who have the voting power and ability to monitor managers, will push companies to

disgorge cash and alleviate potential agency problems.

The relationship between institutional shareholdings and firm growth has not been examined thoroughly. The conventional agency theory suggests that it is not optimal for growing firms to pay large dividends since external financing is costly. Chae et al. (2009) find that firms facing higher external financing constraints are less inclined to increase payouts, particularly when they have better corporate governance structures. Using a dataset of 11 developed countries, Covrig et al. (2006) find that domestic mutual funds prefer firms with rich growth opportunities, represented by high market-to-book ratios, while also preferring firms that pay large dividends. In contrast, Zou et al. (2016) find that the presence of domestic equity funds is negatively related to Tobin's Q, using the data of Chinese domestic equity funds from 2003 to 2014. They postulated that this phenomenon is caused by Chinese equity funds' tendency to hold stocks that are underpriced.

2.3 Features of Chinese financial markets and hypothesis development

Firms with good governance should align their strategies with their investment opportunities and agency costs. Mutual funds, guided by their fiduciary duty to investors, prefer enterprises that offer high returns, whether from capital gains or dividends. They can identify firms adopting the optimal strategy based on agency costs and investment opportunities. We posit that Chinese institutional investors consider the implementation of profitable projects to be more important than dividend payouts which curtail overinvestments, for several reasons.

First, the Chinese economy has been growing rapidly during the past decades, providing abundant investment opportunities to the corporate sector. From 2009 to 2019, the Chinese average economic growth rate was around 10.86% and some years experienced even over 18% growth (18.25% in year 2010 and 18.4% in year 2011), which is much higher compared to the U.S average economic growth of 1.81% from 2009 to 2019. The number of listed companies in the Shenzhen Stock Exchange and Shanghai Stock Exchange doubled from 1,696 in 2009 to 3,760 in 2019.³⁾ This change is comparable to the Fama and French (2001)'s sample of U.S. listed firms, which grows from 3,638 in 1978 to 5,670 in 1997. They find newly listed firms tend to be small with abundant investment opportunities (measured by high asset growth rates and high market-to-book ratio). Those characteristics contribute to a trend of lower dividend payments. In fast-growing markets like China, mutual funds will incur the risk of missing investment opportunities if they adopt an income-oriented strategy.

Second, information advantages of institutional investors lead them to invest in growing companies. Since new investment decisions are subject to uncertainty and information asymmetry, it is difficult to evaluate growing companies. Mutual funds have specialized roles in gathering information and

3) Data Source from China National Bureau of Statistics of China National Data: <https://data.stats.gov.cn/english/easyquery.htm?cn=C01>

can thus make better investment decisions. While a firm's visibility is important to attract individual and foreign investors, mutual funds can rely on their own information resources and investigations to aid investment choices in growing firms. Unlike the U.S. financial market, the Chinese market is dominated by retail investors. At the end of 2015, over 100 million individuals had trading accounts and retail investors held 88% of all free-floating shares. (Liu et al., 2019) Compared to institutional investors, retail investors are worse at picking out stocks due to the lack of information and analytical skills. This is particularly true in China because of the lack of transparency. Grossman et al. (1980) suggest that investors with more cost-effective information acquisition skills will reap greater benefits from their efforts. Consequently, institutional investors can gain more from pursuing investments in fast growing companies.

Third, dividend income is subject to corporate taxation in China, while capital gains are not. As such, mutual funds are more inclined to invest in growing firms that will realize larger capital gains than tax-burdened dividend payers.

These features of mutual fund investors also affect fund strategies. For example, young investors may adopt aggressive investment strategies while senior investors may prefer income stability. The 2019 annual survey⁴⁾ conducted by the Asset Management Association of China reports that investors aged 45 or younger occupy more than 75% of individual mutual fund holders, while investors aged 60 or older account for only 5.3%. Large differences exist in investors' demographic features between Chinese and US mutual funds. In the U.S.⁵⁾ 22% of investment decisions by households that hold mutual funds are made by someone aged 65 or older and 73% of the households that own mutual funds indicate retirement savings as one of their primary investment goals. This correlates the investor's older demographics with the source of funding for their investment, which indicates a conservative and risk-averse investment strategy suitable for those nearing or past retirement. In contrast, only 22.9% of Chinese mutual fund investors choose the same investment goal, which indicates a younger demographic looking for aggressive-growth and risky investment opportunities. Furthermore, 32.8% of Chinese mutual fund investors indicate "earning higher profits than bank savings" as their primary investment goal. In China, the median income of mutual fund investors is about five times of the national median, suggesting that mutual fund investors belong to the affluent strata in Chinese society. These preferences of individual investors should lead Chinese mutual funds to choose a growth-focused strategy rather than the income-oriented investment.

Previous studies in developed financial markets indicate that mutual funds prefer value stocks.

4) The survey contains effective results from 51,430 individual investors, and 72 institutional investors on mutual funds. Survey results are available on <https://www.amac.org.cn/researchstatistics/report/tzzbg/>.

5) The Annual Mutual Fund Shareholder Tracking Survey conducted by the Investment Company Institute of year 2019 was based on a dual-frame telephone sample of 4,000 U.S. households. Data source: <https://www.ici.org/research/investors/ownership>

For example, Falkenstein (1996) used mutual funds' equity holdings data from 1991 to 1992 to show that US mutual funds prefer firms with higher book-to-market ratios and smaller size, suggesting their preference for value stocks. Although the value premium in the Fama-French framework is detected in the Chinese market (Liu et al., 2019), it is documented that Chinese mutual funds still prefer growing firms (Liao et al., 2020; Huang et al., 2017; Chi et al., 2022). Using a semi-annual dataset of institutional shareholding from 2005 to 2017, Liao et al. (2020) find that ownership of Chinese mutual funds is significantly and negatively related to a firm's book-to-market ratio, different from insurance companies and trust funds that have conservative investment styles. Measuring investment opportunities by the market-to-book ratio, R&D expenditure, and asset growth, Huang et al. (2017) find that growth-style institutional investors have higher holdings in firms with low dividend payouts and high investment opportunities. While value-style institutional investors have higher holdings in firms with high dividend payouts and low investment opportunities, they argue that institutional investors jointly consider investment opportunities, dividend payments and investment style when establishing their preferences. Chi et al. (2022) demonstrate that Chinese mutual funds optimally trade against retail investors over stocks of growing companies to optimize their advantages. They find that portfolios of Chinese stock mutual funds load negatively on the HML factor and outperform the market. Classifying growth and value funds based on the funds' HML factor loadings, they find that growth stocks with higher mutual fund holdings have better stock returns than those stocks with lower mutual fund holdings.

While US mutual fund investors mostly look for stability of investment returns, the above discussions suggest that Chinese institutional investors focus on growth-style investments when three conditions intersect: the entire economy is growing, they have information advantage, and when there is a tax advantage for capital gains. Accordingly, we propose the following hypothesis for Chinese companies:

Hypothesis 1: Growing firms have high mutual fund ownership.

Previous studies posit that dividends serve as a signal of firm value. But the existence of institutional investors could reduce the value of relevance of this signal because of their sophistication and information advantage. Amihud et al. (2006) find that institutional shareholdings are negatively associated with stock price reactions to dividend increases. They also find that firms with greater institutional shareholdings are less likely to raise dividends.

Given the high external financing costs in the Chinese market and the abundant investment opportunities, we hypothesize that firms with substantial institutional shareholdings will prioritize firm growth over dividends. Institutional investors not only favor growing companies in their portfolio but also encourage managers to adopt more aggressive investment strategies, since expanding firm size and seizing growth opportunities are perceived as more beneficial for firm value

in a growing market than distributing cash dividends. When the expected returns from new projects outweigh current dividend payouts, institutional investors prefer to push managers to increase investment rather than pay dividends.

These reasonings leads to the following hypothesize:

Hypothesis 2: Mutual fund ownership is positively correlated to the level of corporate investments.

While there are several types of institutional investors, we focus on mutual funds as the representative of Chinese institutional investors, given their strong influence and importance. Previous studies indicate heterogeneity exists in the impact of institutional investors on corporate governance. Based on the business ties with their investee companies, prior literature classified institutional investors into pressure-insensitive (less business ties) and sensitive ones (more business ties). The pressure-insensitive institutional investors include mutual funds and investment advisors, and the pressure-sensitive (“grey” investors) ones include banks, trusts, pension funds, insurance companies and other institutions. It is documented that firms with higher ownership of pressure-insensitive institutional investors have abnormally high returns (Chen et al., 2007), higher firm valuation (Ferreira et al., 2008), better operating performance (Cornett et al., 2007; Chen et al., 2007; Ferreira et al., 2008), and lower capital expenditure (Ferreira et al., 2008). In contrast, pressure-sensitive institutional investors choose to perform active monitoring to a lesser degree compared to pressure-insensitive ones, to maintain cordial and conflict-free business relations. Brickley et al. (1988) find that mutual funds, endowments, foundations, and public pension funds are more likely to oppose management than other institutional investors, especially when the proposals are related to negative stock returns. Aggarwal et al., (2015) provide evidence that mutual fund ownership is significantly associated with less fraudulent activities in Chinese firms, while such effects are not detected for grey investors or foreign institutional investors. Almazan et al. (2005) regard grey institutions as passive investors and suggest that their relatively longer monitoring horizons compared to mutual funds reduce the information flow from stock liquidity. This increases their monitoring costs of identifying and replacing poor managers. Jory et al. (2014) find pressure-insensitive institutional investors, such as investment companies and independent advisors, do not significantly affect dividend payments. They argue that pressure-insensitive institutional investors directly monitor the management, a value-equivalent substitute to paying out dividends in terms of reducing agency problems. Based on these reasons, we adopt mutual fund ownership as our main measure of institutional ownership.

3. Sample selection and descriptive statistics

Our sample includes all Chinese A-share firms listed in the Shanghai Stock Exchange and Shenzhen Stock Exchange. We collect the corporate ownership data from OSIRIS database supplied by Bureau Van Dijk. The database indicates the shareholder information, including shareholder type, direct and total shareholdings, etc. We determine the percentage ownership of shareholders by using either the direct or total shareholding, since only one of them is recorded for every single shareholder. The database contains 381,203 shareholder-year observations, from 2010 to 2019. We aggregate the ownership by shareholders classified as “Mutual and pension fund, nominee, trust, trustee” for each firm-year to compute the percentage ownership of mutual funds (MF). To examine the effect of mutual funds, we also investigate financial companies as a reference group. Specifically, we aggregate ownership of shareholders labeled as “Financial company, Foundation, and research Institute” (FC). We assign zero to MF and FC when the dataset includes no shareholders in the category. After these procedures, the shareholding dataset contains 30,687 firm-year observations.

We obtain the firms’ financial variables from the China Stock Market & Accounting Research (CSMAR) database, which is a comprehensive research-oriented database focusing on the Chinese financial markets. After correlating the two databases, our sample consists of 20,457 firm-year observations. To mitigate the influence of outliers, all continuous variables are winsorized at the 1st and 99th percentiles by year.

We focus on three main measures of firm growth: annual sales growth rate (SGR), capital expenditure divided by the total asset (CAPEX), and the ratio of total liabilities and market value of equity divided by the book value of total assets (Tobin’s Q). We also control firm characteristics such as company size (natural logarithm of the book value of total assets), leverage (LEV, which is calculated by the total value of debt divided by the book value of assets), profitability (ROA), free cash flow (FCF, which is calculated as the difference between after-tax net profit and capital expenditures, adjusted for the increase in working capital, and then divided by total assets), cash holding over the total assets (CASH and the percentage of shares owned by the largest shareholder. All the definitions of variables are shown in Appendix A.

Table 1 presents the descriptive statistics of the variables used in our analysis. The average mutual fund ownership (MF) is approximately 4.5%. Yuan et al. (2008) indicate that the average mutual fund ownership of their sample Chinese firms is 0.17% - 0.52% during the period from 2001 to 2003. Aggarwal et al. (2015) also suggest that the average ownership of Chinese mutual funds increases from 0.61% in 2001 to 3.94% in 2011. Our data suggest that mutual funds have significantly increased their presence in the Chinese corporate ownership structure over the past decades. One can argue that mutual fund ownership in China is too small to exert influence on corporate

governance. However, the Chinese mutual fund ownership is comparable to that of 48 non-US countries (1.5%) during the period of 2000-2005 reported by Ferreira et al. (2008). Aggarwal et al. (2015) indicate that Chinese mutual funds provide effective monitoring to deter the occurrence of corporate frauds even with relatively small ownership.

Meanwhile, Table 1 indicates a significant divergence between the mean and median MF, suggesting that a significant variation exists in mutual fund ownership. The maximum value of MF is 41.7%, while about 40% of sample companies do not have mutual funds in their large shareholder list. Chinese mutual funds appear to have relatively biased portfolios. It is well-documented that Chinese firms have concentrated ownership structures. Indeed, the average ownership of controlling shareholders in our sample is 34.73%.

Table 2 reports the Pearson correlation coefficients among the variables. Large companies tend to have high mutual fund ownership (MF). Consistent with our hypothesis, mutual fund ownership is

Table 1 Descriptive statistics

Variables	N	Mean	Standard deviation	Minimum	Median	Maximum
MF	45,042	0.04464	0.07612	0	0.0072	0.4172
FC	45,042	0.05494	0.1327	0	0	0.6667
SGR	42,365	0.1946	0.5349	-0.681	0.1107	3.7344
Tobin's Q	44,249	3.0561	1.9516	1.2313	2.4016	12.5067
ROA	46,809	0.0342	0.0779	-0.378	0.0370	0.220
Control	45,918	0.3473	0.1522	0.085	0.3229	0.75
LEV	48,251	0.4526	0.2284	0.0519	0.4404	1.1498
SIZE	48,251	22.0019	1.4821	18.7833	21.8100	26.9732
FCF	42,481	-0.0348	0.1201	-0.5554	-0.0138	0.2427
CASH	48,069	0.1854	0.1411	0.0049	0.1463	0.6940
R&D	48,251	0.0154	0.0195	0	0.00883	0.0975
CAPEX	46,673	0.0495	0.0495	0.000139	0.0341	0.2378
DIV	39,856	0.0147	0.0192	0	0.00824	0.1087

This table lists descriptive statistics of the variables used in this study. MF is the percentage ownership by mutual funds. SGR is the sales growth rate. Tobin's Q is the ratio of total liabilities and market value of equity divided by the book value of total assets. ROA is the return on assets, calculated as earnings before interest and tax, divided by the average amount of year-end and year-beginning values of total assets. Control is the percentage of shares owned by the largest shareholder. LEV is leverage, calculated as the total value of debt divided by the book value of assets. SIZE is company size, calculated by the logarithm of the book value of total assets. CASH is cash holding over the total assets. CAPEX is capital expenditure divided by the total assets. DIV is the cash dividend payment divided by the total assets. FCF is the free cash flow calculated by *(after-tax net profit-capital expenditure-the increase of working capital)/total asset*. FC is the percentage ownership of financial companies.

Table 2 Pearson correlation matrix

	MF	FC	CAPEX	SGR	Tobin's Q	CASH	DIV	ROA	Control	LEV	SIZE	FCF
MF	1											
FC	0.028***	1										
CAPEX	0.0802***	-0.0234***	1									
SGR	0.0608***	0.0053	0.0474***	1								
Tobin's Q	-0.0047***	-0.031**	0.0223***	0.0885***	1							
CASH	0.0089	-0.0481***	-0.053	0.0178***	0.2006***	1						
DIV	0.019***	-0.0045	0.0893***	-0.0135**	0.1987***	0.2683***	1					
ROA	0.0857***	-0.008***	0.1561***	0.2024***	0.1026**	0.2454***	0.6024***	1				
Control	-0.0564***	0.1129***	0.0704***	0.027***	-0.0808***	0.0254***	0.1443***	0.1501***	1			
LEV	0.052***	0.075***	-0.118***	0.019***	-0.161***	-0.383***	-0.395***	-0.402***	0.002	1		
SIZE	0.168***	0.128***	-0.054***	0.033***	-0.4***	-0.184***	-0.07***	-0.003	0.154***	0.367***	1	
FCF	-0.023***	0.004	-0.151***	-0.033***	-0.055***	-0.05***	0.141***	0.271***	0.075***	-0.07***	0.064***	1

This table reports the Pearson correlation matrix of the main variables used in the study. All variables are defined in Appendix A. **, * and *** respectively indicate the 10%, 5%, and 1% significance levels.

positively correlated with capital expenditures (CAPEX). High MF firms also tend to pay large dividend payouts and show high operating performance (ROA, and sales growth) and leverage. However, we need to control various firm characteristics to examine the effect of MF on these growth and performance variables. No serious correlations are detected among the other variables.

4. Empirical results

4.1 *Do mutual funds prefer growing firms?*

We perform multivariate regressions to test Hypothesis 1 that growing firms have high mutual fund ownership. We adopt a one year-lead variable for the dependent variable (MF). Table 3 presents the regression results, where odd models adopt the ordinary least squares (OLS) estimation and mean models use the firm-fixed effects model. Columns (1) and (2) use Tobin's Q as a growth measure, which is a common proxy for future growth opportunities in the finance literature (Fazzari et al., 1988; Hoshi et al., 1990). Consistent with previous Chinese findings (Covring, 2006; Du et al., 2018; Guo et al., 2019), these models carry a positive and significant coefficient on Tobin's Q, while the result shows a sharp contrast to the US finding by Falkenstein (1996) and Ferreira et al. (2008). The firm-fixed effects model (Column (2)) shows that one standard deviation increase in Tobin's Q will increase the mutual fund ownership by 0.0078 ($=0.004 \times 1.9516$), which is around 17 percent of the average mutual fund ownership.

It is well-known that Tobin's Q is ambiguous about various aspects of companies including managerial talent, operational efficiency, overvaluation, and so on. To accurately examine whether Chinese mutual funds invest in growing companies, Models (3) – (6) investigate variables for realized growth. Columns (3) and (4) adopt CAPEX and offer a positive and significant coefficient on the variable. The estimated coefficient in Column (4) (0.058) indicates that one standard deviation increase in CAPEX increases the mutual fund ownership by 0.287% ($= 0.0495 \times 0.058$), which amounts to 6.4 percent of the average MF. Columns (5) and (6) use the sales growth rate (SGR) as a firm's growth measure. The coefficients of SGR are also positive and significant, and the firm-fixed effects model suggests that the mutual fund ownership is brought up by about 0.161% ($=0.003 \times 0.535$) as SGR increases by one standard deviation. This is consistent with the results of Guo et al. (2019), which show that Chinese independent institutional shareholders are attracted by firms with high growth opportunities. Finally, Columns (7) and (8) include these growth measures simultaneously. The coefficients of proxy variables for the firm growth still have positive and significant coefficients. Consistent with Hypothesis 1, this set of results clearly indicates that mutual funds prefer to invest in firms with higher growth rates.

The conventional agency theory suggests that large cash holdings cause overinvestments. Especially in China, corporate ownership structures are highly concentrated and large cash holdings

Table 3 Regression results of mutual fund ownership

VARIABLES	(1) OLS	(2) FE	(3) OLS	(4) FE	(5) OLS	(6) FE	(7) OLS	(8) FE
Tobin's Q	0.003*** (5.99)	0.004*** (7.10)					0.004*** (6.39)	0.005*** (7.37)
CAPEX			0.133*** (7.61)	0.058*** (3.43)			0.136*** (7.18)	0.041** (2.25)
SGR					0.003*** (2.81)	0.003*** (2.83)	0.003** (2.23)	0.002** (2.01)
SIZE	0.014*** (12.04)	0.009*** (4.39)	0.011*** (12.15)	0.005*** (2.90)	0.011*** (10.60)	0.003* (1.65)	0.014*** (11.26)	0.009*** (4.02)
LEV	0.012** (2.07)	0.009 (1.25)	0.013*** (2.62)	0.005 (0.72)	0.011** (1.96)	0.003 (0.43)	0.012** (2.09)	0.006 (0.76)
CASH	0.003 (0.50)	-0.010 (-1.42)	0.011* (1.74)	-0.007 (-1.08)	0.019** (2.49)	0.007 (0.86)	0.021*** (2.87)	0.008 (0.99)
ROA	0.172*** (11.22)	0.088*** (6.63)	0.151*** (10.38)	0.074*** (6.18)	0.174*** (11.05)	0.078*** (5.88)	0.165*** (10.25)	0.077*** (5.58)
CONTROL	-0.051*** (-7.56)	-0.040*** (-2.96)	-0.050*** (-7.65)	-0.042*** (-3.39)	-0.047*** (-6.68)	-0.034** (-2.57)	-0.050*** (-7.15)	-0.040*** (-2.98)
Constant	-0.219*** (-8.67)	-0.122*** (-2.64)	-0.162*** (-8.26)	-0.015 (-0.41)	-0.141*** (-6.63)	0.026 (0.62)	-0.227*** (-8.58)	-0.116** (-2.37)
Observations	20,264	20,264	21,311	21,315	19,441	19,444	18,716	18,716
R-squared	0.071	0.031	0.068	0.023	0.065	0.028	0.079	0.037
Industry FE	Yes	No	Yes	No	Yes	No	Yes	No
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	No	Yes	No	Yes	No	Yes	No	Yes
Number of firms		3,283		3,317		2,920		2,915

This table contains the panel regressions results of mutual fund ownership (MF). The main explanatory variable is firm growth, measured by Tobin's Q, capital expenditure ratio (CAPEX), and sales growth rate (SGR). Columns (1) and (2) report the effect of Tobin's Q using OLS and fixed-effect-model specifications. Columns (3) and (4) report the effects of CAPEX. Columns (5) and (6) report the effects of SGR. Columns (7) and (8) include Tobin's Q, CAPEX, and SGR simultaneously. All the independent variables and control variables are lagged by one year. Industry-specific and year-specific fixed effects are included in OLS regressions. Year and firm fixed effects are controlled in the fixed effect specifications (FE). All variables are defined in Appendix A. T-statistics, computed by using robust standard errors, are reported in parentheses. Significance at 1%, 5% and 10% level are indicated by ***, ** and * respectively.

provide controlling shareholders with an opportunity to pursue private benefits. While these ideas suggest that mutual funds do not prefer firms with large cash holdings, some estimations find a positive and significant relationship between CASH and mutual fund ownership. Although the

results are mixed, Chinese mutual funds may be tolerant of large cash holdings that allow firms to timely invest in profitable projects. With respect to the other control variables, large firms have high mutual fund ownership, consistent with previous studies (Falkenstein, 1996; Dahlquist et al., 2001; Pinnuck, 2004; Lin et al., 2004; Ferreira et al., 2008; Jun et al., 2011; Du et al., 2018; Liao et al., 2020; Nguyen et al., 2020). Profitable (high ROA) firms also attract mutual fund ownership, consistent with previous studies (Guo et al., 2019). Leverage has a significant positive correlation to the mutual fund ownership in OLS estimations, consistent with previous studies (Guo et al., 2019). A potential interpretation is that mutual funds tend to invest in highly leveraged firms that provide tax benefits. It is worth noting that mutual fund ownership is negatively associated with the controlling shareholder ownership. It is consistent with the finding of previous studies (Dahlquist et al., 2001; Lin et al., 2004; Liao et al., 2020). For example, Dahlquist et al., (2001) find that both foreign and domestic institutional investors in Sweden tend to undervalue firms with a concentrated structure. It is common for Chinese listed companies to have the government or its agency as their controlling shareholder. Those state-owned companies pursue certain political purposes such as providing basic supplies for the public, stabilizing employment, and facilitating the construction of infrastructure. Inferior bargaining power and adverse political pressure lead mutual funds to invest less in firms with a high percentage of state-owned shares. (Lin et al., 2004) Mutual funds may also avoid holding shares of companies with powerful controlling shareholders, which potentially cause expropriation problems.

4.2 *Do mutual funds enhance corporate growth?*

In this section, we investigate Hypothesis 2 that mutual funds promote firms' growth. To test this view, we conduct regressions of CAPEX and SGR (one-year lead variables are adopted for the dependent variable). Table 4 shows the regression results. We adopt OLS and firm-fixed effects models. Since the literature on corporate investments (Fazzari et al., 1988; Hoshi et al., 1990) generally finds a positive relationship between the investments and cash flow, CAPEX regressions replace ROA by the free cash flow over assets (FCF). Free cash flow is computed by the net income minus capital expenditures and the increase of working capital.

All estimations of Table 4 provide a significant positive coefficient to the mutual fund ownership, suggesting that firms with high mutual fund ownership conduct large investments and achieve high sales growth in the subsequent year. This effect is also economically sizable. Since the distribution of mutual funds is skewed, we compute the marginal effect when the mutual fund ownership increases from zero to 0.72 (from the 25th percentile value to the median). The fixed effects model estimation (Column 3) indicates the increase in mutual fund ownership increases CAPEX by 0.0158 ($=0.022 \times 0.72$), amounting to almost 32 percent of the average CAPEX (0.0495). Regarding the sales growth rate, the same change in mutual fund ownership leads to an increase by 0.246 ($=0.347 \times 0.72$),

which represents approximately 126% of the mean value (0.195). This evidence is consistent with our view that mutual funds boost corporate investments and growth. While previous US studies emphasize that institutional investors take measures to restrain companies from conducting overinvestments (Eckbo et al., 1994; Brush et al., 2000; Short et al., 2002; Ferrria et al., 2008; Crane et al., 2016; Firth et al., 2016), these findings suggest that Chinese institutions promote corporate growth.

With respect to control variables, the coefficient for SIZE is significant and positive in the regressions of CAPEX but significant and negative in the regressions of SGR. The coefficients of SIZE are significant and positive in the regressions of CAPEX but significant and negative in the regressions of SGR, which indicates that while large firms invest more than small companies, large firms increase sales more slowly. The coefficients of leverage are significant and negative in the regressions of CAPEX, which shows that leverage constraints a firm's investments. But the coefficients of leverage are significant and positive in the regressions of SGR which shows leveraged firms tend to show high sales growth. Unlike previous studies, CAPEX regressions offer significant negative coefficients on FCF. SGR regressions do not show significant coefficients on FCF. Consistent with previous studies (Guo et al., 2019), the firm-fixed effects model carries a positive and significant coefficient on Tobin's Q. Furthermore, Tobin's Q is positively related to SGR. Finally, controlling shareholder ownership is positively associated with CAPEX, but we do not find a clear effect on firm sales growth.

To further examine the relationship between mutual fund ownership, free cash flow and firm growth, we include the interaction terms of MF and FCF in our models. The coefficients for the interaction terms of MF and FCF are significant and negative for both OLS and fixed effect estimations, suggesting that mutual funds do not promote capital expenditure when the firm has abundant cash flow. This result is consistent with our view that institutional investors contribute to a firm's growth through easing external financing.

One can argue that various firm characteristics are associated with our growth variables as well as with mutual fund ownership. To reduce such concerns, we employ a propensity score to compare the growth of companies that are similar in various characteristics but differ in their level of mutual fund ownership. We define firm-year observations in the treatment group (denoted by High MF) as those with MF ranging from its 55th to 95th percentiles. We also label firm-years falling into the range from 0th to 50th percentiles as Low MF. We conduct a Probit regression of the binary variable that takes a value of one for High MF and zero for Low MF. The covariates include the natural logarithm of total assets, leverage, sales growth ratio, ROA, dividends over assets, Tobin's Q, and controlling shareholder ownership (one-year lagged variables are used). We then use the estimated propensity score to perform a matching in which the nearest Low MF firm is assigned as a control firm to every treatment (High MF) firm (caliper is 0.001). After this matching, the F-test does not show significant joint difference for the covariates.

Table 4 Regression of capital expenditures and sales growth

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	CAPEX				SGR			
	OLS		FE		OLS		FE	
MF	0.050*** (8.23)	0.048*** (7.97)	0.022*** (3.95)	0.020*** (3.74)	0.233*** (4.87)	0.208*** (4.25)	0.347*** (5.18)	0.336*** (5.02)
MF*FCF		-0.058*** (-2.92)		-0.041** (-2.51)		-0.669 (-1.38)		-0.316 (-0.83)
SIZE	0.002*** (3.29)	0.002*** (3.27)	0.002** (2.08)	0.002** (2.08)	-0.020*** (-4.74)	-0.021*** (-4.78)	-0.211*** (-13.15)	-0.211*** (-13.14)
LEV	-0.024*** (-8.61)	-0.024*** (-8.60)	-0.028*** (-7.17)	-0.028*** (-7.13)	0.074** (2.49)	0.075** (2.52)	0.136** (2.13)	0.138** (2.16)
FCF	-0.050*** (-14.67)	-0.046*** (-12.30)	-0.010*** (-3.43)	-0.006** (-2.16)	-0.031 (-0.76)	0.021 (0.38)	0.021 (0.47)	0.046 (0.84)
CASH	-0.000 (-0.05)	-0.000 (-0.10)	0.045*** (10.52)	0.045*** (10.46)	-0.007 (-0.20)	-0.009 (-0.26)	0.126** (2.12)	0.124** (2.09)
Tobin's Q	0.001*** (3.04)	0.001*** (2.99)	0.001*** (3.61)	0.001*** (3.55)	0.046*** (11.11)	0.045*** (11.13)	0.035*** (6.93)	0.035*** (6.93)
Control	0.008** (2.13)	0.008** (2.15)	0.023*** (3.21)	0.023*** (3.28)	-0.010 (-0.40)	-0.009 (-0.35)	-0.119 (-1.38)	-0.115 (-1.33)
Constant	0.027** (1.98)	0.028** (2.02)	0.006 (0.25)	0.006 (0.24)	0.433*** (4.77)	0.439*** (4.85)	4.611*** (13.11)	4.609*** (13.10)
Observations	20,456	20,456	20,456	20,456	20,445	20,445	20,445	20,445
R-squared	0.136	0.136	0.119	0.120	0.049	0.050	0.067	0.067
Industry FE	Yes	Yes	No	No	Yes	Yes	No	No
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	No	No	Yes	Yes	No	No	Yes	Yes
Number of firms			3,268	3,268			3,262	3,262

This table contains the panel regressions results of firm growth variables. Firm growth is measured by the capital expenditure divided by total assets (CAPEX) and sales growth rate (SGR). Columns (1) to (4) report regression results using CAPEX as a dependent variable. Columns (5) to (8) report regression results using SGR as a dependent variable. The first two models of each dependent variable adopt OLS, followed by fixed effects model estimations (FE). All the independent variables and control variables are lagged by one year. Industry-specific and year-specific fixed effects are included in all OLS regressions. Year-specific and firm-specific fixed effects are included in all fixed-effect specifications. Variable definitions are provided in Appendix A. All continuous variables are winsorized at the 1st and 99th percentiles. T-statistics, computed by using robust standard errors, are reported in parentheses. Significance at 1%, 5% and 10% level are indicated by ***, ** and * respectively.

Table 5 reports the propensity score matching results. Panel A suggests that High MF firms spend significantly more on capital expenditures than the control group using one-year lead variables as outcome variables. High MF firms also show a larger sales growth than the control company.

Panel B shows the difference in the average CAPEX and SGR from year $t+1$ to year $t+3$. This analysis also suggests firms with higher mutual fund ownership are associated with higher capital expenditure in the subsequent years, while we do not find a significant difference in the average sales growth. Combined with the regression findings, these results support Hypothesis 2, which proposes that mutual funds promote firm growth, particularly investments.

Previous studies show that institutional investors are heterogeneous. Chen et al. (2007) find that only concentrated holdings by independent long-term institutional investors are positively related to post-merger performance. To examine whether this pattern is unique to mutual funds with fiduciary duties to numerous investors, we repeat the same analysis for a different type of institutional investors. Financial companies in the Osiris database generally serve as financial intermediaries in the corporate group or for the government. For example, CASIN Real Estate Development Co. Ltd. has its financial company, Chongqing Caixin Real Estate Development Co. Ltd., as its largest shareholder. According to its annual report in 2017, the financial company held 59.65% shares of CASIN Real Estate Development. The financial company is fully controlled by another group corporation, which a few individuals control. This pyramidal structure, in which the financial company serves as a financial intermediary, allows these individuals to effectively control group firms including CASIN Real Estate Development.

Chongqing Yukaifa Co. Ltd. (stock ID: 000514) also has a financial company, Chongqing City Construction Investment (Group) Co. Ltd., as its largest shareholder. According to the annual report of Chongqing Yukaifa in 2014⁶⁾, 63.09% of its shares were owned by the financial company, which the government of Chongqing city fully controls. Since the government cannot directly raise funds from the financial market, the financial company finances regional infrastructure investments on behalf of the government. As shown in these two examples, financial companies make investments in the interests of specific investors and organizations. Their behaviors should be susceptible to the asset owner's preference and this attribute should differentiate their behaviors from those of mutual funds.

Using CAPEX and SGR in year $t+1$ and average CAPEX and SGR from year $t+1$ to year $t+3$ as outcome variables, Panel C and Panel D of Table 5 compare the capital expenditures and sales growth between firms that are heavily owned by financial companies (firms with the financial company's ownership ranging from its 55th to 95th percentiles, as denoted by High FC) and their control firms (firms with the financial company's ownership at or lower than median, as denoted by Low FC). The control firms are each paired to a High FC company by selecting the company with the nearest propensity score from within the Low FC group, creating a pair with similar propensity score from both groups. We also conducted the selecting process both without replacement and with

6) The annual reports are disclosed on the official website of Shenzhen Stock Exchange. <https://www.szse.cn/disclosure/listed/fixed/index.html>

replacement for observations from the control group. The resulting analysis shows that CAPEX in year $t+1$ of the treatment group is significantly higher than that of the control group, within 5% significance level when pairing with replacement. But there is no significant difference between treatment group and control group in terms of CAPEX in year $t+1$ when pairing without replacement. Also, the average CAPEX from year $t+1$ to year $t+3$ is not significantly different between companies with a high financial company presence and their matching firms. For SGR, the results indicate no significant differences between the treatment and control groups regardless of the investigation period and pairing methods. The growth promotion effect is particularly pronounced for mutual funds.

5. Additional analysis

Numerous studies examine the relationship between institutional ownership and corporate behaviors. Although previous US studies generally argue institutional investors promote financial measures to curtail overinvestments (Eckbo et al., 1994; Brush et al., 2000; Short et al., 2002; Ferreira et al., 2008; Crane et al., 2016), Chinese mutual funds prefer growing firms and actively promote their growth. This characteristic may produce different dynamics in the relationship between mutual fund ownership and corporate financial policies. To test this idea, we perform regressions of dividends. Previous studies suggest that dividend payouts are positively associated with institutional and mutual fund ownerships (Eckbo et al., 1994; Short et al., 2002; Ferreira et al., 2008; Crane et al., 2016). Firth et al. (2016) find that mutual funds promote corporate dividend payouts in China. In contrast, our fixed-effects model estimation (column (2) of Table 6) does not show that the level of dividend payouts has a significant relationship with mutual fund ownership, although the coefficient of mutual fund ownership is significant and positive in the OLS model as shown in the column (1). Those results are similar to the empirical finding on US companies by Grinstein and Michaely (2005). They find that higher institutional shareholding does not lead to increase in dividends and repurchases, while institutional investors tend to invest in dividend-paying firms and firms that conduct repurchases. A potential reason why our finding differs from the Firth et al.'s (2016) is that they examine an earlier period than our analysis. While Firth et al. (2016) investigate the period from 2003 to 2011, Chinese mutual funds significantly increased assets under their management after their sample period. In the surge of the mutual fund industry, mutual funds are likely to shift their strategy to focus on growth.

Since excess cash holdings often cause wasteful investments (Jensen, 1986), mutual funds should promote investee firms to have low levels of cash holdings (Eckbo and Verma, 1994; Short et al., 2002; Ferreira et al., 2008; Firth et al., 2016; Crane et al., 2016). This is particularly important in China, where large cash holdings provide controlling shareholders with an opportunity to obtain exclusive

Table 5 Mutual fund ownership and firm growth: Propensity score matching analysis

Panel A: Differences in firm growth between the group with high mutual fund ownership and its control group (using CAPEX and SGR in year t+1 as outcome variables)									
Without replacement					With replacement				
Variables	Treat	Control	Mean difference	t-stat	Variables	Treat	Control	Mean difference	t-stat
CAPEX_ahead	0.047	0.040	0.0074	7.90***	CAPEX_ahead	0.048	0.040	0.0085	7.58***
SGR_ahead	0.163	0.129	0.0337	3.34***	SGR_ahead	0.154	0.128	0.0123	2.14**
Panel B: Differences in firm growth between the group with high mutual fund shareholding and its control group (using the average CAPEX and SGR from year t+1 to year t+3 as outcome variables)									
Without replacement					With replacement				
Variables	Treat	Control	Mean difference	t-stat	Variables	Treat	Control	Mean difference	t-stat
CAPEX_avg	0.0445	0.0385	0.0062	7.25***	CAPEX_avg	0.0448	0.0388	0.0057	5.64***
SGR_avg	0.1608	0.1525	0.0083	1.20	SGR_avg	0.1492	0.1454	0.0038	0.45
Panel C: Differences in firm growth between the group with high financial company ownership (High FC) and its control group (Low FC) (using CAPEX and SGR in year t+1 as outcome variables)									
Without replacement					With replacement				
Variables	Treat	Control	Mean difference	t-stat	Variables	Treat	Control	Mean difference	t-stat
CAPEX_ahead	0.0434	0.0422	0.0013	1.48	CAPEX_ahead	0.0431	0.0409	0.0022	2.14**
SGR_ahead	0.1591	0.1465	0.0126	1.23	SGR_ahead	0.1557	0.1451	0.0106	0.87
Panel D: Differences in firm growth between the group with high financial company ownership and its control group (using the average CAPEX and SGR from year t+1 to year t+3 as outcome variables)									
Without replacement					With replacement				
Variables	Treat	Control	Mean difference	t-stat	Variables	Treat	Control	Mean difference	t-stat
CAPEX_avg	0.0407	0.0402	0.0005	0.63	CAPEX_avg	0.0403	0.0392	0.0012	1.22
SGR_avg	0.1713	0.1626	0.0086	1.24	SGR_avg	0.1695	0.1641	0.0083	0.65

Panels A and B of this table present the average treatment effects of the mutual fund ownership on capital expenditure (CAPEX) and sales growth rate (SGR). Propensity score matching is used to select a matching sample for each firm-year observation in the treatment groups. We first conduct a probit regression of a binary dummy variable, where a value of 1 is used for firm-year observations with mutual fund ownership ranging from its 55th to 95th percentiles, and a value of 0 is used for firms with mutual fund ownership in the range from zero to 50th percentile. We conduct the nearest matching process with a caliper of 0.01 to find a matching firm. Panel A adopts a one-year lead variable of capital expenditure and sales growth rate as the outcome variables, while Panel B uses the average of capital expenditure and sales growth ratio for the period between year t+1 and t+3. Panels C and D present the average treatment effects of the financial company's ownership on capital expenditure (CAPEX) and sales growth rate (SGR) using the same method. T statistics are for the mean difference test of the outcome variable between the treated and control groups. Significance at 1%, 5% and 10% level are indicated by ***, ** and * respectively.

benefits at the expense of minority shareholders. Yuan et al. (2008) suggest that the main agency problem in China is the conflict between controlling and minority shareholders. However, our hypothesis proposes a different relationship between mutual fund ownership and cash holdings, since large cash holdings allow managers to make timely investment decisions. Indeed, the column (3) and (4) of Table 7 reveal a significantly positive relation between the company's cash holdings and mutual fund ownership.

The growth promotion strategy of mutual funds can damage a firm's performance if CEOs are allowed to undertake unprofitable projects. Columns (5) – (8) of Table 7 present regression results of a firm's performance to test this assumption. If the mutual funds' strategy aggravates overinvestments, we should find a negative relationship between the mutual fund ownership and firm performance. Models (5) and (6) adopt ROA as a performance measure and offer a positive and significant coefficient on MF. This result is consistent with previous US findings (Cornett et al, 2007; Ferreira et al., 2008), while the overinvestment view is not supported. Furthermore, Models (7) and (8) show a significant positive relationship between Tobin's Q and mutual fund ownership. This result is also consistent with previous findings about the impact of mutual fund ownership on Tobin's Q (McConnell et al, 1990; Ferreira et al., 2008; Yuan et al., 2008; Firth et al., 2016; Zou et al., 2016; Guo et al., 2019) and suggest that the growth promotion strategy of Chinese mutual funds contributes to value creation.

In order to mitigate the selection problems caused by unobserved firm characteristics, we also employ a propensity score matching analysis using DIV, CASH, ROA and Tobin's Q as outcome variables. As with the former analysis, we define the treatment group as firm-year observations with MF ranging from the 55th to 95th percentiles and the control group as firm-year observations with MF at 50th percentile and lower. Table 7 reports the average treatment effect. Panel A shows the results when using the one-year lead variable for outcome variables, and Panel B shows the results when using the average from year $t+1$ to year $t+3$. Consistent with the regression results, we do not find robust evidence that firms with higher mutual fund ownership pay more dividends. The level of cash holdings does not significantly differ between the treatment and control groups. Different from previous studies, our finding suggests that Chinese mutual funds do not drive firms to curtail free cash flow.

The propensity score matching analysis also suggests that firms with high mutual fund ownership have high ROA. Although there is no difference in Tobin's Q at the 5% significance level, we find no evidence that the growth promotion strategy of mutual funds leads to performance deterioration. Rather, their ownership is positively associated with the firm's operating performance.

Table 6 Regressions of dividends, cash holdings, and performance

	DIV		CASH		ROA		Tobin's Q	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	OLS	FE	OLS	FE	OLS	FE	OLS	FE
MF	0.008*** (3.51)	0.001 (0.80)	0.023*** (3.03)	0.027*** (2.84)	0.062*** (7.78)	0.029*** (3.50)	0.186* (1.91)	0.630*** (5.02)
SIZE	0.003*** (9.69)	-0.000 (-0.63)	-0.002*** (-3.24)	-0.016*** (-8.31)	0.011*** (13.40)	-0.009*** (-4.45)	-0.211*** (-15.66)	-0.487*** (-14.48)
LEV	-0.029*** (-23.20)	-0.011*** (-9.58)	0.012*** (3.07)	0.014* (1.83)	-0.085*** (-18.33)	-0.012 (-1.34)	0.253*** (3.28)	0.573*** (4.42)
CASH	0.018*** (9.26)	0.013*** (8.04)	0.700*** (85.74)	0.451*** (40.85)	0.065*** (11.50)	0.068*** (9.47)	0.638*** (7.15)	0.551*** (4.24)
FCF	0.018*** (13.24)	0.003*** (4.03)	0.038*** (6.06)	0.002 (0.32)	0.060*** (10.66)	0.005 (0.83)	-0.043 (-0.50)	-0.083 (-0.95)
Tobin's Q	0.002*** (9.06)	0.001*** (4.04)	0.003*** (4.86)	0.002** (2.30)	0.007*** (10.55)	0.006*** (8.49)	0.663*** (51.98)	0.329*** (26.16)
SGR	0.0007 (0.30)	0.001*** (5.35)	-0.002 (-1.26)	0.003** (2.03)	0.011*** (8.59)	0.012*** (8.74)	0.030 (1.50)	0.066*** (3.20)
Control	0.015*** (8.44)	0.011*** (4.37)	0.013*** (3.16)	0.019 (1.61)	0.047*** (10.05)	0.046*** (3.45)	0.036 (0.65)	0.436*** (2.74)
Constant	-0.055*** (-7.41)	0.015** (1.97)	0.071*** (4.48)	0.419*** (9.81)	-0.213*** (-11.97)	0.192*** (4.32)	4.266*** (14.52)	10.998*** (15.46)
Observations	18,021	18,021	20,440	20,440	20,440	20,440	19,880	19,880
R-squared	0.219	0.044	0.608	0.288	0.151	0.078	0.666	0.415
Industry FE	Yes	No	Yes	No	Yes	No	Yes	No
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	No	Yes	No	Yes	No	Yes	No	Yes

This table presents results of panel regressions of dividends (columns (1) and (2)), cash holdings (columns (3) and (4)), ROA (columns (5) and (6)), and Tobin's Q (columns (7) and (8)). All independent variables are lagged by one year. Industry-specific and year-specific fixed effects are included in OLS regressions. Year and firm fixed effects are included in fixed-effect specifications. All variables are defined in Appendix A. T-statistics, computed by using robust standard errors, are reported in parentheses. Significance at 1%, 5% and 10% level are indicated by ***, ** and * respectively.

6. Conclusions

Previous literature has extensively investigated the positive impact of mutual funds on corporate governance. For instance, Yuan et al. (2008) find that mutual fund ownership can enhance firm value. This research investigates whether mutual fund ownership fosters or impedes firm growth and finds that Chinese mutual funds both prefer companies with growth potential and promote firm

growth. While previous US findings suggest that institutional investors promote financial measures (e.g., payouts) that reduce overinvestments (Eckbo et al., 1994; Brush et al., 2000; Short et al., 2002; Ferrria et al., 2008; Crane et al., 2016), Chinese mutual funds may show investment strategies that differ from US mutual funds due to the strong economic growth and preferences of mutual fund investors. Our empirical analysis discovers that mutual funds tend to invest in growing companies, indicated by high Tobin's Q, large capital expenditure, and high sales growth. Furthermore, we find that mutual funds encourage companies to increase capital expenditure and enhance sales growth. These findings suggest that Chinese mutual funds choose a growth-focused strategy, which will generate large capital gains, as opposed to seeking a more conservative income-focused strategy that curtails free cash flow problems. We also find no evidence that higher mutual fund ownership leads to higher dividend payout level. Instead, we find that mutual fund ownership is positively related to cash holding level, which is different from conventional free cash flow theory. We also find that mutual fund ownership is positively associated with a firm's operating and financial performance in subsequent years, which indicates the growth-oriented strategies of mutual funds enhance firm value. Our research contributes to the understanding of the mutual funds' strategy by showing how their behavioral patterns differ from US institutions. Economic conditions and investor preference significantly affect the behaviors of institutional investors, which plays an important role in corporate governance.

Table 7 Mutual fund ownership and dividends, cash holdings, and performance: Propensity score matching analysis

Panel A: Other firm characteristics in year t+1 as outcome variables									
Without replacement					With replacement				
Matching estimator	Treat	Control	Diff.	t-stat	Matching estimator	Treat	Control	Diff.	t-stat
DIV_ahead	0.0142	0.0133	0.00092	2.1**	DIV_ahead	0.0146	0.0138	0.00074	1.37
CASH_ahead	0.1642	0.1665	-0.00232	-0.91	CASH_ahead	0.1662	0.1636	-0.00257	0.8
ROA_ahead	0.0334	0.0246	0.00882	5.37***	ROA_ahead	0.0347	0.0253	0.00937	4.48***
Tobin's Q_ahead	2.8030	2.7817	0.02129	0.56	Tobin's Q_ahead	2.7418	2.7108	0.03094	0.64
Panel B: the average of other firm characteristics (from year t+1 to year t+3) as outcome variables									
Without replacement					With replacement				
Matching estimator	Treat	Control	Diff.	t-stat	Matching estimator	Treat	Control	Diff.	t-stat
DIV_avg	0.0150	0.0145	0.00049	1.01	DIV_avg	0.0154	0.0146	0.00076	1.28
CASH_avg	0.1578	0.1637	-0.00584	-2.42**	CASH_avg	0.1618	0.1645	-0.00262	-0.86
ROA_avg	0.0268	0.0225	0.00432	2.99***	ROA_avg	0.0293	0.0251	0.00428	2.41**
Tobin's Q_avg	2.7315	2.7848	-0.05238	-1.47	Tobin's Q_avg	2.6920	2.7741	-0.08214	-1.77*

Panels A and B of this table present the average treatment effects of mutual fund ownership on dividends (DIV), cash holdings (CASH), and performance (ROA and Tobin's Q). Propensity score matching is used to select a matching sample for each firm-year observation in the treatment groups. We first conduct a probit regression of a binary dummy variable, where which takes a value of 1 is used for firm-year observations with mutual fund ownership ranging from its 55th to 95th percentiles, and a value of 0 is used for firms with mutual fund ownership in the range from zero to 50th percentile. We conduct the nearest matching process with a the caliper of 0.01 to find a matching firm. Panel A adopts a one-year lead variable of capital expenditure and sales growth rate as the outcome variables, while Panel B uses the average of capital expenditure and sales growth ratio for the period between year t+1 and t+3. Panels C and D present the average treatment effects of the financial company's ownership on capital expenditure (CAPEX) and sales growth rate (SGR) using the same method. T statistics are for the mean difference test of the outcome variable between the treated and control groups. Significance at 1%, 5% and 10% level are indicated by ***, ** and * respectively.

Appendix A.

Variables	Definitions
MF	The ownership proportion of mutual funds.
FC	The ownership proportion of financial companies.
DIV	The cash dividend payment divided by the total asset.
CASH	The cash assets held divided by the total asset.
FCF	Free cash flow, calculated by <i>(after-tax net profit-capital expenditure-the increase of working capital)/total asset</i> .
CAPEX	Capital expenditure divided by the book value of total assets.
SGR	Sales growth rate, calculated by annual percentage change in sales income.
SIZE	Natural logarithm of book value of total assets.
LEV	Total debt over total assets.
ROA	Net income divided by average amount of year-end and year-beginning value of total assets.
Tobin's Q	Ratio of total liabilities and market value of equity divided by the book value of total assets.
Control	The percentage of shares owned by the largest shareholder.

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