An examination of the relationship between mutual funds' holdings and listed firms in China

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Jingjing Yang

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Dedication:

This thesis is dedicated to my wife, Wang Chen, and my son, Yang Feiran. Your love, sacrifice and understanding is boundless.

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Abstract

This thesis comprises three essays that focus on the relationship between mutual funds and listed firms in China. In contrast to existing studies, which regard mutual funds as being homogeneous, Essay One classifies mutual funds into three categories based on their past investment behaviours: dedicated, quasi-index and transient mutual funds. Different mutual fund types are then used throughout the whole thesis. Moreover, Essay One also finds that different mutual funds have different criteria of selecting portfolio firms and adopt different trading strategies.

In the following two essays, dedicated and quasi-index mutual funds are grouped together as long-term mutual funds, as both of them have longer holding periods than transient mutual funds. Transient mutual funds are treated as short-term mutual funds[1]. Essay Two examines the impact of mutual funds on earnings management. The empirical evidence indicates that long-term mutual funds can constrain non-core income management. However, they are incapable of influencing accruals management. Transient mutual funds, which pursue short-term earnings, can encourage listed firms to manage earnings in a subtle way: decreasing non-core income, but increasing discretionary accruals.

Essay Three investigates the relationship between mutual funds and dividend

1 This thesis uses the terms “transient mutual funds”, “short-term mutual funds”, synonymously.

payouts. Essay Three finds that all mutual funds types prefer to invest in listed firms that pay cash or stock dividends. Listed firms tend to pay more cash dividends after the long-term mutual funds' ownership increases. Due to the concern of the deterioration of financial ratios and the liquidity of stocks, long-term mutual funds do not encourage their portfolio firms to pay more stock dividends. On the other hand, listed firms increase both cash and stock dividend payout rates after transient mutual funds' ownership increases.

Overall, the empirical evidence indicates that different mutual fund types show different preferences for firm attributes and exert different impact on their portfolio firms. The heterogeneity among Chinese mutual funds investigated in this thesis has not previously been rigorously investigated and this makes the findings of this thesis important and unique for the benefit of both academic research and practical application.

Chapter 1 Introduction

1.1 Introduction

This thesis investigates the investment behaviours of mutual funds, and the relationship between mutual funds and their portfolio firms in China. The study consists of three interrelated essays which focus on two major research questions. First, are all Chinese mutual funds homogeneous? If not, what are the differences among their portfolio selection criteria? Second, how do mutual funds with different trading strategies influence listed companies' major activities (namely earnings management and dividend payout)?

The remainder of Chapter 1 is organized as follows: Section 1.2 discusses the motivations and objectives of this thesis; Sections 1.3, 1.4, and 1.5 are the introductions of Essays One, Two, and Three, respectively. Section 1.6 shows the organizations of the other chapters of the thesis.

1.2 Motivations and objectives

Chinese mutual funds are the focus of this thesis, because they have become a major player in Chinese stock markets in recent years. Compared with other types of institutional investors (e.g. pension funds, insurance companies, banks), mutual funds have larger investment size and longer history of investing in stock markets. Firth, Lin

and Zou (2010) state that mutual funds are the largest type of institutional investor in tradable shares, and mutual funds' holdings account for 76% of all the institutional tradable shareholdings in the Chinese stock markets. Yuan, Xiao and Zou (2008) find that the average of mutual funds' shareholdings is around 7% of tradable shares on issue. Since small individual investors usually fail to attend the meetings and exercise their voting rights, the largest shareholders constitute almost 80% of the voting shares present at general shareholder meetings. Under such circumstances, individual investors usually play the role of free-riders in China (Qi, Wu and Zhang, 2000). Although mutual funds' holdings are not as large as those in the US, they can mitigate such free-rider problems by pooling diffused minority (individual) shareholders in China (Yuan, Xiao, and Zou, 2008). Furthermore, mutual funds' holdings significantly influence individual investors' trading behaviours in China. Many individual investors follow mutual funds when buying and selling the shares of listed firms[2] (Tan, 2010).

Since mutual funds were introduced to Chinese stock markets in 1997, regulatory bodies expected that mutual funds could reduce market volatility and provide sufficient monitoring to listed companies. However, mutual funds were caught up in many scandals in the early years. In 2000, an article named "*The dark side of mutual funds* (*Ji Jin Hei Mu*, Ping and Li, 2000)" was published on a leading financial magazine "*Cai jing*" and unveiled many illegal operations of mutual funds. According

[2] This has also been reported in the press. See http://youthdaily.why.com.cn/epublish/node37623/index.html (Chinese version).

to this article, most mutual funds were short-term speculators and involved in a series of illegal operations. These operations included insider trading between two mutual funds under the same fund management company in order to increase the trading volume and attract more investors; insider trading with the large shareholders or controllers of fund management companies; disclosing misleading or false information. The authors suggested that these illegal operations by mutual funds would significantly harm the stability of stock markets and the interests of individual investors.

The literature, however, holds contradictory opinions on mutual funds' trading behaviours, and their relationship with listed firms. Qi et al. (2006) report a herding effect in mutual funds' investment behaviours, as they find that a number of mutual funds tend to buy/sell the shares of the same listed firms at the same time after these firms release positive/negative information. Xu and Xiao (2006) report that mutual funds generally act as momentum traders when setting up portfolios or buying stocks.

Using non-tradable share reform to reveal the role of institutional investors, Fu and Tan (2008) and Qiu and Yao (2009) find that institutions, including mutual funds, support less compensation to tradable shareholders. They argue that institutional investors align with large non-tradable shareholders in the non-tradable share reform in order to gain insider information or influence the corporate strategy. Firth, Lin and Zou (2010) place their focus on mutual funds and find similar results.

Notwithstanding, they argue that mutual funds are subject to the political pressure from state shareholders who are the major owners of non-tradable shares. As such, mutual funds support less compensation to tradable shareholders and also the quick approvals for those compensation plans in the non-tradable share reform. Although these arguments are different, they all indicate that institutional investors, including mutual funds, do not provide adequate protection to the individual investors.

On the other hand, there is some evidence in favour of mutual funds' activities. Li (2007) investigates the impact of mutual funds on the volatility of stock markets, and finds that mutual funds can help reduce the downside fluctuation and stimulate the upside fluctuation of the stock markets. Further, according to the report of "Securities Daily" on 9th September 2009, mutual funds have adopted relatively more diversified investment strategies in recent years, as around 200 listed companies have only one mutual fund shareholder within their top ten largest shareholders at the end of 2nd quarter of 2009. Yuan, Xiao and Zou (2008) find that mutual funds have a positive impact on both the operating and stock market performance of listed firms. They argue that mutual funds can provide effective monitoring to listed firms, and in turn, boost the performance of listed firms.

It is noteworthy that these studies only employ the aggregate ownership of mutual funds and other institutional investors in their research. Institutional investors usually have different investment goals, and hence, their trading behaviours are not

exactly the same. As such, the research questions proposed in Section 1.1 have not been answered so far. In order to achieve the two main research objectives, this thesis empirically examines the characteristics of mutual funds' portfolios and categorizes mutual funds into three groups based on their past investment behaviours. This thesis then investigates the impact of different types of mutual funds on two major corporate activities: earnings management and dividend payouts.

1.3 Essay One

Essay One is the foundation of this thesis. Since mutual funds were required by Chinese Securities Regulatory Commission (CSRC) to release the information of their holdings from July 2004, the sample period of this essay is from September 2004 to December 2009. First, this study constructs eight variables to measure mutual funds' portfolios (e.g. portfolio turnover, holding period), and uses factor analysis to identify the common factors from these variables. This study then employs the cluster analysis to categorize mutual funds into three groups based on the common factors derived from the factor analysis. The methodology was developed by Bushee (1998, 2001), but is adapted to the characteristics of Chinese mutual funds here. Three types of mutual funds have been identified: dedicated, quasi-index and transient mutual funds. These classifications of mutual fund types are then used throughout all the three essays.

In the second part of the empirical analysis, this study examines the preferences

shown within the different types of mutual funds in relation to portfolio firm selections using regression analysis. The result can also testify the robustness of mutual fund classification. This study first examines the differences between the characteristics of firms with and without mutual fund ownership. After that, this study runs both univariate and multivariate regressions to find out the determinants of mutual fund ownership. The results of univariate regressions show which firm attribute gives the largest contribution to the ownership of each type of mutual fund. Finally, Tobit regressions and some alternative variables are used as robustness tests to confirm earlier results.

Essay One casts new light on the investment behaviours of Chinese mutual funds. It provides a new viewpoint that mutual funds are not homogeneous with respect to their trading strategies and portfolio selection criteria.

1.4 Essay Two

Essay Two focuses on the relationship between mutual funds' holdings and listed firms' earnings management activities in China. Existing studies mainly use aggregate institutional ownership to examine the impact of institutions on earnings management in China (Bo and Wu, 2009; Huang, 2009). However, Koh (2007) finds that institutions with different trading strategies influence earnings management in different ways in the US (i.e. long-term institutions constrain earnings management,

whereas short-term institutions encourage earnings management). Koh (2007) argues that the failure to distinguish institutional ownership would lead researchers to inappropriate conclusions. As such, in contrast to existing studies, this study uses long-term and short-term mutual funds' ownership in the empirical analysis.

Essay Two groups dedicated and quasi-index mutual funds together as long-term investors, and treats transient mutual funds as short-term investors. Three earnings management measures are employed to proxy the earnings management activities of listed firms: non-core income, discretionary accruals, and positive discretionary accruals. Non-core income mainly reflects the income from non-core activities, such as buying and selling the assets, or subsidy from the government. Through managing non-core income, managers can easily adjust the earnings. In addition, managers can also choose to make or defer discretionary expenditures (i.e. research and development expense, advertising, or maintenance) to adjust the earnings (Healy and Wahlen, 1999). These activities are mainly reflected in discretionary accruals. This study first examines the differences in the levels of earnings management between listed firms with and without mutual fund ownership. This study then investigates the impact of long-term and short-term mutual fund holdings on earnings management. Considering that there may be endogeneity between mutual funds' holdings and listed firms' earnings management activities, this study further employs Two Stage Least Square (2SLS) regressions as the robustness check.

Previous studies argue that state-controlled listed firms have less incentive to manage earnings than non-state-controlled ones (Aharony, Lee and Wong, 2000; Bo and Wu, 2009). Therefore, this study further splits the whole sample into two sub-samples (state-controlled and non-state-controlled listed firms), and repeats the regressions.

Essay Two contributes to the literature on how long-term focused and short-term focused mutual funds influence earnings management in China. By employing three different earnings management proxies and comparing them with each other, Essay Two also provides a clearer picture of the earnings management activities of listed firms in China than previous studies.

1.5 Essay Three

Essay Three investigates the relationship between mutual funds' holdings and listed firms' dividend policies in China. As with Essay Two, dedicated and quasi-index mutual funds are grouped together as long-term mutual funds, and transient mutual funds as regarded as short-term mutual funds here. Both cash and stock dividends, which are popular in China, are examined in Essay Three.

In the first part of the empirical analysis, this study examines whether mutual funds prefer to hold the shares of listed firms that pay cash or stock dividends. This study first examines the differences in shareholdings by mutual funds between firms

that do and do not pay cash/stock dividends, or firms that pay low and high cash/stock dividends. This study then investigates mutual funds' preferences for cash or stock dividends using regression analysis. Following Grinstein and Michaely (2005), this study uses the changes in cash/stock dividend rates between the current year and the previous year as the main independent variables, and the changes in mutual fund holdings between the current year and the previous year as the dependent variables in the regressions. This can prevent the empirical results from being affected by the potential endogeneity between mutual fund holdings and dividend payouts.

In the second part of the empirical analysis, this study focuses on the impact of mutual funds' ownership on the level of cash and stock dividend payouts. This study constructs a series of variables to control for the effects of firm attributes (e.g. the level of net operating cash flow, earnings to assets ratios) on dividend payouts. As the literature suggests that the attributes of firms that pay dividends significantly differ from those that do not pay (e.g. Fama and Frech, 2000; Huang, Shen and Sun, 2011), this study examines the differences in these attributes between firms that do and do not pay cash/stock dividends. Finally, this study investigates how mutual funds influence the cash and stock dividend rates using regression analysis. In order to address the issue of endogeneity, the dependent and the main independent variables are the changes in cash/stock dividend rates and the changes in mutual funds' holdings, respectively.

The effects of long-term focused and short-term focused mutual funds on

dividend payouts in China, which reported in Essay Three, have not been investigated by previous studies. Moreover, as dividend payouts are regarded as an outcome of agency conflicts (e.g. Jensen, 1986; Shleifer and Vishny, 1986), Essay Three also contributes to the literature on how mutual funds reduce the agency conflicts in China.

1.6 Organisation of the thesis

The remainder of this thesis contains six chapters. Chapter 2 presents the institutional background of Chinese stock markets and mutual funds. Chapter 3 is the literature review and contains four subsections. Section 3.1 reviews the literature on institutional investors. Section 3.2 reviews the literature on corporate governance in China. Sections 3.3 and 3.4 review the literature on earnings management and dividend payouts.

Chapters 4, 5 and 6 are Essay One, Two and Three, respectively. Chapter 4 examines the investment behaviours of mutual funds, and classifies mutual funds into three groups based on their past investment behaviours. It further investigates the preferences of different types of mutual funds for the characteristics of listed companies. Chapters 5 and 6 employ long-term and short-term mutual funds' ownership, which is derived from the Chapter 4, to investigate the impact of mutual funds on the earnings management activities and dividend payouts of listed companies.

Chapter 7 summarises the entire thesis. It also provides the contributions of this thesis to the academic literature and policy implications. This chapter ends with the discussion on the limitations of the research and suggestions for future research.

Chapter 2 The Institutional Background of Chinese Stock Markets and Mutual Funds

2.1 The institutional background of Chinese stock markets

There are two stock exchanges in mainland China: Shanghai Stock Exchange (SHSE) and Shenzhen Stock Exchange (SZSE). The SHSE was established on 26th November 1990 and began its operation on 19th December 1990. Following the SHSE, the SZHE was later established on 1st December 1990, and began its operation on 3rd July 1991. Both the SHSE and SZSE are operating on the order-driven basis. Unlike the stock exchanges in the US and other developed countries, the SHSE and SZSE are non-profit organization and directly governed and administered by the CSRC, which was established in 1992. The CSRC is a division under the State Council and responsible for supervising and regulating security issuing and trading activities. After the establishment of the SHSE and SZSE, there was confusion over the roles of regulators as there were three regulatory agencies: the State Council Securities Commission (SCSC), People's Bank of China (the de facto Central Bank), and the CSRC, and they had overlapping duties. In order to avoid overlapping duties and provide more effective supervision, the State Council nominated the CSRC as the primary regulator of the stock markets through the promulgation of *Security Law* on 1st June 1999. To date, more than 2300 companies are listed on the SHSE and SZSE. According to the report of *Chinese Security Depository and Clearing Corporation*

Limited, there were approximately 167,255,000 A-share accounts and 2,529,300 B-share accounts in the Chinese stock markets by 19th October 2012[3]. As reported by Bloomberg News (16 July 2009), the sum of the market capitalization of the SHSE and the SZSE has been ranked as the second highest in the world. Moreover, the sum of the market capitalization of the SHSE and SZSE was approximately 18.65 trillion Chinese Yuan on 11st November 2011[4].

Table 2.1[5] shows the statistics of Chinese stock markets. During the past eight years, the market reached the peak in 2007, and then started to move down afterwards. The central government launched a "Four Trillion Project" to boost the economy at the end of 2008. As such, stock markets performed very well in 2009. The markets were very active during 2006 to 2009, and then became quiet afterwards. Moreover, both the cash and stock dividend payout rates of listed firms did not vary a lot. Both of them reached the highest level in 2011. The number of listed firms increased from 1377 in 2004 to 2342 in 2011.

[3] See: http://www.chinaclear.cn/main/03/0303/030305/1351064608455.htm (Chinese version)

[4] See: http://news.xinhuanet.com/fortune/2011-11/12/c_111162581.htm (Chinese version)

[5] The statistics reported in Table 2.1 is collected from the China Center for Economic Research database (CCERDATA) and the China Stock Market Accounting Research database (CSMAR).

Table 2.1 Descriptive statistics of Chinese stock markets

	2004	2005	2006	2007	2008	2009	2010	2011
Annual market return of SHSE	-0.15	-0.06	1.13	1.20	-0.65	0.83	-0.12	-0.19
Annual market return of SZSE	-0.15	-0.10	1.05	1.86	-0.63	1.19	0.08	-0.32
Average turnover rate of listed firms	0.74	1.86	3.32	2.95	2.29	3.04	2.19	1.53
Average market capitalization	5,006.29	4,079.21	6,668.64	15,538.45	5,707.25	11,671.53	11,020.23	7,779.03
Average cash dividend rate (payers)	0.14	0.16	0.15	0.16	0.17	0.15	0.17	0.20
Average stock dividend rate (payers)	0.52	0.46	0.46	0.46	0.56	0.48	0.54	0.65
Average cash dividend rate (all)	0.07	0.09	0.07	0.08	0.09	0.08	0.09	0.12
Average stock dividend rate (all)	0.10	0.06	0.06	0.07	0.15	0.07	0.11	0.18
Total number of listed firms	1377	1420	1456	1550	1578	1718	1999	2342

Annual market return is the annual return of Shanghai/Shenzhen stock markets with dividends reinvested. Turnover rate is a firm's annual trading volume scaled by the number of its tradable shares. Market capitalization is the listed firm's market value (Chinese Yuan in million), which is its total number of shares times the share price at the end of each year. Average cash dividend rate (payers) is the average of cash dividend payout rates of all cash dividend-paying stocks. Average stock dividend rate (payers) is the average of stock dividend payout rates of all stock dividend-paying stocks. Average cash dividend rate (all) is the average of cash dividend payout rates of all listed firms, including firms that do not pay cash dividends. Average stock dividend rate (all) is the average of stock dividend payout rates of all listed firms, including firms that do not pay stock dividends.

Since the establishment of the stock markets, the shares of listed firms are comprised of non-tradable and tradable shares as the state wanted to retain control of listed firms. To date, there are still a number of non-tradable shares in Chinese stock markets. Tradable shares primarily include A-share, B-share, H-share and N-share. A-shares refer to shares traded in Chinese Yuan on the SHSE and SZSE. B-shares of companies listed on the SHSE are quoted and traded in US dollar, whereas B-shares of companies listed on the SZSE are quoted and traded in Hong Kong dollar. Around 110 companies have B-shares listed on the SHSE and SZSE by the end of 2011. In spite of different shareholder types and different currencies in which shares are quoted and traded, A-shares and B-shares are identical in all other aspects, including the rights to dividends and voting. The shares of domestic companies listed on the Hong Kong Stock Exchange and the US stock markets are named of H-share and N-share,

respectively. Since the establishment of the stock markets, A-shares are designed for domestic investors, whereas B-shares are designed for investors outside mainland China only. However, domestic investors are allowed to invest in B-shares after 20th Feb 2001, and A-shares also have been opened to Qualified Foreign Institutional Investors (QFII) [6] after May 2003 in order to enhance the strength of institutional investors in markets and to be aligned with the WTO agreement. UBS and Nomura Securities were the first two foreign institutional investors participating in Chinese A-share markets since 23rd May 2003.

Before the non-tradable share reform, which started from April 2005, about two-thirds of shares on issue were non-tradable (Li, Cheung and Jiang, 2008; Yuan, Xiao and Zou, 2008). There are two major classes of non-tradable shares: state-owned shares and legal-person shares. A typical Chinese listed firm has 30% state-owned shares and 30% legal person shares, with the remaining as individual tradable shares (Fan, Lau and Young, 2007). State-owned shares are owned by the state (including both the central and local governments) and their agencies. Although the legal person is defined as an enterprise or economic entity with a legal status, legal person shares are more complex. They can be owned by a number of heterogeneous entities, ranging from solely state owned enterprises to private firms (Chen, Firth and Xu, 2009), but most of the owners of legal person shares are enterprises or institutions ultimately controlled by the central or local governments. Before the non-tradable share reform,

[6] QFII will not be included in this research. This research only contains the mutual funds registered in Mainland China.

state-owned shares could only be transferred to other government agencies, legal entities, and foreign companies subject to state approval. In practice, non-tradable shares are often transferred through private negotiations based on net asset value per share, and the cost of owning non-tradable shares is much less than that of owning tradable shares (Chen and Xiong, 2001). This has led to discrepancy of the pricing mechanism and has hurt the price discovery process of the stock markets (Qiu and Yao, 2009). The split share structure is also one of the leading reasons why controlling shareholders tend to divert the wealth from listed firms. Controlling shareholders are indifferent to share price changes, as their shares are not allowed to be traded on the secondary markets. Moreover, the existing of non-tradable shares restricts merger and acquisition activities of domestic companies through the stock markets. Due to these disadvantages of the stock-split structure, the Chinese government started the non-tradable share reform in April 2005. The core activity of the reform is that shareholders of non-tradable shares are required to negotiate with shareholders of tradable shares to determine the compensation to shareholders of tradable shares before their non-tradable shares could be traded in the secondary markets. The CSRC requires that no less than two thirds of all shareholders and no less than two thirds of shareholders of tradable shares have to reach an agreement on the compensation scheme of each listed firm. According to the "*Administrative Regulation for listed firms' stock right splitting reform*", which was issued by the CSRC on 4th Sep 2005, non-tradable shares were still not permitted to be traded for 12 months after the execution of the compensation plan. After the first 12-month lock-up

period, non-tradable shareholders could only trade their shares up to 5% of listed firm's total shares for the next 12 months and up to 10% of listed firm's total shares for the next 24 months. To date, more than 99% of listed firms in the SHSE and SZSE have compensated shareholders of tradable shares. The shares of other firms that still have not compensated their shareholders of tradable shares are nominated S-shares, and are limited to fluctuate within 5% of their opening prices on every trading day.

Compared with the stock markets in the US and other developed nations, the Chinese stock markets have less than a 20 years' history, and lack a sound legal framework. The *Company Law* and *Security Law* became effective on 1st July 1994 and 1st June 1999, respectively. In order to give investors better protection, both of them were revised in 2004 and became effective on 1st June 2006. For instance, according to Article 148 of the revised *Company Law*, directors, supervisors and managers owe a duty of loyalty and due diligence to the company. As a supplement, Article 149 specifies particular examples of disloyalty. The revised *Security Law* also involves detailed provisions regarding the civil liabilities for false corporate disclosure (Zou et al., 2008). The other code and laws related to investor protection include: *Guidelines for Introducing Independent Directors to the Board of Directors of Listed Companies (2001); the Code of corporate governance for listed companies in China (2002); Provisional Code of Corporate Governance for Security Companies (2004); Property Right Law (2007).*

Researchers argue that without a truly independent judicial system and under the condition of the state playing both the role of regulator and market participant, the interests of investors (especially minority investors) cannot be well protected. For instance, Allen, Qian and Qian (2005) and Zou et al. (2008) argue that the judicial system is not independent and effective in China and cannot provide investors with adequate protection. The establishment of the stock markets was originally aimed at helping state-owned enterprise (SOE) raise capital from the general public and solve the money-losing SOEs' financial problems (Chen, 2003). The Chinese Supreme People's Court (SPC) still holds a cautious attitude towards securities lawsuits against listed firms at present. The SPC prohibited lower courts from accepting listed firm cases on ground that the legislative and judicial conditions were not ripe for hearing such cases on 21st September 2001 (Zou et al. 2008). The SPC only permitted lower courts to accept listed company cases which relate to false disclosures on 15th January 2002, and then enacted a rule on the details of dealing with the false disclosure on 9th January 2003. However, the number of local listed firms is one of the major metrics of performance on which future promotion of local government officials is evaluated (Chen, 2003). Listed firms can help local government achieve both political and social objectives. Under these conditions, the law enforcement cannot be guaranteed and listed firms can usually gain protection from the local government. As such, it is still extremely difficult for minority investors who suffer from the inappropriate behaviours of directors, supervisors and managers to acquire civil remedy through lawsuits, as it has traditionally been neglected by law (Chen, 2003).

2.2 The institutional background of Chinese mutual funds and other institutional investors

Institutional investors are organizations which pool large sums of money and invest those sums in securities markets. Institutional investors are relatively new to Chinese stock markets, but their recent growth has been rapid. They include mutual funds, banks, insurance companies, retirement or pension funds, trust, and hedge funds, and their role in the economy is to act as highly specialized investors on behalf of others. Mutual funds are the first and major players among all types of institutional investors in China. Since the Chinese State Council issued the *Provisional Regulations for the Supervision of Security Investment Fund* on 14th November 1997, mutual funds have been formally introduced to domestic investors, and have become one of the earliest and leading institutional investors in Mainland China. Chinese regulatory bodies expect that through the mutual funds' shareholdings, Chinese stock markets can continue developing in a more stable way. By the end of 2000, a vast majority of funds in the market were close-ended funds. After the issuance of the *Provisional Regulations on Open-end Securities Investment Funds* by the State Council in 2000, a number of open-ended funds emerged in the markets, with open-ended funds soon taking the place of close-ended funds and becoming the dominant type of investment funds in China. The CSRC enacted the *Security Investment Fund Law* (SIFL) on 1st June 2004. According to the SIFL, mutual funds must be managed and operated by fund management companies (FMC). A major portion of the FMCs are owned, or

controlled, by security companies in China. Chinese security companies are similar to investment banks in the US. Besides carrying out an asset management role, security companies also directly invest in the markets and own substantial equity in listed firms. The CSRC issued the *Regulation for the Establishment of Fund Management Company with Participation of Foreign Capital* on 1st June 2002. The first joint venture FMC, China Merchants Fund Management, was then established in January 2003.

As for other institutional investors in China, the major Chinese public pension fund, the National Social Security Fund, was established in 2000 and started to invest in equities in June 2003. Insurance companies have been permitted to hold equity positions on their own account since October 2004 in China. Insurance companies have been allowed to directly invest up to 10% of their total assets in the A-share market since July 2007. Insurance companies can also indirectly invest another 10% of their total assets in stock markets through subscribing to investment funds. Commercial banks have been allowed to engage in the security investment fund business, through setting up fund management companies, since February 2005. In order to reduce the speculative investments, the CSRC forbad trust companies from investing in stock markets in 2009. However, trust companies gained the permission to invest in stock markets in 2012, as the CSRC wanted to boost the stock markets.

Most mutual funds do not solely invest in domestic stock markets. Some of them

also invest in bonds, money markets, overseas stock markets, and other types of assets. There were 603 mutual funds in China at the end of 2009. The average value of their total assets was 4,795,610,338 Chinese Yuan. 88% of them (531 mutual funds) had money invest in stock markets. 12% of them (72 mutual funds) only invested less than 10% of their total assets in stock markets. On average, stock market investments accounted for 57.11% of their total assets. The number of mutual funds has increased very rapidly. By the end of September 2012, there were 1275 mutual funds. The average value of their total assets was 2,508,320,741 Chinese Yuan[7]. 74% of them (937 mutual funds) had money invested in stock markets. On average, stock market investments accounted for 47.07% of their total assets[8]. This thesis only focuses on securities investment funds (mutual funds) that have money invested in equity markets, since these funds are the earliest and principal players in the Chinese stock markets.

[7] As Chinese stock markets went down after 2009, the average value of mutual funds' total assets in 2011 was lower than that in 2009.

[8] The data of mutual funds in this section is collected from www.jrj.com

Chapter 3 Literature Review

3.1 Introduction

Chapter 3 reviews the related literature. Section 3.2 reviews the literature on institutional investor classifications and the preferences of institutional investors for investing in listed firms with certain characteristics. Section 3.3 reviews the literature on corporate governance in China, as various variables that measure the governance of listed firms are used as control variables in the empirical analyses of Essays Two and Three. It contains two sub-sections: internal and external governance. Section 3.4 reviews the literature on the earnings management activities of listed firms, and the relationship between institutional investors and earnings management. Section 3.5 reviews the literature on the dividend payouts of listed firms, and the relation between institutional investors and dividend payouts.

3.2 Institutional investors

3.2.1 Long-term investors vs. short-term investors

Institutional investors in the US have been widely investigated by academics during the past two decades. Studies before or in the 1990s hold contradictory opinions on the incentives and investment strategies of institutional investors. Some

studies argue that institutional investors overall are short-term investors and place excessive focus on the short-term performance of listed firms. Loescher (1984) argues that institutional investors tend to avoid holding large blocks of stocks that have become devalued due to the decreases in current earnings. Graves (1988) finds a negative relation between institutional ownership and corporate research and development (R&D) spending, and argues that institutional investors are myopic and their preference for short-term performance may harm the benefits of listed firms in the long-run. Graves and Waddoc (1990) suggest that although pension funds are regarded as long-term investors, they may also emphasis short-term performance, as they are required to make fixed payment at some future dates to their employees.

Porter (1992) states that most institutional investors have active trading behaviours, and would undermine the long-term earnings power of listed firms. Porter also argues that index funds, which are seen as long-term investors, usually have extreme fragmentation of ownership in their portfolio firms and are incapable of influencing listed firms. As such, Porter (1992) suggests that institutions should increase the size of their stakes in portfolio firms, reduce portfolio turnover, and carefully select portfolio firms based on the earnings power, so that the institutions could have a motive to exert positive influence on portfolio firms.

However, some other studies argue that institutional investors are able to boost the performance of listed firms in the long-run. Jarrell, Lehn and Marr (1985) argue

that institutional investors are not likely to force listed firms to cut R&D expenditures to boost short-term performance, because institutional investors overall seek long-term returns. Hansen and Hill (1991) even find a positive relationship between institutional ownership and listed firms' R&D investment. Hansen and Hill argue that institutions overall pay more attention to long-term rather than short-term performance of listed firms.

3.2.2 Institutional investor classification

Recent studies argue that institutional investors are not homogeneous in terms of their investment behaviours and incentives, and therefore cannot simply conclude that institutions overall are long-term or short-term investors (Bushee, 1998, 2001; Bushee and Noe, 2000; Bennett, Sias and Starks, 2003; Chen, Harford and Li, 2007). These studies argue that institutions with active trading behaviours place more focus on short-term performance and undermine the long-term earnings power of listed firms. On the other hand, some other institutions with stable portfolios and concentrated investment could emphasis long-term performance of listed firms, and have motives to exert positive influence on their portfolio firms. As such, recent studies categorize institutions into different groups based on their past investment horizons, and associate different institution types with major corporate events. This can help explore the idiosyncratic behaviours within different types of institutional investors, and find out how different types of institutions influence listed firms.

Three major institution types have been identified by the literature: dedicated, transient and quasi-index institutions (e.g. Bushee, 1998, 2001). According to the definition, dedicated institutions, which have low turnover and concentrated portfolio holdings, prefer large and long-term holdings in a few companies. Quasi-index institutions have low turnover and diversified portfolio holdings, and usually adopt a buy and hold trading strategy. Transient institutions, which have high portfolio turnover and diversified portfolios, usually hold small stakes in numerous firms and trade frequently in and out of the stocks. According to the holding periods of institutions, dedicated and quasi-index institutions are usually regarded as long-term institutional investors, while transient institutions are regarded as short-term institutional investors (e.g. Koh, 2007).

Bushee (1998) finds that only transient institutions are likely to force managers to cut the R&D spending. Other long-term institutions are more sophisticated and would not push managers to reduce the R&D spending to reverse earnings decline. Bushee (2001) reports that transient institutions' strong preference for near-term earnings would cause listed firms' near-term market values to be significantly over-valued, whereas long-term institutional ownership is not likely to cause misevaluations. Chen, Harford and Li (2007) place their focus on the role of institutions in the acquisition decisions of listed firms, and find that long-term institutional investors have a positive impact on the post-merger performance of listed firms. Chen, Harford and Li (2007) argue that long-term institutions are more willing

to monitor and influence listed firms than trade the shares of these firms. Long-term institutions even attempt to reverse poor management decisions, and would only sell shares when anticipating a large value reduction and/or perceiving their abilities to influence the management are low. On the contrary, short-term institutions do not provide effective monitoring, and are more likely to sell the shares of listed firms when managers make poor decisions. Until now, no research has empirically classified institutional investors based on their investment behaviours in China. In Chapter 4, this thesis adapts the methodology used by Bushee (2001) according to the characteristics of Chinese mutual funds, and categorizes them into three groups. Different mutual fund types are then used throughout the empirical analyses of this thesis.

3.2.3 The preferences of institutional investors for the characteristics of listed firms

3.2.3.1 The preferences of institutional investors in the US

Falkenstein (1996) investigates mutual fund equity holdings in the US from 1991 to 1992, and reports that volatility, liquidity, and information generated by listed firms can significantly explain mutual fund ownership. Falkenstein (1996) argues that mutual funds show a non-linear preference towards listed firms with high volatility, and show preference towards listed firms with high price, high liquidity, and large

size. Gompers and Metrick (2001) examine the institutional investors' demand for stock characteristics in the US during the sample period of 1980 to 1996, and find that institutional investors prefer to invest in stocks that are large, more liquid, and have relatively low returns during the previous year. Woidtke (2002) argue that institutional investors in the US are concerned with whether a firm had positive earnings in the previous year in order to justify whether investment decisions are prudent.

However, Bennett, Sias and Starks (2003) argue that the preferences of institutional investors for large capitalization stocks decline over time, in favour of smaller and riskier stocks. By doing a cross-country analysis, Covrig, Lau and Ng (2006) find that although both domestic and foreign fund managers prefer stocks with high return on equity, large turnover and low risk, they exhibit different investment behaviours. Relative to domestic fund managers that favour firms with low financial risk and high growth rates, foreign fund managers tend to invest in multinational firms. Similarly, Ferreira and Matos (2008) report that, although all institutional investors prefer large firms and firms with good governance, foreign institutions are likely to overweight firms that are cross-listed in the US.

3.2.3.2 The preferences of institutional investors in China

Prior studies on institutional investors' preferences mainly focus on the US markets, or engage in cross-country analyses, which do not include mainland China.

Only a few studies in Chinese language empirically investigate the preferences of mutual funds in China, and find mixed results. Yang, Cai and Shi (2004) find that mutual funds prefer listed firms with high earnings per share and high liquidity. Huang and Wen (2005) find that mutual funds show preferences for good growth opportunities, high return on equity (ROE) and low level of debt. Liu and Yu (2010) argue that mutual funds prefer listed firms with high beta, low liquidity and large size. However, these studies only employ aggregate institutional ownership in their analyses, and do not consider that institutions with different investment goals may have different preferences for firm attributes. As such, this thesis employs the ownership of different types of mutual funds to examine mutual funds' preferences for the characteristics of listed firms in China in Chapter 4 (Essay One).

3.3 Corporate governance in China

Corporate governance is one of the key factors that determines the efficiency and performance of listed firms. It exerts significant influence on the earnings management activities and dividend policies of listed firms. As such, this thesis employs various variables to control for the impact of corporate governance mechanisms on earnings management and dividends payout in the empirical analysis, and reviews the literature on the corporate governance in China. Researchers generally place corporate governance into two categories: internal and external governance. Internal governance is primarily constituted of ownership and control, the

characteristics and composition of the board of directors, and executive compensation; while external governance covers the takeover market, institutional investors, and the state regulatory system[9] (Huson, Parrino and Starks, 2001; Denis and McConnell 2003; Gillan, 2006). Accordingly, this section contains two sub-sections: internal and external governance.

3.3.1 Internal governance

3.3.1.1 Ownership structure

Claessens, Djankov and Lang (2000) find that the existence of concentrated ownership, especially one ultimately controlling block holder, is pervasive among listed firms in East Asian countries such as Thailand, Malaysia, and South Korea. A similar situation occurs in China. Chen, Firth and Xu (2009) present evidence that the median of the largest shareholder's holding was 42.61 per cent at the end of 2004, but the median of the second largest shareholder's holding was just 5 per cent, and the third merely 1.89 per cent. There are few listed firms ultimately controlled by private investors. Additionally, unlike developed countries, managerial and employee shareholdings in China are extremely small. Also, due to the limit on non-institutional foreign investors, only a few listed companies have shares held by foreign investors. At the end of 2004, management, foreign, and employee shares represented less than

[9] The state regulatory system has been discussed in Section 2.1.

2 per cent of the listed firms' outstanding shares, so these investors do not constitute major voting blocks (Chen, Firth and Xu, 2009). Managerial share ownership is typically less than 1 per cent of the total shares on issue (Wei, Xie and Zhang, 2005).

According to the literature, the main agency problem under a diffused ownership structure is the conflict between management and shareholders, whereas the central agency problem under a concentrated ownership structure is the exploitation of minority interests by controlling block holders. Because the controlling shareholders have enough shareholdings to appoint or monitor managers, the agency problem between controlling shareholders and managers in China would not be as acute as that in the US. On the other hand, the conflict of interest between controlling and minority shareholders has been exacerbated in China because the shares of listed firms were split into non-tradable shares held by controlling shareholders and tradable shares held by minority shareholders (Zou et al., 2008).

Before 1998, an individual investor could hold no more than 0.5 per cent of total shares outstanding of any listed firm[10]. According to the report of the Chinese Security Depository and Clearing Corporation Limited, there were approximately 132 million A-share accounts and 2.44 million B-share accounts in the Chinese stock market by 21 August 2009. The shares held by individual investors are extremely diffused. In addition, because small investors fail to attend shareholder general

[10] Article 46, Provisional Rule on Stock Issuance and Trading issued by the CSRC, 1993.

meetings and exercise their voting rights, and the largest shareholder holds on average 84 per cent of the voting shares present at general shareholder meetings, the shareholdings of all block shareholders who attend the meetings constitute an average 93 per cent of the voting shares (Chen, Firth and Xu, 2009). Moreover, Xu and Wang (1999) and Qi, Wu and Zhang (2000) point out that the negligible fraction of shares owned by individual investors and the absence of a proxy voting procedure encourages individual investors to play the role of free-riders and short-term speculators. They also provide evidence that the proportion of shares held by individuals (that is, tradable A-shares before non-tradable share reform) is negatively associated with firm value.

Researchers have tested the effect of concentrated ownership structures on listed firms' performance and other corporate factors. Liu and Lu (2007) and Lin, Ma and Su (2009) report a non-linear relationship between the largest shareholder's holdings and firms' efficiency. They argue that the largest shareholder's opportunistic behaviour increases as his interest in the company increases. However, when the largest shareholder' holding reaches a certain level, the incentive to divert the firm's wealth may decrease, since the net gain of 'tunnelling' is no longer significant. Further, Tian and Estrin (2008) find a U-shaped relationship between government ownership and firms' corporate value as measured by Tobin's Q and return on assets (ROA). They argue that the relationship between government ownership and firm value is not a simple one and that a firm's corporate value increases when government ownership

is above a certain threshold. Contrary to this, Chen, Firth and Xu (2009) find the existence of an alignment effect: the larger the holding of the largest shareholder, the better the firm's performance.

Some researchers have reported a positive relationship between non-controlling shareholders' holdings on firm valuation and other corporate factors. For instance, Berkman, Cole and Fu (2009) argue that non-controlling block holders (ranked from 2 to 10 largest) have the strongest incentives to monitor the controlling block holder and prevent tunnelling. Qiu and Yao (2009) find that the higher the shareholding of non-controlling block holders (from 2 to 10 largest), the better the firm performance. These findings are consistent with the literature that suggests that dispersed ownership can reduce the agency conflict between controlling and minority shareholders. There are some studies that have tested the significance of managerial shareholdings in China. Most of them report positive results and confirm managerial shareholdings as an effective corporate governance instrument. Gao and Kling (2008) report that managers' shareholdings are an effective governance mechanism for mitigating tunnelling activities, although the economic significance is small. Chen (2001) and Li et al. (2005) suggest that managerial shareholdings have a positive effect on firm performance. To the contrary, Gul and Zhao (2001) argue that managerial shareholdings have no significant positive impact on listed firms' performance. Firth, Fung and Rui (2007a) argue that managerial ownership is not likely to influence accounting quality. Although managerial shareholdings have been widely regarded as

a useful corporate governance mechanism in western nations, given their small magnitude in China and the strong connections between firm management and the controlling shareholder (the state), the importance of this group of studies is limited.

3.3.1.2 Supervisory boards

Unlike in the US, China has adopted a two-tier board structure. The main characteristic of this structure is the existence of a board of supervisors. Since the Company Law was enacted in 1994, listed firms are required to establish a board of supervisors, which monitors the board of directors and reports to the general shareholders meeting. The board of supervisors for listed firms has to have at least three members, of which at least one is elected by employees and at least one represents shareholders. The board of supervisors should be independent of the board of directors, and thus, directors, managers, and financial officers cannot be supervisors.

The primary responsibilities of supervisors include monitoring managerial behaviour and the decisions made by managers, directors, and other executives; reviewing and auditing the reports provided by directors; and overseeing firm's assets. In addition, according to 'The code of corporate governance for listed companies in China' (issued by the CSRC on 7 January 2002), the lead duty of the board of supervisors is to supervise the corporate finance of listed firms. They are also

responsible for the appropriateness and accuracy of the company's financial statements. However, the board of supervisors has not been given the right to vote on executive decisions and the right to elect directors, managers, and financial officers. Without these rights, supervisors cannot perform their supervisory duties well. Additionally, most of the chairmen of supervisory boards in government-controlled listed firms (which dominate the Chinese stock markets as mentioned earlier) are communist party secretaries who usually lack professional expertise and appropriate experience. Therefore, most literature suggests that the board of supervisors is more of a decorative division than an effective committee. For instance, Chen, Firth and Xu (2009) find that supervisory boards cannot contribute significantly to firm efficiency.

3.3.1.3 Independent directors

In order to improve the level of listed firms' corporate governance and offer minority investors better protection, the CSRC issued 'Guidelines for Introducing Independent Directors to the Board of Directors of Listed Companies' in 2001. The guidelines are mandatory and required all listed firms to have at least two independent directors on their boards by 30 June 2002, and at least one-third of the board members had to be independent directors by 30 June 2003. Additionally, the Guidelines established rules to ensure the independence of the independent directors. The independent director system can be treated as a complement to the board of supervisors as the independent directors are eligible to vote on managerial and

financial decisions. These decisions can relate to listed firms' merger and acquisition activities, related party transactions, major investments, information disclosure, and financial statements.

It has been demonstrated through empirical studies that independent directors are an effective corporate governance mechanism in developed countries. Weisbach (1988) finds that boards dominated by outsiders have a greater chance of forcing the resignation of poorly-performing CEOs. Rosenstein and Wyatt (1990) suggest that the market usually reacts positively to announcements of the appointment of an outside director. However, the literature on the effects of independent directors in China is mixed. Fan, Lau and Young (2007) find that independent directors have a positive effect on CEO monitoring. Kato and Long (2006a) find that independent directors strengthen the linkage between firm performance and CEO turnover. To the contrary, Qiu and Yao (2009) suggest that outside directors are not really independent and give evidence that independent directors did not positively affect firm performance before or after the non-tradable share reform. Further, Liao, Sun and Young (2009a) report that Chinese firms implement board independence by adding extra members instead of removing inside directors, except in the case where board size (before the recruitment of independent directors) was already too large. Further, Liao, Sun and Young (2009b) report that 13.9 per cent of independent directors are politically connected with the managers or shareholders. As such, it is crucial to ensure the independence of independent directors in China.

3.3.1.4 CEO duality and CEO compensation

Before privatization, State-owned enterprises (SOEs) did not have boards of directors; and hence the CEOs (also called general managers) were appointed and supervised by the state. Today, many CEOs of listed firms are strongly politically connected as the majority of listed firms are directly or indirectly controlled by the state. Fan, Wong and Zhang (2007) report that approximately 25 per cent of CEOs were previously, or are currently, government officers. Since economic reform began in 1979, the state has transformed traditional SOEs to joint-stock companies. With the implementation of the 1994 Company Law, joint-stock companies were required to establish boards of directors. The chairman of the board is required to be democratically elected by its members and the appointment of the CEO must be approved by more than 50 per cent of board members[11]. However, whether the chairman can also hold the position of CEO is not an issue according to the Company Law or CSRC regulations. The literature reports contradictory opinions on CEO duality in developed countries. Some suggest that splitting the board chair and CEO provides more effective monitoring and control of the CEO; and firms that separate the two positions outperform those that do not (for example, Rechner and Dalton 1991). However, others argue that CEO duality establishes strong and unambiguous leadership and increases board efficiency. It is argued that firms with CEO duality can make better and faster decisions and hence outperform those without CEO duality (for

[11] Article 110, Company Law, 2006.

example, Donaldson and Davis 1991). There is little research on CEO duality in China. One view about CEO duality is that, increasingly, listed firms are inclined to split the positions of chairman and CEO. Fan, Lau and Young (2007) suggest that there is a gradual decoupling of the positions. Chen, Firth and Xu (2009) find that the proportion of CEO duality in listed firms has fallen from 27.3 per cent to 13.8 per cent over the period from 1999 to 2002; but they also report that CEO duality has a statistically insignificant impact on firm efficiency. However, Bai et al. (2004) report a negative relationship between CEO duality and firm performance. Further, Kato and Long (2006a) find that CEO duality reduces the probability of CEO turnover.

Before the economic reform, the pay differential between CEOs (or general managers) and unskilled workers was fairly small. There were no incentive schemes to motivate managers, nor were managers allowed to share in the profits generated. Managers were government agents and their appointments were controlled by the administrative and communist party bureaucrats, and compensation was determined by the manager's rank within the civil service (Firth, Fung and Rui, 2006). The other reason why incentive schemes in SOEs were weak was that satisfying the interests of government instead of improving economic performance was usually the key factor in assessing the managers of SOEs (Qian, 1995). Firms with substantial government ownership still have lower CEO compensation than privatized firms or firms with higher private ownership (Firth, Fung and Rui, 2007b). Kato and Long (2006b) find that the average annual salary of general managers of listed firms was US$12,000

during the period from 1998 to 2002. However, as Tian and Estrin (2007) point out, most of the available perquisites (for example, dining, communication, transportation, and entertainment for a senior manager's family) are not reported as part of the annual income. Notwithstanding, following the establishment of stock markets and expansion of the private sector, performance-based pay plans have dominated CEO compensation schemes of listed companies. Article 52, Section 6, Chapter 3 of 'The code of corporate governance for listed companies in China', which was issued by the CSRC on 7 January 2002, requires listed firms to establish a remuneration committee. Articles 69–72, Section 1, Chapter 5 of the code advocates listed firms adopting performance-based compensation for directors and top managers.

The compensation plans for CEOs are determined by the board of directors, while compensation schemes for directors are designed by the board and approved at shareholder meetings. The literature suggests that reasonable CEO compensation can exert a positive impact on firm performance in developed countries. For instance, Kaplan (1994) finds that top executive compensation is positively related to a firm's earnings and stock returns in Japan and the US. However, researchers have mixed opinions about the effect of incentive-based compensation on firm performance and other corporate factors in China. Byers, Fields and Fraser (2008) find CEO incentive based pay to be significantly and negatively correlated with abnormal returns on announcement of loans. They interpret this finding to imply that investors tend to believe that incentive-based CEO compensation schemes are an effective corporate

governance mechanism and firms with less CEO incentive based pay need more monitoring from banks. However, Liu and Otsuka (2004) report that the incentive-based reward system has not brought the expected improvements in productivity. Firth, Fung and Rui (2006) report that the link between firm profitability and CEO compensation is weak for firms with State agencies as the major shareholder, and they establish that the magnitude of the rewards is too small to be effective. Firth, Fung and Rui (2006) also argue that CEO compensation policy is used more as an instrument to achieve the dominant shareholders' objectives under the current concentrated ownership structure. Moreover, Firth, Fung and Rui (2007b) find no association between CEO's pay and firms' stock returns.

3.3.1.5 Audit committee

The audit committee was introduced to Chinese listed firms by the "*The code of corporate governance for listed companies in China*" (2002). Article 52, Section 6, Chapter 3 requires listed firm to set up a strategy committee, nomination committee, remuneration committee and auditing committee. The majority of nomination committee, remuneration committee and auditing committee members must be independent directors, and the convener of these committees must be an independent director. The responsibilities of audit committees include the following: 1) propose to hire or replace external audit organizations; 2) oversee the internal audit rules and their enforcement; 3) in charge of the communication between internal and external

audit; 4) examine firm's financial statements and disclosure; and 5) inspect firm's internal control systems[12]. These responsibilities are consistent with the literature about duties of audit committee. For instance, DeZoort et al. (2002) conclude that audit committee oversight includes financial reporting, internal controls to assess risk and auditor activity. However, the Code requires an audit committee to be established on a "comply or explain" basis. Chen and Cheng (2007) report that many listed companies have taken advantage of this voluntary compliance with the requirement and only a few listed companies set an audit committee within the first year after the publication of the Code.

The main debate about the effectiveness of audit committees in China is whether or not, or to what extent, the committee can be independent. In compliance with the "*The code of corporate governance for listed companies in China*" (2002), State-owned Assets Supervision and Administration Commission (SASAC) issued the *"Provision for Internal Auditing Management in SOEs owned by the central government"* on October 2004. This provision requires SOEs owned by the central government to set up an independent audit committee. Lin, Hutchinson and Percy (2009) find that 31 firms (67.4% of the total sample) have at least one government officer on the audit committee when examining the top 50 Chinese firms listed in Hong Kong from 2006 to 2007. The percentage of the audit committee members who are government officer is, on average, 27.7%. Therefore, even though these

[12] Article 54, Section 6, Chapter 3 "*The code of corporate governance for listed companies in China*" (2002)

government officers are classified as "independent" members of the board, their alliance is more likely to be with the State, a substantial shareholder of the firm (Lin, Hutchinson and Percy, 2009). Moreover, most literature argues that the impact of the audit committee on listed firms' performance and other corporate is weak. Wei (2007) argues that the audit committee has no significant effect on firm performance. Lin, Xiao and Tang (2008) report that operations of audit committee in practice are ineffective even though a vast majority of Chinese listed firms have set up audit committees

3.3.2 External governance

3.3.2.1 Takeover markets

There are three primary external governance mechanisms discussed in the literature: takeover markets, bank monitoring and the legal infrastructure. An active corporate control market is considered to be essential for the efficient allocation of resources (Bai et al., 2004). Companies with unsatisfactory performance are frequently disciplined by shareholders' selling or by subsequent takeovers when there is a dynamic takeover market. The market endows capable managers to gain control of sufficient shares in a short period of time to remove inefficient managers (Bai et al., 2004).

Though external corporate control market is shown by the literature to be an

effective governance mechanism in western countries, this market is still not well developed in China. As mentioned previously, shares of Chinese listed firms are split into tradable and non-tradable shares. Before the non-tradable share reform, state-owned shares could only be transferred privately to other government agencies, legal entities, and foreign investing firms subject to the state approval (SASAC, 1997). It was almost impossible for firms to obtain the control rights of another listed firm through the purchasing of tradable shares on the secondary market as on average only one third of total shares of listed firms were tradable. Biding companies could hardly acquire the target companies without the approval of the state before the non-tradable share reform. Chi, Sun and Young (2011) report that tender offers in China are very rare and target firms are often not listed. They find strong political connection between acquiring and target firms in most of Chinese M&As and political advantages of acquiring firms have a significantly positive impact on the acquiring firm's market performance. Due to the special characteristics of Chinese M&A caused by the share segmentation system, there is little literature about the effect of the takeover market as an external corporate governance mechanism in China. Nonetheless, the non-tradable share reform was launched in April 2005. As such, the corporate control market can become more active, and makes a significant and positive impact on the corporate governance in China.

3.3.2.2 Bank monitoring

Banks have been treated as delegated monitors and effective information producers by scholars. Bank borrowing can enhance firm value by providing effective monitoring to borrowers. Ahn and Choi (2009) provide evidence that bank reputation, the magnitude of loans and the length of the loan maturity have a strong impact on reducing firms' earnings management activities in the US. Byers, Fields and Fraser (2008) report an inverse relationship between loan announcement abnormal returns and internal governance variables and give evidence that banks can be substitute monitors for internal governance mechanisms like independent (outside) directors, CEO incentive-based pay and director shareholdings. Further, Gilson (1990) suggests that creditors take on the dominant role of shareholders in disciplining the managers and substituting incumbent executives when firms are under financial stress. Therefore, bank loans can also enhance shareholders' incentives of monitoring the board and managers as the control right of firm would shift to creditors and hence transfer the private benefits in financial distress.

Due to the lack of an efficient and integrated corporate bond market, bank loans are still the dominated way of borrowing in China. Until the present, state-owned big four banks are still the major players in the bank loan market. Tian and Estrin (2007) argue that banks owned by the government would not provide effective governance to the borrowers as the state usually sacrifices financial interests to guarantee social and

political interests. The soft budget constraint[13] is the key obstacle that prevents bank from providing significant monitoring to listed firms since the state is still the ultimate owner of both major banks and most listed firms. In most cases banks are incapable of taking over an SOE in financial distress. This would be one of key reasons which lead to the large amount of non-performing loans of Chinese banks[14].

Like banks and other institutional investors, mutual funds are regarded as an external corporate governance mechanism. Thanks to their large shareholdings, mutual funds are able to provide significant monitoring to listed firms. They have the power of influencing the earnings management activities and dividend policies of listed firms. As such, in Chapters 5 and 6, this thesis empirically investigates the way that mutual funds oversee the financial reporting and influence the dividend policies of listed firms in China.

3.4 Earnings management

3.4.1 Earnings management definition and earnings management in the US

Earnings management is a behaviour whereby the managers of listed companies alter accounting numbers to either mislead some stakeholders on the companies'

[13] Soft budget constraint is coined by Kornai (1979) to describe the refinancing money-losing enterprises by the State in socialist economies.

[14] Ernst & Young reported the non-performing loans were over 900 billion US dollars in 2006.

underlying performance or to influence contractual outcomes that are dependent on the said numbers (Healy and Wahlen, 1999). Through earnings management, managers can shift income from future accounting periods to the current accounting period, or defer current income to future periods, without violating accounting principles. There are a number of ways in which managers can manipulate earnings and influence financial statements without violating accounting rules. For instance, managers can estimate the expected lives or salvage values of long-term assets; choose among accepted accounting methods (i.e. straight-line and accelerated depreciation methods, Last In First Out, First In First Out, or weighted average inventory cost methods); and make or defer corporate expenditure (i.e. R&D, advertisement and maintenance) (Healy and Wahlen, 1999).

In the US, earnings management activities by listed companies' managers are primarily related to job tenure and executive compensation. Managers prefer to smooth earnings if their job tenures depend on reported profits, as such they may borrow future earnings in bad times or stockpile current earnings in good times for periods when poor conditions are expected (Fudenberg and Tirole, 1995). Cheng and Warfield (2005) report that stock-based compensation and ownership can provide managers with motivation for earnings management as this can increase short-term stock prices and benefit managers. Bergstresser and Philippon (2006) further argue that managers whose overall compensation is more sensitive to the company's stock price would have more incentives for managing earnings. Chi and Gupta (2009) suggest that share

price overvaluation intensifies managers' income-increasing behaviours, as their compensation and career would be negatively affected by market beliefs that they could not deliver the expected earnings to justify the share price.

Besides concern about compensation and job tenure, mangers may manipulate earnings before specific corporate events in which financial statements play a significant role. DeAngelo (1988) and Perry and Williams (1994) argue that managers may understate reported earnings by manipulating the discretionary accruals before the announcement of management buyout offers, so that they can take over companies at lower prices. DeFond and Jiambalvo (1994) argue that firms tend to manage accruals to increase their reported earnings when facing debt covenant violation. Rangan (1998) and Teoh, Welch and Wong (1998a) report that listed companies managed their earnings upwards before the Seasoned Equity Offerings (SEOs), in order to increase the offering price and attract more investors. Moreover, Chung, Firth and Kim (2002) conclude that earnings manipulation could be widely used in labour union wage negotiations, valuation of IPOs, takeovers, management buyouts and debt covenants.

3.4.2 Earnings management in China

As mentioned earlier, in contrast to the dispersed ownership structure in common law nations, concentrated ownership is more common among Chinese listed firms, especially those controlled by the Chinese central and local governments. In this

situation, controlling shareholders are capable of appointing managers and making other major corporate decisions. Therefore, incentives of managers to manage earnings in China are not as strong as that in the US, and earnings management is more likely to be facilitated for the interests of controlling shareholders. The literature shows that the earnings management activities usually occur in China before initial public offerings (IPOs), when facing the risk of being de-listed, and before seasoned equity offerings (especially rights issues) (Chen and Yuan, 2004; Yu, Du and Sun, 2006; Liu and Lu, 2007; Kao, Wu and Yang, 2009).

3.4.3 Earnings management before the IPOs

It is not surprising that China's listed companies engage in serious earnings management before their IPOs, as reported profit is a government-stated criterion for going public, and also the main determinant of offering prices. Thus, Chinese companies prefer to manipulate the earnings to increase their chances of going public and to increase their offering prices. Aharony, Lee and Wong (2000) investigate the financial reporting of China's B- and H-share companies, and find that the mean values of companies' ROA peaked in IPO years and declined thereafter. Kao, Wu and Yang (2009) also find that, on average, China's listed companies report a decline in post-IPO profitability and experience poor long-run stock performance. Further, they find that listed companies with better pricing-period accounting performance during IPOs have larger declines in post-IPO profitability, lower first-day stock returns, and worse

post-IPO stock performance (Kao, Wu and Yang 2009). Aharony, Lee and Wong (2000) and Kao, Wu and Yang (2009) attribute the post-IPO underperformance to serious earnings management by the companies before their IPOs, and argue that this is induced by IPO pricing regulations based on reported earnings. Chen, Jian and Xu (2009) argue that listed firms divert the proceeds from the IPOs and rights issues to controlling shareholders through payment of cash dividends. The ability of such tunnelling may provide the controlling shareholders with more incentives for earnings management before IPOs, as this could drive up IPO prices, and hence, help the listed firms raise more capital.

3.4.4 Earnings management when facing the risk of being de-listed

After listing on the Chinese stock exchange, one of the primary motives for earnings management is to avoid being de-listed. According to the CSRC, if a listed company reports a net loss for a continuous two year period, it will be designated the title of "ST" (Special Treatment). If a company reports a net loss for a continuous three year period, it will be designated the title of "*ST", which indicates a warning of being de-listed. Listed companies are valuable resources for capital-raising, not only for shareholders, but also the central and local governments. Therefore, controlling shareholders are reluctant to see companies be de-listed, and have strong incentives to manipulate earnings when facing such a seriously financial risk. According to the empirical findings of Liu and Lu (2007), listed companies that escape the risk of

de-listing engage in more serious earnings management than companies that are de-listed. Therefore, these listed companies could have managed their reported profits upwards to prevent de-listing (Liu and Lu, 2007).

3.4.5 Earnings management before rights issues

According to the requirements of the CSRC, permission for rights issues is determined primarily by the listed companies' accounting numbers, especially their return on equity (ROE). A listed company can only launch a rights issue if its average ROE is more than 6%[15] over the previous three years. As such, listed companies have an incentive to manipulate earnings to meet the requirements for right issues, as this is an ideal way for them to raise funds. According to Yu, Du and Sun (2006), listed companies prefer to raise new equity rather than to borrow, as the corporate debt market is ineffective and bank loans are restrictive in many ways. Additionally, although seasoned equity offerings (SEOs) have become popular in recent years, this method of capital-raising was particularly difficult through the 1990s and early 2000s due to regulatory constraints. Hence, rights issues have been the primary way in which listed firms raise capital from the stock market during the past decade. A number of listed companies have even had rights issues within three years of their listings (Yu, Du and Sun, 2006). Chen and Yuan (2004), Haw et al. (2005) and Yu, Du and Sun (2006)

[15] The requirement on ROE varies slightly over time. During the period 1994-1998, the ROE threshold for rights issues was an average of 10% for the previous three years. From 1998-2000, besides an average ROE above 10%, the rights issuing company had to have ROE not less than 6% for each of the previous three years. After 2001, the ROE threshold changed to be an average of 6% for the past three years.

find that rights issuing firms have heavy concentrations of ROEs that just exceed the ROE threshold (10% before 2001 and 6% after 2001), and argue that rights issuing companies manipulate reported profits (measured by the non-core income) upwards to meet ROE benchmarks.

By manipulating the earnings, listed firms not only meet the ROE threshold for rights issues, but also drive up the issuing prices and raise more capital. It is noteworthy that some of the controlling, and other large shareholders are unwilling to subscribe to rights issues in China, as the shares they purchase would be non-tradable[16] (Huang, Shen and Sun, 2011). Consequently, the majority of the rights issues are subscribed by tradable shareholders, who are mainly outside individual investors. As such, the controlling shareholders would be motivated to adjust the reported earnings upwards, so that they could raise more capital from the individual shareholders, whose shareholdings are too small and diffuse to monitor the usage of the raised capital.

3.4.6 Ownership structure and earnings management

Due to the concentrated ownership structure, listed firms' managers mainly manipulate earnings for controlling shareholders' benefit. Therefore, earnings

[16] After the non-tradable share reform which was launched in 2005, around 80% of the non-tradable shares become tradable at the end of 2009. However, the CSRC only allows these shares to enter the stock markets gradually.

management activities of listed companies with different ownership structure, or controlled by different types of controlling shareholders (i.e. state-controlled vs. privately controlled) may differ. Liu and Lu (2007) report that agency conflict[17] between controlling shareholders and minority shareholders account for a significant portion of earnings management in China. The controlling shareholders, who usually hold non-tradable shares and cannot benefit from share price appreciation, have strong incentives to expropriate the wealth of listed companies and to mask true company performance to conceal this expropriation from minority shareholders (Liu and Lu, 2007). Liu and Lu argue that the largest shareholder is more likely to expropriate the firm's wealth and manipulate the earnings when his interest in the company increases. However, when his interest reaches a certain level, his opportunistic behaviour may decrease, as the net gain of tunnelling is not significant any more.

In addition to conflict between controlling shareholders and minority shareholders, the political connection between the listed companies and the government is another major factor affecting earnings management. Aharony, Lee and Wong (2000) find that IPO companies with more government protection have a higher chance of being listed on the stock exchanges and therefore have less incentive to manipulate earnings. Furthermore, some studies report that state-controlled listed firms engage in less earnings management activities than privately-controlled listed firms (e.g. Bo and Wu,

17 Literature suggests that agency conflict under concentrated ownership structure is the conflict between controlling shareholders and minority shareholders (e.g. Claessens, Djankov and Lang, 2000; La Porta et al., 2000). These conflicts are further exacerbated in China because the shares of listed companies are split into non-tradable shares held by controlling shareholders and tradable shares held by minority shareholders (Zou et al., 2008).

2009). These studies suggest that the state-controlled firms get more financial support from the government, and hence can relatively easily escape financial risk. Moreover, state shareholders do not pay as much attention to the share price as private shareholders, as most state-owned shares are not tradable. Another reason why state-controlled listed firms are less likely to manipulate earnings could be that the state shareholders (especially the central government and its agencies) have more concern about the transparency and volatility of the stock markets.

3.4.7 How to restrict listed companies' earnings management in China

3.4.7.1 Corporate governance mechanisms

Good corporate governance can help mitigate listed companies' earnings management activities in the US (e.g. Shleifer and Vishny, 1997; Xie, Davidson and Dadalt, 2003; Gillan, 2006). Some studies have tested the impact of corporate governance mechanisms on listed firms' earnings management in China. For instance, Firth, Fung and Rui (2007a) find that foreign shareholder's ownership, and large or active supervisory boards, may decrease the level of corporate earnings management. Liu and Lu (2007) report that outside/independent directors can restrict listed firms' earnings management, while cross-listed firms, which have shares listed on the Hong Kong Stock Exchange, or have issued B-shares, usually have lower levels of earnings management. However, other corporate governance mechanisms, such as

non-controlling large shareholders' ownership (the sum of the second to the tenth largest shareholders' ownership), the type of the auditing firm (particularly whether they are one of the 'big-four' multinational auditing firms), the auditors' opinions, the managerial ownership, and whether the CEO also holds the position of board chair, are reported to be less likely to restrict listed firms from manipulation of earnings (Liu and Lu, 2007; Bo and Wu, 2009).

3.4.7.2 Supervision by regulatory bodies

Regulatory bodies can play a significant role in monitoring listed companies' financial reporting. However, this may not always be the case in China. As the state-controlled listed firms dominate the stock markets, regulatory bodies may face a dilemma when supervising listed companies' opportunistic behaviours (e.g. earnings management). On the one hand, earnings management would harm the accounting transparency of the listed firm and harm the benefits of minority shareholders (mainly individual investors). Based on this, regulators have a strong propensity to minimize earnings management, and other opportunistic behaviours, for the sake of the stability and development of the stock markets.

On the other hand, these companies can help the government achieve both political and social objectives (e.g. boosting government reputation, maintaining employment rate, supporting social welfare, paying taxes, financing public projects,

etc.). The regulatory bodies may even be willing to help state-controlled firms in protected industries get listed on the stock exchanges (Aharony, Lee and Wong, 2000). In this case, the regulators could be reluctant to heavily punish listed firms that engage in serious financial reporting frauds or to de-list the listed firms with continuous losses. Chen and Yuan (2004) suggest that, even though the regulators' ability to detect companies' earnings management activities have improved over time, many listed companies still gain rights issue approval through manipulating non-core income, which is easily detected. Consequently, it is unlikely that the regulators will significantly restrict earnings management activities of companies (especially SOEs) when these companies launch IPOs or rights issues, or are facing the risk of being de-listed.

3.4.8 Institutional investors and earnings management

3.4.8.1 Institutional investors and earnings management in the US

The literature holds mixed opinions on the relation between institutional investors and listed firms' earnings management. Some suggest that institutional investors are transient owners who are overly focused on short-term earnings and may encourage short-term managerial behaviour in the US (e.g. Graves and Waddock, 1990; Froot, Perold and Setin, 1992). This is based on the belief that the stock market may not realize that increased earnings are due to earnings management, and that the

institutions can liquidate their shares before earnings decline or before the market is aware of it (Froot, Perold and Setin, 1992).

However, Chung, Firth and Kim (2002) suggest that institutions would have more resources and incentives to monitor managerial decisions when their holdings in listed firms become more substantial. Chung, Firth and Kim (2002) argue that institutional investors do not desire income smoothing because it can obfuscate the underlying trends and profitability of firms. They find that institutions can deter earnings management by managers, and significantly inhibit managers from manipulating earnings in the US. It is noteworthy that these studies do not consider that institutional investors with different investment goals may behave in different ways when engaging in listed firms' earnings management.

Guercio and Hawkins (1999) place their focus on pension funds, and find that long-term institutional investors, like pension funds, could constrain managerial discretion in firms that have both incentives and the capacity to manage earnings to meet earnings targets. Matsumoto (2002) investigates the incentives of managers to avoid negative earnings surprises, and finds that listed firms with higher transient institutional ownership are more likely to use positive discretionary accruals to increase current earnings. Koh (2007) classifies institutions into two groups: short-term (transient) and long-term investors, and associates institutional ownership type with the earnings management activities of listed firms. Koh (2007) finds that

long-term focused institutional investors are likely to constrain accruals management in the US; while short-term institutions encourage earnings management when firms need to manage earnings to achieve their earnings targets.

3.4.8.2 Institutional investors and earnings management in China

There are a few studies in Chinese language that investigate the relationship between institutional ownership and earnings management in China. Huang (2009) reports that institutional investors can oversee listed firms' accounting behaviours, and restrain earnings management activities, when they hold more than 6% of listed firms' total shares. It is because the cost of selling is larger than the cost of participating in corporate decisions, when institutional investors hold large stake in listed firms. However, since mutual funds can only invest in the tradable shares, it would be relatively hard for them to hold more than 6% of any listed firm's total number of shares. Bo and Wu (2009) find that institutional investors are capable of reducing the level of listed firms' earnings management in China. They further report that the impact of institutions on earnings management is stronger in non-state controlled firms than in state-controlled firms. These studies, which mainly use aggregate institutional ownership, so far has not concerned the holding period and trading strategies of Chinese institutions. According to the findings of Koh (2007) on the institutional investors in the US, the failure to distinguish institutional ownership may bias the research results. As such, in contrast to existing literature, Chapter 5

(Essay Two) focuses on mutual funds and investigates the effect of long-term and short-term mutual funds on earnings management in China.

3.5 Dividends

3.5.1 The dividend payouts in the US and other developed nations

3.5.1.1 Cash dividends

Dividend has been an issue of interest in the finance literature since the evolvement of the cash dividend puzzle of Modigliani and Miller (1958, 1961). Shareholders should be indifferent to either getting the dividends or having them re-invested in listed firms because they own the firms. If this is the case, why do the listed firms pay dividends to the shareholders? The most cited explanation on the cash dividend puzzle is based on the agency cost perspectives. Easterbrook (1984) argues that cash dividend payout may reduce the agency cost, as dividend payouts increase the likelihood of using external financing to monitor the managers at relatively lower cost. Furthermore, Jensen (1986) argues that the managers may act in their own interests at the expense of the shareholders by spending cash for their own benefits. Therefore, cash dividend payouts can decrease the source of cash under the manager's control.

Another agency explanation is based on the agency conflict between the controlling and the minority (or individual) shareholders. When the controlling shareholders gain nearly full control of listed firms, they are capable of taking advantage of the minority shareholders by expropriating the wealth of the listed firms (Shleifer and Vishny, 1986, 1997; Johnson et al., 2000). In addition, cash dividend payouts could prevent the controlling shareholders from extracting private benefits at the expense of the minority shareholders, thus, listed firms in countries with better protection of the minority shareholders are found to pay more cash dividends (La Porta et al., 2000a, b). However, excessive cash dividends can have a negative impact on listed firms. If a listed firm pays too much cash to its shareholders, it may be short of cash for future investment opportunities.

Another major view of the cash dividend payouts is the signalling-effect. Miller and Modigliani (1961), John and Williams (1985) and Miller and Rock (1985) suggest that managers pay cash dividends as a credible signal to the market for the prediction of future earnings and increase in the future cash flows in the US. The signalling-effect is also supported by Kalay and Loewenstein (1985) and Nissim and Ziv (2001). Both studies report a positive relationship between dividend changes and the listed firms' future earnings in the US.

3.5.1.2 Stock dividends

Stock dividend payment is regarded as being similar to stock splits in several aspects in the US and other developed nations. In practice, the terms of stock splits and stock dividends are often used interchangeably (Rankine and Stice, 1997). Stock splits and stock dividends have no impact on proportional ownership and future cash flows, and are both corporate events, in which the shareholders receive a certain number of new shares (Grinblatt, Masulis and Titman, 1984; Bechmann and Raaballe, 2007). However, there is at least one important difference between these two events. Bechmann and Raaballe (2007, P575) notes: "*In the case of a stock split, each old share is split into a number of new shares with a reduced par value, leaving the total share capital unchanged. In the case of a stock dividend, a number of new shares are received for each share owned. The new shares have the same par value as the old shares, whereby the total share capital increases proportionally with the size of the stock dividends.*"

Relative to stock splits, stock dividends are usually associated with a higher announcement effect (Rankine and Stice, 1997). The main purpose of managers paying stock dividends is to convey the listed companies' future perspective to the market (Grinblatt, Masulis and Titman, 1984; McNichols and Dravid, 1990; Bechmann and Raaballe, 2007). Baker and Phillips (1993) also suggest that managers believe stock dividend payments have a positive investor psychological impact and

investors regard stock dividend announcements as a positive signal of the listed companies' future performance and investment opportunities, because paying stock dividends can help listed companies retain cash for future investment.

On the contrary, Lakonishok and Lev (1987) argue that managers pay stock dividends because the listed companies lack future investment opportunities. Lakonishok and Lev (1987) state that stock dividend payment may signal a financial hardship rather than good future prospects to the market, especially when listed companies face cash shortage. Baker and Gallagher (1980) add that the main purpose of the managers paying stock dividends is to reduce the earnings and to decrease share prices. Accordingly, at decreased prices, the stock becomes more affordable and more attractive to investors.

3.5.2 The dividend payouts in China

3.5.2.1 Cash dividends

The signalling-effect is a major explanation for the cash dividend payouts of the listed firms in China. Cheng, Fung and Leung (2009) report that to a certain extent, paying cash dividend could provide a signalling-effect to the stock markets in China. The Chinese listed firms with higher earnings per share (EPS) are claimed to be more likely to pay cash dividends. Additionally, cash dividends may signal good corporate

governance in China. La Porta et al. (2000b) suggest that some listed firms may pay cash dividends to signal good corporate governance in countries without effective legal protection for the minority or the outside shareholders (communicate with the market that the controlling shareholders do not tunnel). Eun and Huang (2007) also argue that cash dividends signal shareholder-friendly corporate governance, thus the individual investors are willing to pay a premium for cash dividend-paying stocks in China.

According to the literature (e.g. Schleifer and Vishay, 1986), concentrated ownership structure can reduce the agency conflict between the shareholders and managers, because large shareholders can take a leadership role in monitoring the management. As such, the agency conflict between the shareholders and managers in China would not be as strong as that in the US, and may not be the major determinant for the payment of cash dividends. On the other hand, the split share structure could affect the cash dividend payout of the Chinese listed firms. The shares held by the controlling shareholders are usually non-tradable, whereas the shares held by the individual shareholders are tradable. The controlling shareholders usually could not benefit from the share price appreciation because their shares are not tradable in the stock markets. Therefore, the controlling shareholders would have strong incentives to find some other ways to benefit themselves, rather than driving up the share prices (Huang, Shen and Sun, 2011). Since the cash dividends may be the only legal cash flow that non-tradable shareholders could expect from the listed firms, they would

force the managers to pay (or pay more) cash dividends (Huang, Shen and Sun, 2011).

Large state-ownership is another main characteristic of Chinese listed firms that may significantly influence the listed firms' dividend policies. The state-controlled listed firms usually have more political obligations (e.g. supporting social welfare; financing the non-profitable divisions or public project). Accordingly, the state shareholders would be eager to receive more cash dividends from the listed firms to fulfil their political obligations (Zou et al., 2008; Chen, Jian and Xu, 2009).

In the early years of the Chinese stock markets, most listed firms preferred to retain cash, rather than to distribute it to the shareholders. Chen, Jian and Xu (2009) report that cash dividend payouts are highly skewed in China, in which only 47% of the listed firms pay cash dividends. In order to encourage listed firms to pay cash dividends, in 2001, the CSRC ruled that listed firms are not eligible to launch rights issues if the firms have not paid cash dividends for three consecutive years. The CSRC further issued "*Administrative Measures for the Issuance of Securities by Listed Companies*" on 8th May 2006. According to this measure, listed firms are not eligible to issue new shares (including both rights offering and seasoned equity offering) without paying at least 20% of attributable profits either in cash or stock dividends for three consecutive years. In 2008, the CSRC raised the required payout rate from 20% to 30%.

3.5.2.2 Stock dividends

Stock dividend is the other option for listed firms to pay dividends in China. The literature regarding the stock dividend of the Chinese listed firms is limited. Some studies report that there is a negative relation between the cash and the stock dividends, which presents a substitution effect in China (e.g. Wei and Xiao, 2009; Anderson et al., 2011). Anderson et al. (2011) argue that firms with good investment opportunities are likely to pay more stock dividends to compensate the shareholders. Chen, Firth and Gao (2002) find that significant abnormal returns occur when the earnings and stock dividend announcements follow the same directions (either increase or decrease). Therefore, to a certain extent, the markets may regard stock dividend payment as a signal of future corporate earnings or performance.

The private or tradable shareholders are more willing to receive stock dividends as compared to the non-tradable or state shareholders who prefer cash dividends (e.g. Wei, Zhang and Xiao, 2004; Cheng, Fung and Leung, 2009). Stock dividend payment does not change the ownership structure but increases the total number of outstanding shares. It dilutes some financial ratios and decreases the share price to a more desirable level. The decreased share prices become more attractive to investors. Furthermore, stock dividend payments may provide shareholders with significant capital gains. Chen, Fung and Leung (2009) and Anderson et al. (2011) find that listed firms have positive abnormal returns surrounding the dividend announcements. Under

the current Chinese tax system, individual investors are not required to pay tax on capital gains. Accordingly, stock dividends are preferred by the tradable shareholders, most of which are the individual shareholders. Due to the preference differences between the non-tradable and tradable shareholders for dividend type, the managers of the listed companies may cater for the preferences of different shareholders when paying dividends in China (Wei, Zhang and Xiao, 2004).

3.5.3 Institutions and dividends

The literature on the relationship between the institutional investors and listed firms' dividend payouts is mixed. Allen, Bernardo and Welch (2000) argue that undervalued firms pay more dividends to attract institutional investors to signal their true value. Institutional investors are expert at revealing value and provide monitoring services in the US. According to Allen, Bernardo and Welch (2000), institutions prefer dividends for two major reasons. First, the institutions in the US are regulated by the *prudent man rule* and dividend payments provide prima facie evidence that an investment is prudent. Second, some institutions are taxed less heavily on dividends than the individual investors. Guo and Ni (2008) also find that institutional investors are likely to increase listed firms' dividend payout amounts in the US, due to the tax advantages of the institutional investors. Short, Zhang and Keasey (2002) report that the institutional investors may force listed firms to pay more cash dividends in the UK to reduce the agency costs. The institutions benefit also from tax advantages when

receiving dividends.

On the other hand, Grinstein and Michaely (2005) and Leary and Michaely (2011) find that institutional investors prefer to hold firms that pay cash dividends but with lower dividend payouts. Grinstein and Michaely (2005) argue that the institutions are not attracted to firms with high dividend payout ratios and would not increase their shareholdings to force the managers to pay more dividends in the US. Although institutions are more capable of monitoring and controlling management actions than the individual investors, they do not do so through dividend policy (Grinstein and Michaely, 2005). Hankins, Flannery and Nimalendran (2008) examine the allocations of institutions to dividend-paying stocks in the US and find that institutions have reduced their holdings of dividend-paying stocks since 1990s. Hankins, Flannery and Nimalendran (2008) argue that the decline of the preference of institutional investors for dividend-paying stocks is because the *prudent man rule* was replaced by the *prudent investor rule*, which is less stringent, in most states of the US during 1990s. Dahlquist and Robertsson (2001) examine the preferences of foreign institutional investors for the attributes of Swedish listed companies and find that foreign institutional investors prefer large firms with large cash position and paying low dividends. As the capital gain and dividend income are taxed at the same level in Sweden, Dahlquist and Robertsson (2001) argue that the preference of foreign institutional investors for lower dividends is due to the tax advantages for capital gains to dividend income in some foreign jurisdictions.

Due to the different institutional background (i.e. split share structure, large state stake, and different tax system), the empirical findings in the US and other developed nations may not apply to the Chinese markets. There are only a few studies in Chinese language that have provided empirical evidence on the relationship between institutional investors and dividend policies. Hu and Wu (2004) find that mutual funds prefer to hold the shares of listed firms that pay cash dividends. Wen and Wu (2007) find similar results that mutual funds prefer cash dividend-paying stocks. Wen and Wu (2007) further argue that although mutual funds prefer to invest in firms that pay cash dividends, they cannot significantly influence the cash dividend rates. It is noteworthy that these studies only employ aggregate mutual fund holdings and do not investigate the effect of mutual funds on stock dividends policies. This provides an opportunity to examine the relationship between mutual funds and both the cash and stock dividend payouts of listed firms by employing different mutual fund types. The empirical analysis is presented in Chapter 6.

Chapter 4 Mutual Funds' Investment Strategies and Their Preferences: Evidence from China

4.1 Introduction

This chapter investigates Chinese mutual funds' investment behaviours and preferences on the selection of portfolio firms. Recent studies argue that institutional investors differ from each other in terms of their investment strategies, and that different types of institutions impact on listed firms in different ways. For example, Porter (1992) suggests that only long-term institutional investors with a large stake in a corporation can monitor the management of listed firms. Based on institutional investors' past investment behaviours, Bushee (1998, 2001) empirically categorizes institutional investors in the US into three groups: dedicated institutions; transient institutions; and quasi-index institutions. Bushee (1998) finds that transient institutions force the listed firms' managers to reduce the Research and Development (R&D) investment to boost short-term earnings. Therefore, the classification of institutional investors can help researchers and investors understand the characteristics of institutional investors and their impact on listed firms.

Institutional investors are relatively new to the Chinese stock markets, but their growth has been rapid. Mutual funds are the first and major players among all types of institutional investors in China. Unlike mutual funds in the US and other developed

markets, Chinese mutual funds have less than twenty years of history, and are not constrained by as many regulations (e.g. prudent investor rule). There is little empirical evidence on Chinese mutual funds' investment behaviours, which leaves a number of interesting questions currently unanswered. Is there any heterogeneity in trading strategies across different mutual funds? What criteria do mutual funds with different goals and investment strategies use when selecting stocks to invest in? Do these criteria make economical sense? Is the development of mutual funds beneficial to individual investors and the corporate governance of listed firms as the Chinese government expected? This study fills these gaps in the literature and provides answers to these questions.

This study empirically examines Chinese mutual funds' trading strategies and categorizes the funds into three groups, based on their past investment behaviours, by following and adapting the factor and cluster analysis methodology of Bushee (2001). This methodology is also employed by Koh (2007) to categorize mutual funds in the US[18]. Existing studies regarding institutional investors' preferences mainly focus on the US (e.g. Gompers and Metrick, 2001; Woidtke 2002; Bennett, Sias and Starks, 2003) or cross-country analyses without Mainland China (e.g. Covrig, Lau and Ng, 2006; Ferreira and Matos, 2008). Due to the short history of Chinese mutual funds and the lack of effective regulations, the empirical evidence on the preferences of

[18] According to the academic journal ranking list of Australian Business Deans Council, both Bushee (1998) and Bushee (2001) were published on A* level academic journals, which are the highest ranking journals. Koh (2007) was published on an A level academic journal. The list can be found at: http://www.abdc.edu.au/3.43.0.0.1.0.htm

mutual funds in the US and other countries may not apply to Chinese mutual funds. As such, this study then further investigates the preferences of portfolio firm selection of mutual funds in general, and mutual funds of different types.

The remainder of this chapter is organized as follows: Section 4.2 classifies the mutual funds in China into three groups, using the factor and cluster analyses; Section 4.3 examines the determinants of different types of mutual funds' ownership in China; Section 4.4 provides various robustness tests; Section 4.5 is the conclusion.

4.2 Mutual fund classification in China

4.2.1 Methodology to classify the mutual funds

Following Bushee (2001), this study constructs eight variables to describe the mutual funds' past investment strategies, as follows. The first four variables are used to estimate an institution's portfolio turnover and holding period:

PT1 = Institution's quarterly portfolio turnover percentage (portfolio turnover using absolute value of change in total equity scaled by its net value of assets);

PT2 = Institution's quarterly portfolio turnover percentage using only sales transactions[19] scaled by its net value of assets;

STAB1 = Percentage of the institution's total holdings held continuously for one year

[19] Sales transactions are the shares of listed firms sold by mutual funds during each quarter.

(percentage of total value of holdings held for one year); and

STAB2 = Percentage of the institution's portfolio firms held continuously for one year (percentage of number of portfolio firms held for one year).

The other four variables are used to estimate the block size of institutional investment:

LBPH = Percentage of the institution's total holdings held in large blocks (percentage of total dollar holdings with 5% or more of listed firms' tradable shares);

LBPF = Percentage of the institution's portfolio firms held in large blocks (percentage of number of portfolio firms with 5% or more of listed firms' tradable shares);

CONC = Institution's average investment size in its portfolio firms (average investment per stock, total equity/number of stocks in portfolio); and

APH = Institution's average percentage ownership in its portfolio firms (average percentage of ownership in portfolio firms based on listed firms' tradable shares).

In this chapter, I have made some changes to Bushee's (2001) eight variables, according to the characteristics of Chinese mutual funds. In Bushee (2001), STAB1 and STAB2 measure the percentage of an institution's holdings continuously for eight quarters, while LBPH and LBPF measure the percentage of the institution's total shareholdings held in portfolio firms with a greater than 5% stake. As Chinese mutual funds are relatively new to the market, and do not usually hold shares of listed firms for as long as US institutions do, this study uses four quarters instead of eight to

measure STAB1 and STAB2. In addition, since mutual funds can only invest in the listed firms' tradable shares in China, the average ownership of mutual funds in listed firms in China would be lower than in the US. This study uses 5% of the listed firms' tradable shares as the criteria to calculate LBPF and LBPH. Also, APH estimates the average percentage of tradable shareholdings in portfolio firms, rather than total shareholdings. The rest of the methodology is similar to that employed by Bushee (2001) and Koh (2007). The quarterly values of the eight variables are averaged to obtain end-of-year average values.

Factor analysis is employed to identify common factors from the annual values of the eight variables. There are high correlations among some of the underlying variables used to describe the mutual funds' past investment behaviours. The factor analysis can account for the multicollinearity among these variables and is used to obtain a few common factors that explain the shared variance among them. Each common factor has a corresponding factor score, which can be used as a variable in subsequent cluster analysis. Cluster analysis assigns a set of observations into groups so that observations in the same group are more similar to each other than to those in other groups. Finally, mutual funds are classified into three groups using *k-means* cluster analysis on the factor scores derived from the factor analysis[20].

[20] The detailed information on this methodology can be found in Bushee (2001).

4.2.2 Sample selection

The *Regulation of Information Disclosure of Security Investment Funds* enacted 1st July 2004, requires security investment funds to announce their quarterly, semi-annual, and annual report publicly (Act 5, Section 2). Thus, the sample period of this research is from September 2004 to December 2009. The data is obtained from the China Centre for Economic Research database (CCERDATA) and the China Stock Market Accounting Research database (CSMAR). The sample contains the mutual funds' top-ten largest ownership in stocks at the end of each quarter during the sample period[21].

4.2.3 Mutual fund classification result

Panel A of Table 4.1 reports the descriptive statistics of mutual funds' ownership and fund management companies' ownership in listed firms. Panel B of Table 4.1 reports the statistics of eight underlying variables, which are used in the following factor analysis. On average, a mutual fund's ownership in a listed firm accounts for just 0.36% of its total number of shares outstanding, although this can be as high as

[21] The sample contains mutual funds' top-ten largest ownership in stocks at the end of each quarter during the sample period, rather than their entire ownership, due to the limitation of data. However, the mutual funds' ownership other than their top-ten largest ownership in stocks is extremely small. The average of the tenth largest mutual funds' quarterly ownership in their portfolio firms is only 0.037% (based on the firms' total shares), whereas the average of the largest mutual funds' quarterly ownership is 1.151%. In addition, I use two variables to measure each character of the mutual funds' past investment behavior (e.g., both PT1 and PT2 measure the portfolio turnover). Thus, I believe that the lack of complete data would not strongly bias the research results.

7.30%. The mutual fund's average ownership of tradable shares in a listed firm is, however, 0.70% and can be as high as 19.81%. The average values of mutual funds' and fund management companies' total shareholdings are around 50% of their tradable shareholdings. This suggests that, on average, a listed firm's total number of tradable shares is around 50% of its total number of outstanding shares. Some studies (e.g. Yuan, Xiao and Zou, 2008; and Li et al., 2011) report that tradable shares generally represented about one-third of the number of total shares in China before the non-tradable share reform. Since the reform started in April 2005, this ratio has, however, gradually increased. The total number of observations of the mutual funds' quarterly ownership is 57,200. There are 509 mutual funds[22], including both open-end and close-end funds, and 1,083 listed companies in the sample. The 509 mutual funds are operated and managed by 60 fund management companies. In the sample, there are 281 stocks having more than 5% of their total number of tradable shares held by 161 mutual funds. As for the holding period, there are 370 stocks having shares held by 370 mutual funds continuously for four or more quarters, and only 127 stocks having shares held by 239 mutual funds continuously for eight or more quarters. The eight variables used to categorize mutual funds are constructed based on the mutual funds' quarterly ownership in listed firms. The quarterly values of the eight variables are then averaged to obtain end-of-year average values. There are a total of 1,714 annual fund-year observations.

[22] The number is less than the number of 531 mutual funds reported in page 21. It is because that 7 mutual funds only invest less than 1% of their total assets in stock markets, and some mutual funds have missing data.

Different mutual funds managed by one FMC may hold the shares of the same listed firms at the same time. As reported in Table 4.1, on average, a FMC's ownership in a listed firm is 0.63%. There are 385 listed firms have more than 5% of their total number of tradable shares held by 56 FMCs. Furthermore, 394 listed firms have shares held by 60 FMCs continuously for four or more quarters, and 147 listed firms have shares held by 52 FMCs continuously for eight or more quarters.

Table 4.1 Descriptive statistics of institutional holdings and the underlying variables

Panel A: Institutional quarterly ownership statistics (Sep 2004 – Dec 2009)

Variable	Mean	Median	Std. Dev.	Minimum	Maximum
MF	0.36%	0.13%	0.61%	0.0000009%	7.30%
MFT	0.70%	0.25%	1.20%	0.0000009%	19.81%
FMC	0.63%	0.25%	0.99%	0.000046%	9.97%
FMCT	1.22%	0.49%	1.93%	0.000053%	31.89%

MF is the ratio of a listed firm's number of shares held by a mutual fund to the number of listed firm's total shares outstanding (quarterly). MFT is the ratio of a listed firm's number of shares held by a mutual fund to the number of listed firm's tradable shares outstanding (quarterly). FMC is the ratio of the number of a listed firm's shares held by a fund management company to the number of listed firm's total shares outstanding (quarterly). FMCT is the ratio of a listed firm's number of shares held by a fund management company to the number of listed firm's tradable shares outstanding (quarterly). MF and MFT have 57,200 observations. FMC and FMCT have 32,936 observations.

Panel B: Descriptive statistics of the underlying variables

Variable	No. of Obs.	Mean	Std Dev	Minimum	Maximum
PT1	1714	0.171	0.121	0.0001	0.812
PT2	1714	0.124	0.077	0.0001	0.547
STAB1	1714	0.060	0.065	0	0.326
STAB2	1714	0.056	0.057	0	0.333
CNOC	1714	0.143	0.190	0.0001	2.293
APH	1714	0.007	0.006	0.0001	0.051
LBPF	1714	0.014	0.043	0	0.600
LBPH	1714	0.007	0.023	0	0.232

The definitions of variables, which are used to measure the past investment behaviours of mutual funds, can be found on pages 71 and 72.

Table 4.2 reports the results of the mutual fund classification, as well as the statistical summary of the eight variables used in the factor analysis[23]. Factor 1, factor 2, and factor 3 are identified by the factor analysis. Factor 1 primarily measures the variables that describe the block size of the mutual funds' investment in listed firms. Mutual fund with a higher (lower) factor 1 score would have more (less) concentrated portfolios and larger (smaller) investment size. Factor 2 mainly measures the variables that describe the stability (the holding period) of the mutual funds' ownership in listed firms. Mutual funds with a higher (lower) factor 2 score would be more (less) likely to hold any given firm in their portfolio continuously for four quarters. Factor 3 largely measures the variables that describe the portfolio turnover of the mutual funds. Mutual funds with a higher (lower) factor 3 score would trade more (less) frequently. Therefore, transient mutual funds should have low factor 1 scores, low factor 2 scores, and high factor 3 scores; dedicated mutual funds should have high factor 1 scores, high factor 2 scores, and low factor 3 scores; and quasi-index mutual funds should have low factor 1 scores, high factor 2 scores, and low factor 3 scores.

As shown in Table 4.2, the factor scores of all types of mutual funds are consistent with the expectations. Dedicated mutual funds have the highest factor 1 score, which suggests that they, on average, have a more concentrated portfolio and larger investment size than other types of mutual funds. More specifically, their average LBPH and LBPF values are 0.101 and 0.186, respectively. This suggests that

[23] Due to the size limitation of the thesis, the tables of factor analysis are not reported here, but can be requested.

on average they have 10.1% of total holdings in large blocks, and hold more than 5% of tradable shares in 18.6% of their portfolio firms. Quasi-index funds have the highest factor 2 score, which indicates that they, on average, have the longest holding period. It is noteworthy that although dedicated mutual funds' factor 2 scores are negative and lower than quasi-index funds' scores, they are higher than those of transient mutual funds. Transient mutual funds have the lowest factor 2 scores. Their average STAB1 and STAB2 values are 0.035 and 0.032, respectively. This indicates that on average they hold only 3.5% of total value of holdings for four or more quarters; and hold only 3.2% of the shares of portfolio firms for four or more quarters. This suggests that although dedicated mutual funds do not hold the firms for as long as quasi-index funds, they do hold them much longer than the transient funds do. Transient mutual funds have the highest factor 3 score, which indicates that they, on average, buy and sell the shares of listed firms most frequently among all types of mutual funds. More specifically, their average PT1 and PT2 values are 0.267 and 0.180, respectively. This indicates that, on average 26.7% of their quarterly portfolio is different from that in the previous quarter; and they sell on average 18% of their holdings in every quarter. Of the mutual funds, 536 (31.27%) are classified as transient mutual funds, 58 (3.38%) are classified as dedicated mutual funds, and 1,004 (58.58%) are classified as quasi-index mutual funds. Therefore, the results show that the quasi-index mutual funds are the dominant funds in China.

Table 4.2: Mutual fund classification

		Institutional Investor Groups		
Factor		Transient funds	Dedicated funds	Quasi-index funds
Factor1	**Mean**	**-0.109**	**4.157**	**-0.182**
Block Size	**Std. Dev.**	**0.612**	**1.485**	**0.586**
LBPH	Mean	0.005	0.101	0.004
	Std. Dev.	0.011	0.043	0.012
LBPF	Mean	0.009	0.186	0.008
	Std. Dev.	0.022	0.074	0.022
APH	Mean	0.006	0.028	0.006
	Std. Dev.	0.005	0.007	0.005
CNOC	Mean	0.144	0.319	0.133
	Std. Dev.	0.184	0.246	0.179
Factor2	**Mean**	**-0.451**	**-0.070**	**0.245**
Holding Period	**Std. Dev.**	**0.645**	**1.048**	**1.120**
STAB1	Mean	0.035	0.089	0.079
	Std. Dev.	0.039	0.067	0.070
STAB2	Mean	0.032	0.081	0.072
	Std. Dev.	0.033	0.059	0.062
Factor3	**Mean**	**1.035**	**-0.332**	**-0.533**
Trading Frequency	**Std. Dev.**	**0.770**	**0.904**	**0.695**
PT1	Mean	0.267	0.157	0.121
	Std. Dev.	0.126	0.089	0.083
PT2	Mean	0.180	0.114	0.090
	Std. Dev.	0.073	0.064	0.048
N		**536**	**58**	**1004**
Proportion		**31.27%**	**3.38%**	**58.58%**

This table reports the results of the mutual fund classification. Factor 1 is each type of mutual fund's factor 1 score. Factor 2 is each type of mutual fund's factor 2 score. Factor 3 is each type of mutual fund's factor 3 score. The score of factor1, factor2, and factor3 have been standardized. All three scores have a mean of zero and a standard deviation of one across the entire distribution of mutual funds. N is the number of institution-year observations. Proportion is the ratio of the number of institution-year observations to the total number of institution-year observations. There are 116 mutual funds that have not been classified by the mutual fund classification (6.7% of total number of observations). It is because whether these funds have been operated for more than one year, or they have missing data.

Table 4.3 shows the mutual fund holdings as a percentage of total shares outstanding at the end of each quarter from September 2004 to December 2009. ALL/ D/Q/T/L is total/dedicated/quasi-index/transient/long-term mutual funds' ownership in a listed firm. Long-term mutual funds[24] include both dedicated and quasi-index mutual funds. Although on average mutual funds' ownership only accounts for around 3% of listed firms' total shares outstanding, it can be as high as 34.61%. Figure 4.1 shows the trend of average mutual funds' ownership at the end of each quarter during the sample period. Overall, all types of mutual funds' ownership increases over time.

Figure 4.1 Average mutual funds' ownership

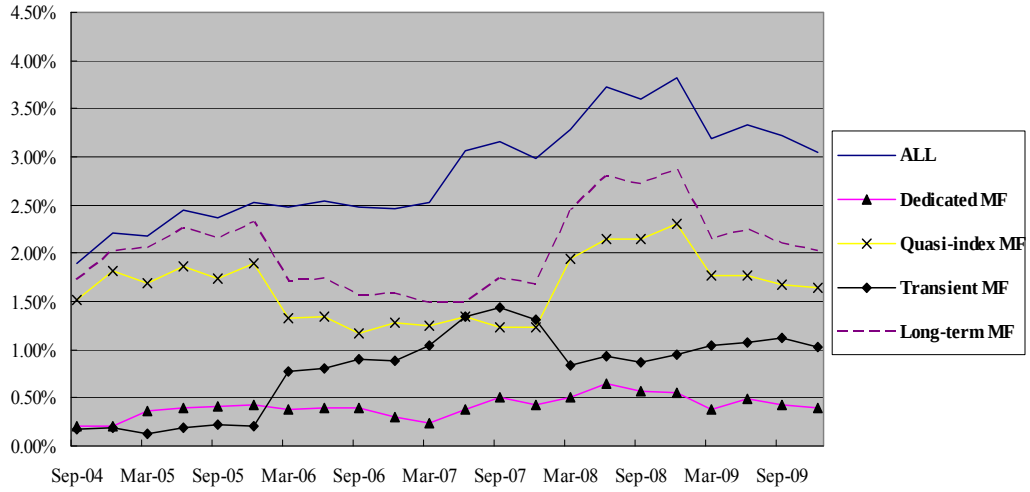


Figure 4.1 shows the trend of the average of mutual funds' ownership from September 2004 to December 2009. ALL/D/Q/T/L is total/dedicated/quasi-index/transient/long-term mutual funds' ownership in a listed firm.

[24] Long-term mutual funds will be used in Chapters 5 and 6.

Table 4.3 Quarterly mutual funds' ownership during the sample period

	MF Type	Mean	Median	Max	Min
2004-9-30	ALL	1.89%	1.10%	24.95%	0.00%
	D	0.20%	0.00%	4.23%	0.00%
	Q	1.52%	0.92%	21.49%	0.00%
	T	0.17%	0.00%	2.45%	0.00%
	L	1.73%	1.04%	23.04%	0.00%
2004-12-31	ALL	2.21%	1.40%	26.72%	0.00%
	D	0.21%	0.00%	4.54%	0.00%
	Q	1.81%	1.18%	23.23%	0.00%
	T	0.18%	0.00%	2.72%	0.00%
	L	2.02%	1.34%	24.93%	0.00%
2005-3-31	ALL	2.18%	1.15%	28.20%	0.00%
	D	0.36%	0.00%	3.37%	0.00%
	Q	1.70%	0.82%	25.06%	0.00%
	T	0.13%	0.00%	1.60%	0.00%
	L	2.05%	1.02%	27.80%	0.00%
2005-6-30	ALL	2.45%	1.32%	27.76%	0.00%
	D	0.40%	0.00%	5.00%	0.00%
	Q	1.86%	0.82%	24.36%	0.00%
	T	0.19%	0.00%	2.35%	0.00%
	L	2.26%	1.06%	27.39%	0.00%
2005-9-30	ALL	2.37%	1.29%	25.19%	0.00%
	D	0.41%	0.00%	5.96%	0.00%
	Q	1.74%	0.86%	21.88%	0.00%
	T	0.22%	0.01%	2.32%	0.00%
	L	2.15%	1.08%	24.83%	0.00%
2005-12-31	ALL	2.53%	1.39%	26.10%	0.00%
	D	0.42%	0.00%	4.99%	0.00%
	Q	1.90%	0.96%	21.85%	0.00%
	T	0.20%	0.00%	2.54%	0.00%
	L	2.32%	1.18%	25.19%	0.00%
2006-3-31	ALL	2.48%	1.37%	30.23%	0.00%
	D	0.38%	0.00%	6.29%	0.00%
	Q	1.33%	0.44%	21.56%	0.00%
	T	0.77%	0.40%	7.97%	0.00%
	L	1.71%	0.85%	22.25%	0.00%
2006-6-30	ALL	2.54%	1.41%	33.11%	0.00%
	D	0.40%	0.00%	7.43%	0.00%
	Q	1.34%	0.61%	23.84%	0.00%
	T	0.81%	0.39%	8.72%	0.00%
	L	1.74%	0.81%	24.40%	0.00%
2006-9-30	ALL	2.48%	1.33%	31.29%	0.00%

	D	0.40%	0.00%	7.35%	0.00%
	Q	1.17%	0.42%	21.46%	0.00%
	T	0.91%	0.52%	6.41%	0.00%
	L	1.57%	0.61%	25.26%	0.00%
2006-12-31	ALL	2.47%	1.29%	18.54%	0.00%
	D	0.30%	0.00%	7.32%	0.00%
	Q	1.29%	0.59%	10.85%	0.00%
	T	0.88%	0.36%	7.63%	0.00%
	L	1.59%	0.71%	12.80%	0.00%
2007-3-31	ALL	2.53%	1.44%	21.23%	0.00%
	D	0.24%	0.00%	3.99%	0.00%
	Q	1.25%	0.43%	10.49%	0.00%
	T	1.04%	0.48%	11.93%	0.00%
	L	1.49%	0.64%	10.92%	0.00%
2007-6-30	ALL	3.07%	1.74%	34.61%	0.00%
	D	0.38%	0.00%	5.64%	0.00%
	Q	1.35%	0.50%	15.82%	0.00%
	T	1.34%	0.51%	18.79%	0.00%
	L	1.49%	0.87%	15.82%	0.00%
2007-9-30	ALL	3.16%	2.20%	17.33%	0.00%
	D	0.51%	0.00%	7.54%	0.00%
	Q	1.23%	0.55%	10.74%	0.00%
	T	1.43%	0.64%	13.88%	0.00%
	L	1.73%	1.21%	10.74%	0.00%
2007-12-31	ALL	2.98%	1.86%	19.27%	0.00%
	D	0.43%	0.00%	5.75%	0.00%
	Q	1.24%	0.43%	9.61%	0.00%
	T	1.31%	0.62%	9.61%	0.00%
	L	1.67%	0.88%	12.40%	0.00%
2008-3-31	ALL	3.28%	2.12%	23.52%	0.00%
	D	0.51%	0.00%	8.28%	0.00%
	Q	1.94%	1.03%	14.97%	0.00%
	T	0.84%	0.25%	7.89%	0.00%
	L	2.44%	1.53%	17.85%	0.00%
2008-6-30	ALL	3.73%	2.28%	27.94%	0.00%
	D	0.65%	0.00%	9.20%	0.00%
	Q	2.15%	0.81%	17.78%	0.00%
	T	0.94%	0.32%	6.55%	0.00%
	L	2.80%	1.54%	21.47%	0.00%
2008-9-30	ALL	3.60%	1.89%	28.38%	0.00%
	D	0.58%	0.00%	9.37%	0.00%
	Q	2.15%	0.62%	19.39%	0.00%
	T	0.87%	0.26%	7.08%	0.00%

	L	2.72%	1.17%	21.49%	0.00%
	ALL	3.82%	1.84%	27.09%	0.00%
	D	0.56%	0.00%	10.30%	0.00%
2008-12-31	Q	2.31%	0.65%	19.66%	0.00%
	T	0.95%	0.36%	7.53%	0.00%
	L	2.87%	1.19%	20.48%	0.00%
	ALL	3.19%	1.64%	25.05%	0.00%
	D	0.38%	0.00%	7.84%	0.00%
2009-3-31	Q	1.76%	0.56%	14.91%	0.00%
	T	1.04%	0.41%	8.24%	0.00%
	L	2.14%	0.81%	19.40%	0.00%
	ALL	3.33%	1.75%	26.81%	0.00%
	D	0.48%	0.00%	9.58%	0.00%
2009-6-30	Q	1.77%	0.55%	17.67%	0.00%
	T	1.08%	0.30%	9.78%	0.00%
	L	2.25%	0.87%	20.40%	0.00%
	ALL	3.22%	1.76%	21.83%	0.00%
	D	0.42%	0.00%	11.13%	0.00%
2009-9-30	Q	1.67%	0.58%	12.66%	0.00%
	T	1.12%	0.34%	9.88%	0.00%
	L	2.10%	0.68%	14.43%	0.00%
	ALL	3.04%	1.44%	22.68%	0.00%
	D	0.39%	0.00%	9.03%	0.00%
2009-12-31	Q	1.63%	0.42%	14.30%	0.00%
	T	1.02%	0.15%	9.38%	0.00%
	L	2.02%	0.53%	16.64%	0.00%

Table 4.3 shows the quarterly mutual fund holdings as a percentage of total shares outstanding during September 2004 to December 2009. ALL/D/Q/T/L is total/dedicated/quasi-index/transient/long-term mutual funds' ownership in a listed firm. Long-term mutual funds include both dedicated and quasi-index mutual funds.

4.3 The characteristics of the listed firms preferred by different types of mutual funds in China

After the classification of mutual funds, this section examines the characteristics of the listed firms preferred by mutual funds in general, as well as by different types of mutual funds. There are two significant aspects to this test. First, the results can be

helpful to regulatory bodies and individual investors in understanding the strategies adopted by various mutual funds in selecting their portfolio firms. Second, the results of this test can also demonstrate the robustness of the mutual fund classification. If the mutual fund classification accurately shows the distribution of various mutual funds in China, different mutual fund types should have different preferences in relation to the characteristics of listed firms, consistent with their investment strategies. In the regression analysis, the mutual funds' shareholdings at the end of the first quarter of each year are used as the dependent variables and all independent variables that measure the characteristics of listed firms are previous year-end data[25]. As mutual funds only began to announce their quarterly reports from July 2004, the sample period of this test is from 2005 to 2009.

4.3.1 Sample selection

The sample selected must satisfy the following criteria:

(a) A firm must have shares held by a mutual fund at the end of the first quarter during the sample period from 2005 to 2009;

(b) A firm must not be a financial company (e.g., banks, insurance companies, and investment trusts), as these usually have different characteristics from other listed firms; and

(c) There is no missing data on any variable in the regression.

[25] As independent variables have only year-end data, I use yearly data and mutual funds' holdings at the end of the first quarter to run regressions.

The above criteria yield a usable sample of 1,384 firm-year observations[26].

4.3.2 Hypotheses development

Quasi-index mutual funds, which are the dominant mutual funds in China, have low turnover and diversified portfolio holdings, and adopt a buy-and-hold trading strategy. Porter (1992) states that fragmented ownership of quasi-index funds often lead them to gather little information on listed companies. The main purpose of the quasi-index mutual funds is to minimize the risk of their portfolios, and hold the shares of listed firms for a relatively long period. Therefore, I expect that quasi-index mutual funds would prefer to invest in firms with low risk and good operating and market performance, and be less concerned about the liquidity of shares. I propose the following hypotheses with regard to the quasi-index funds:

H1a. Quasi-index mutual funds' ownership is negatively associated with the listed firms' risk measurements.

H1b. Quasi-index mutual funds' ownership is insignificantly associated with the listed firms' liquidity.

[26] I also include listed firms without mutual fund ownership to test the difference between the characteristics of firms with and without mutual fund ownership. The firm-year observation sample for firms without mutual fund ownership is 5345.

H1c. Quasi-index mutual funds' ownership is positively associated with the listed firms' operating and market performance.

Transient mutual funds, which prefer current and short-term earnings, would not usually hold the shares of the listed firms for as long as other institutions do, and they may sell shares of firms whose current earnings are under-performing (Bushee, 1998; Koh 2007). Thus, I expect that transient mutual funds are likely to select stocks with high current earnings and good growth opportunities. Therefore, I propose the following hypotheses:

H2a. Transient mutual funds' ownership is positively associated with the listed firms' operating performance.

H2b. Transient mutual funds' ownership is positively associated with the listed firms' growth opportunities.

According to Bushee (2001) and Porter (1992), dedicated institutions in the US, which usually have low turnover and concentrated portfolio holdings, prefer large and long-term holdings in a few companies. Similarly, I find that dedicated mutual funds in China have more concentrated portfolios than other types of mutual funds. However, their holding periods are not as long as that of quasi-index funds. As such, I expect that dedicated mutual funds would prefer to select listed firms with high

liquidity, so that it would be relatively easy for them to buy or sell the large amount of shares. Koh (2007) concludes that dedicated funds are less likely than transient funds to penalize listed firms based on current underperforming earnings that may not be the result of poor management. Dedicated mutual funds are inclined to play an effective monitoring role by improving the target firms' governance, so that they may care less about listed firms' near-term operating performance. Accordingly, I develop the following hypotheses regarding the dedicated funds:

H3a. Dedicated mutual funds' ownership is positively associated with the listed firms' liquidity.

H3b. Dedicated mutual funds' ownership is insignificantly associated with the listed firms' operating performance.

4.3.3 Dependent variables

Four dependent variables are used in the regression analysis. ALL[27] refers to the total mutual funds' ownership, including all types of mutual funds' ownership; T is the transient mutual funds' ownership; D is the dedicated mutual funds' ownership; and Q is the quasi-index mutual funds' ownership. ALL, T, D, and Q are constructed based on the number of listed firms' tradable shares, as mutual funds can only invest in

[27] As ALL includes various types of mutual funds' ownership, this study does not form specific hypotheses about the relation between ALL and the independent variables.

tradable shares in China.

4.3.4 Explanatory variables

(1) Risk

Two risk measures are used in this chapter. Listed firms' market beta coefficient (BETA[28]) is employed to measure the market risk, while firms' debt ratio (ratio of total debt to its total equity, DE) is used to measure the financial risk. A high beta, or a high debt ratio, indicates high risk in a listed company. According to hypothesis H1a, BETA and DE are expected to be negatively associated with quasi-index mutual funds' ownership (Q).

(2) Liquidity

Falkenstein (1996) and Gompers and Metrick (2001) argue that listed firms' liquidity is one of the major determinants of mutual fund investment. In this chapter, TV is used to measure the liquidity of listed firms in China. TV is defined as a firm's trading volume[29] divided by the number of its tradable shares at the end of each year. Firms with high liquidity will, in general, be preferred by mutual funds, and according to hypotheses H1b and H3a, TV is expected to have a positive but insignificant relationship with Q and D respectively.

[28] BETA is estimated using daily returns.

[29] The trading volume equals the sum of the listed firm's daily trading volume of each year, rather than just the year-end data.

(3) Profitability

Woidtke (2002) argues that institutional investors prefer to invest in firms with positive prior earnings due to the prudence consideration in the US. This study uses listed firm's return on assets (ROA) to measure the profitability and operating performance of listed firms. As hypotheses H1c, H2a and H3b suggest, ROA is expected to have a positive relationship with Q and T, but an insignificant relationship with D.

(4) Growth opportunity/stock market performance

TQ[30] is listed firms' Tobin's Q ratio, and employed as a proxy for growth opportunities. According to hypotheses H1c and H2b, TQ is expected to have a positive relationship with Q and T. On the other hand, Tobin's Q is also regarded as a measure of stock market performance in the literature (e.g. Morck, Shleifer and Vishny, 1988; Woidtke, 2002; Yuan, Xiao and Zou 2008). As a supplement to the measurement of stock market performance, I also include another variable in this study. CAR[31] refers to listed firms' last 12-month cumulative market adjusted abnormal returns (with dividend reinvested).

(5) State-controlled vs. non-state-controlled listed firms

30 TQ = (the market value of tradable shares + the book value of non-tradable shares + the book value of long-term liability + the book value of short-term liability) / the firm's book value of total assets.

31 CAR = ∑(SR-IR). SR is stock monthly return (with dividend reinvested), IR is index monthly return. If a firm is listed on Shanghai Stock Exchange, then the IR is the monthly return of Shanghai A-share composite index (with dividend reinvested), otherwise the IR is the monthly return of Shenzhen A-share composite index (with dividend reinvested).

A dummy variable, CTR[32], is used to measure the type of largest shareholder of a listed firm. CTR takes the value of one if the ultimate controller of the listed firm's largest shareholder is a private or foreign entity, and zero otherwise. In addition, I also use the variable STATE to measure the effect of the state-owned shares. STATE refers to the proportion of state-owned shares and state-owned legal person shares of a company.

(6) Firm Size

SIZE is the logarithm of a listed firm's total assets, and controls for a firm's size effect.

4.3.5 The model

This study uses Ordinary Least Square (OLS) regression to test the determinants of mutual funds' ownership. The OLS regression model is shown as follows:

$$ALL_{i,t}=\alpha_1+\alpha_2 BETA_{i,t-1}+\alpha_3 DE_{i,t-1}+\alpha_4 TV_{i,t-1}+\alpha_5 ROA_{i,t-1}+\alpha_6 TQ_{i,t-1}+\alpha_7 CAR_{i,t-1}+\alpha_8 CTR_{i,t-1}$$
$$+\alpha_9 STATE_{i,t-1}+\alpha_{10} SIZE_{i,t-1}+\varepsilon_{i,t-1} \quad \text{(Equation 4.1)}$$

[32] The CCERDATA database categorizes the controllers of the largest shareholders of the listed firms into six groups: State; Private entity; Foreigners; Community or social groupings; Employees; and Other. This thesis treats the listed firms controlled by the private entity, employees and foreigners as non-state-controlled listed firms, and treats the other types as state-controlled listed firms. In the sample, 72.33% of total observations are controlled by the State, 24.13% controlled by private entities, 1.00% controlled by foreigners, 1.30% controlled by the community or social groupings, 0.43% controlled by employees, and 0.36% of the total observations have unclear ultimate controllers.

$$Q_{i,t}=\alpha_1+\alpha_2 BETA_{i,t-1}+\alpha_3 DE_{i,t-1}+\alpha_4 TV_{i,t-1}+\alpha_5 ROA_{i,t-1}+\alpha_6 TQ_{i,t-1}+\alpha_7 CAR_{i,t-1}+\alpha_8 CTR_{i,t-1}+\alpha_9 STATE_{i,t-1}+\alpha_{10} SIZE_{i,t-1}+\varepsilon_{i,t-1}$$ (Equation 4.2)

$$T_{i,t}=\alpha_1+\alpha_2 BETA_{i,t-1}+\alpha_3 DE_{i,t-1}+\alpha_4 TV_{i,t-1}+\alpha_5 ROA_{i,t-1}+\alpha_6 TQ_{i,t-1}+\alpha_7 CAR_{i,t-1}+\alpha_8 CTR_{i,t-1}+\alpha_9 STATE_{i,t-1}+\alpha_{10} SIZE_{i,t-1}+\varepsilon_{i,t-1}$$ (Equation 4.3)

$$D_{i,t}=\alpha_1+\alpha_2 BETA_{i,t-1}+\alpha_3 DE_{i,t-1}+\alpha_4 TV_{i,t-1}+\alpha_5 ROA_{i,t-1}+\alpha_6 TQ_{i,t-1}+\alpha_7 CAR_{i,t-1}+\alpha_8 CTR_{i,t-1}+\alpha_9 STATE_{i,t-1}+\alpha_{10} SIZE_{i,t-1}+\varepsilon_{i,t-1}$$ (Equation 4.4)

This study also runs regressions with each explanatory variable individually to see which explanatory variable exerts the greatest influence on the investment decisions of the different mutual fund types.

4.3.6 Empirical results

Table 4.4 shows the descriptive statistics of the mutual funds' ownership at the end of each first quarter from 2005 to 2009 and one year lagged (from 2004 to 2008) listed firms' characteristics (independent variables in the regression analysis). ALL, T, D, and Q (total mutual funds' ownership, transient mutual funds' ownership, dedicated funds' ownership, and quasi-index funds' ownership) are identified by the Mutual Fund Classification. Because different mutual funds may hold the same stocks at the same time, the sum of the numbers of Q, T and D are higher than the numbers

of ALL. The average ALL at the end of the first quarter from 2005 to 2009 is 5.77%, though it can be as high as 71.79%. The average T, D, and Q are 2.47%, 3.60% and 4.40%, respectively.

Table 4.4: Descriptive statistics

Variable	N	Mean	Std Dev	Minimum	Maximum
ALL	1384	5.77%	0.0690	0.013%	71.785%
Q	1034	4.40%	0.052	0.008%	63.792%
T	948	2.47%	0.026	0.006%	19.587%
D	314	3.60%	0.032	0.036%	18.856%
BETA	1384	1.015	0.309	-4.096	2.234
DE	1384	1.333	1.324	0.021	22.199
TV	1384	4.429	2.945	0.203	19.695
ROA	1384	0.061	0.054	-0.556	0.385
TQ	1384	1.640	0.999	0.370	10.303
CAR	1384	0.032	0.434	-1.277	2.023
CTR	1384	0.249	0.432	0	1
STATE	1384	0.316	0.251	0	0.863
SIZE	1384	9.666	0.523	8.369	12.077

Table 4.4 reports the descriptive statistics of the mutual funds' ownership in listed firms at the end of the first quarter of each year from 2005 to 2009, and the mutual funds' portfolio firms' characteristics at the end of each year from 2004 to 2008. ALL is the total mutual funds' ownership in a listed firm, including all types of mutual funds' ownership. T, D and Q are the ownership of transient, dedicated and quasi-index mutual funds, respectively. ALL, Q, T and D are measured based on the number of listed firms' tradable shares. BETA is listed firm's market beta coefficient. DE is listed firm's total debt scaled by its total equity. TV is listed firm's trading volume scaled by the firm's total number of tradable shares. ROA is listed firm's return on assets. TQ is listed firm's Tobin's Q ratio. CAR is listed firm's past 12 months cumulative market adjusted abnormal returns. CTR is a dummy variable, which takes the value of one if the firm is not ultimately controlled by the government, and zero otherwise. STATE is the percentage of listed firm's shares held by the government, including the shares directly held by the government and the shares held by the state-owned legal persons. SIZE is listed firm's log value of total assets.

Table 4.5 shows the results of Pearson Correlation testing. Among the explanatory variables, most of the correlations between any two variables are less than 0.5. The highest correlation in absolute terms, which is -0.654, is between STATE and CTR. Thus, the correlations are not high enough to cause multicollinearity. To be cautious, however, the variables CTR and STATE are used separately in the

regressions.

Table 4.5: Pearson correlations

	ALL	BETA	DE	TV	ROA	TQ	CAR	CTR	STATE	SIZE
ALL	1	-0.151***	-0.039	-0.110***	0.224***	0.209***	0.158***	-0.128***	0.166***	0.150***
p-value		*<.0001*	*0.146*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*
BETA		1	0.082***	0.290***	-0.205***	-0.170***	-0.024	0.058***	0.088***	0.089***
p-value			*0.002*	*<.0001*	*<.0001*	*<.0001*	*0.368*	*0.031*	*0.001*	*0.001*
DE			1	0.021	-0.372***	-0.166***	0.025	-0.057**	0.018	0.256***
p-value				*0.430*	*<.0001*	*<.0001*	*0.350*	*0.033*	*0.506*	*<.0001*
TV				1	-0.093***	0.137***	-0.023	0.062**	-0.025	0.213***
p-value					*0.001*	*<.0001*	*0.398*	*0.022*	*0.352*	*<.0001*
ROA					1	0.385***	0.145***	0.087***	0.034	0.110***
p-value						*<.0001*	*<.0001*	*0.001*	*0.213*	*<.0001*
TQ						1	0.079***	0.141***	0.151***	0.280***
p-value							*0.003*	*<.0001*	*<.0001*	*<.0001*
CAR							1	-0.001	0.013	0.030
p-value								*0.962*	*0.636*	*0.263*
CTR								1	0.654***	0.298***
p-value									*<.0001*	*<.0001*
STATE									1	0.292***
p-value										*<.0001*
SIZE										1

Table 4.5 reports the Pearson Correlation coefficients between the independent variables. ALL is total mutual funds' ownership in a listed firm, including all types of mutual funds' ownership (based on listed firms' tradable shares). BETA is listed firm's market beta coefficient. DE is listed firm's financial leverage ratio (total debt/total equity). TV is listed firm's trading volume scaled by the firm's total number of tradable shares. ROA is listed firm's return on assets. TQ is listed firm's Tobin's Q ratio. CAR is listed firm's past 12 months cumulative market adjusted abnormal returns. CTR is a dummy variable, which takes the value of one if the firm is not ultimately controlled by the government, and zero otherwise. STATE is the percentage of listed firm's shares held by the government, including the shares directly held by the government and the shares held by the state-owned legal persons. SIZE is listed firm's log value of total assets.
*, **, and *** indicate statistical significance at the 0.1, 0.05, and 0.01 levels, respectively (two-sided).

Before running the regressions, I use t-test and Wilcoxon test to examine the differences between the characteristics of listed firms with and without mutual fund ownership. The results in Table 4.6 show that listed firms with mutual fund ownership have lower market beta coefficients, lower liquidity, better operating and market

performance, higher state ownership and larger firm size than firms without mutual fund ownership. These results suggest that, although Chinese mutual funds have a short history and are not constrained by as many regulations as those in developed markets, their investment decisions on choosing low risk and good performing firms are fundamentally sound.

Table 4.6: The differences between the characteristics of firms with and without fund ownership

	Listed firms with fund ownership			Listed firms without fund ownership			Differences	
EM	N	Mean	Median	N	Mean	Median	Mean Diff *(t-stat)*	Median Diff *(z-stat)*
BETA	1384	1.011	1.019	5345	1.122	1.136	-0.112*** *-12.19*	-0.116*** *-14.100*
DE	1384	1.329	1.044	5345	1.263	1.037	0.066 *0.19*	0.007 *0.693*
TV	1384	4.405	3.709	5345	5.363	4.459	-0.958*** *-10.32*	-0.751*** *-8.366*
ROA	1384	0.068	0.058	5345	0.004	0.019	0.064*** *26.79*	0.039*** *30.818*
TQ	1384	1.894	1.348	5345	1.465	0.966	0.429*** *7.5*	0.383*** *11.541*
CAR	1384	0.015	0.026	5345	-0.172	-0.165	0.187*** *14.12*	0.190*** *15.573*
STATE	1384	0.315	0.345	5345	0.279	0.278	0.036*** *4.76*	0.067*** *4.581*
SIZE	1384	22.267	22.155	5345	21.134	21.095	1.134*** *32.24*	1.060*** *31.195*

This table reports the differences between the characteristics between listed firms with and without mutual fund ownership. BETA is listed firm's market beta coefficient. DE is listed firm's financial leverage ratio (total debt/total equity). TV is listed firm's trading volume scaled by the firm's total number of tradable shares. ROA is listed firm's return on assets. TQ is listed firm's Tobin's Q ratio. CAR is listed firm's past 12 months cumulative market adjusted abnormal returns. CTR is a dummy variable, which takes the value of one if the firm is not ultimately controlled by the government, and zero otherwise. STATE is the percentage of listed firm's shares held by the government, including the shares directly held by the government and the shares held by the state-owned legal persons. SIZE is listed firm's log value of total assets.

*, **, and *** indicate statistical significance at the 0.1, 0.05, and 0.01 levels, respectively (two-sided).

I include both firm and year fixed-effects in the regressions to control for the possibility that unobserved firm- and year-specific attributes may affect mutual funds' preferences. Table 4.7 shows the results of the OLS regressions on quasi-index mutual funds' ownership, based on their tradable shareholdings. Most of the results are consistent with the expectations. The coefficients of BETA are significantly negative at the 5% level, whereas the coefficients of ROA, TQ and CARs are all significantly positive at the 1% level. The results support hypotheses H1a and H1c, indicating that the quasi-index mutual funds prefer listed firms with low risk and good operating and market performance. Interestingly, the coefficients of TV are significantly negative at the 1% level, showing that the ownership of quasi-index funds is associated with the low liquidity of listed firms. Moreover, the coefficients of SIZE are significantly positive at the 1% level, which indicates that quasi-index funds prefer large firms[33]. This is understandable, as quasi-index funds are risk-averse investors and large firms are normally less risky. Further, as shown by Regression 4 in Table 4.7, ROA has the highest R-squared value (6.22%) of all the univariate regressions, followed by TQ (3.52%) and BETA (3.17%). Moreover, the absolute value of the coefficient of ROA is also the highest among all explanatory variables. This indicates that, among various firm characteristics, the quasi-index funds' investment decisions primarily depend on listed firms' operating performance, growth opportunities and risk.

Table 4.8 shows the results of the OLS regressions on transient mutual funds'

[33] Due to the existence of non-tradable shares, firms with larger book value of assets may not necessarily be more liquid.

tradable ownership. The coefficients of ROA and TQ are significantly positive at the 5% and the 1% levels, respectively. This supports hypotheses H2a and H2b, and shows that transient mutual funds prefer listed firms with good operating performance and high growth. Among the different firm characters, transient mutual funds value TQ the most. However, it is noteworthy that both the univariate and multivariate regressions in Table 4.8 have comparatively low R-squared values. The highest R-squared value of univariate and multivariate regression are only 2.77% (Regression 5) and 5.50% (Regression 11), respectively. This suggests that, due to the frequent trading strategy that transient mutual funds use, they may not rely on firm attributes as much as other types of mutual funds when making investment decisions.

Table 4.9 shows the results of the OLS regressions on dedicated mutual funds' tradable ownership. The coefficients of TV are significantly positive at the 1% level, indicating that dedicated funds prefer listed firms with high liquidity, and supporting hypothesis H3a. The coefficients of ROA are not statistically significant, which supports hypothesis H3b and suggests that corporate operating performance is not a major concern of dedicated mutual funds. Furthermore, I find that dedicated funds choose to invest in listed firms with small size (SIZE). Also, SIZE has the highest R-squared value (8.15%) among all the univariate regressions. This indicates that dedicated mutual funds' investment decisions primarily depend on the size of the listed firms.

Another interesting result is that the coefficients of CTR and STATE are significantly negative and positive, respectively, at the 1% level across all multivariate regressions in Tables 4.7-4.9. The empirical evidence indicates that all types of mutual funds prefer to invest in state-controlled listed firms or firms with a high level of state ownership. Although some studies argue that the state ownership causes poor corporate governance, inefficient management and poor performance (e.g., Gul, 1999; Xu and Wang, 1999; Dewenter and Malatesta, 2001; Lin, Ma and Su, 2009), Chen, Firth and Xu (2009) report that commercialized state ownership has its advantages in transitional economies. This is because the institutional environment is undeveloped and law enforcement is capricious and weak, so listed firms affiliated to the Chinese central and local governments have more privileges than listed firms controlled by private entities. Political connections between state-controlled listed firms and government may provide firms with more government support and protection, i.e. easier access to bank loans and state subsidies. As such, state-controlled listed firms are attractive to mutual funds in China.

Table 4.7: Results of the OLS regressions on quasi-index mutual funds' ownership (based on listed firms' tradable shares)

Variable	Expt Sign	Q										
Regression		1	2	3	4	5	6	7	8	9	10	11
Intercept		0.072***	0.046***	0.054***	0.027***	0.028***	0.043***	0.047***	0.033***	-0.062**	-0.108***	-0.108
P-value		*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*0.022*	*0.003*	*0.002*
BETA	-	-0.029***									-0.013**	-0.012**
P-value		*<.0001*									*0.036*	*0.04*
DE	-		-0.001								0.001	0.001
P-value			*0.338*								*0.723*	*0.669*
TV	Insig.			-0.003***							-0.001***	-0.001***
P-value				*0.001*							*0.005*	*0.002*
ROA	+				0.254***						0.185***	0.166***
P-value					*<.0001*						*<.0001*	*<.0001*
TQ	+					0.009***					0.008***	0.008***
P-value						*<.0001*					*0.001*	*0.001*
CAR	+						0.016***				0.014***	0.014***
P-value							*0.001*				*<.0001*	*<.0002*
CTR								-0.014***			-0.012***	
P-value								*<.0001*			*<.0001*	
STATE									0.032***			0.025***
P-value									<.0001			*<.0001*
SIZE										0.011***	0.015***	0.014***
P-value										*0.001*	*<.0001*	*<.0002*
R-square		3.17%	0.14%	1.87%	6.22%	3.52%	1.73%	1.27%	2.43%	1.24%	14.33%	14.74%
No. of Obs.							1034					

This table reports the fixed-effect estimation of the effects of various firm characteristics on quasi-index mutual funds' ownership. Q is the ownership of the quasi-index funds, classified by the Mutual Fund Classification, which categorizes mutual funds based on their holdings in listed firms' tradable shares. Q is the dependent variables. The independent variables are as follows. BETA is listed firm's market beta coefficient. DE is listed firm's financial leverage ratio (total debt/total equity). TV is listed firm's trading volume scaled by the firm's total number of tradable shares. ROA is listed firm's return on assets. TQ is listed firm's Tobin's Q ratio. CAR is listed firm's past 12 months cumulative market adjusted abnormal returns. CTR is a dummy variable, which takes the value of one if the firm is not ultimately controlled by the government, and zero otherwise. STATE is the percentage of listed firm's shares held by the government, including the shares directly held by the government and the shares held by the state-owned legal persons. SIZE is listed firm's log value of total assets.
*, **, and *** indicate statistical significance at the 0.1, 0.05, and 0.01 levels, respectively (two-sided).

Table 4.8: Results of the OLS regressions on transient mutual funds' ownership (based on listed firms' tradable shares)

Variable	Expt Sign	T										
Regression		1	2	3	4	5	6	7	8	9	10	11
Intercept		0.025***	0.025***	0.023***	0.022***	0.018***	0.025***	0.026***	0.021***	0.029**	-0.001	-0.001
P-value		*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*0.046*	*0.996*	*0.956*
BETA		-0.001									0.004	0.004
P-value		*0.968*									*0.209*	*0.107*
DE			-0.001								0.001	0.001
P-value			*0.698*								*0.212*	*0.211*
TV				0.001*							0.001	0.001
P-value				*0.088*							*0.211*	*0.36*
ROA	+				0.052***						0.038**	0.029*
P-value					*0.001*						*0.016*	*0.062*
TQ	+					0.004***					0.004***	0.004***
P-value						*0.001*					*0.001*	*0.001*
CAR							0.004**				0.003	0.003
P-value							*0.028*				*0.154*	*0.1687*
CTR								-0.004**			-0.006***	
P-value								*0.013*			*0.002*	
STATE									0.012***			0.014***
P-value									*0.001*			*0.001*
SIZE										-0.001	0.001	0.001
P-value										*0.746*	*0.506*	*0.719*
R-square		0.01%	0.01%	0.28%	1.31%	2.77%	0.44%	0.49%	1.31%	0.01%	4.72%	5.50%
No. of Obs.							948					

This table reports the fixed-effect estimation of the effects of various firm characteristics on transient mutual funds' ownership. T is the ownership of the transient mutual funds, classified by the Mutual Fund Classification, which categorizes mutual funds based on their holdings in listed firms' tradable shares. T is the dependent variables. The independent variables are as follows. BETA is listed firm's market beta coefficient. DE is listed firm's financial leverage ratio (total debt/total equity). TV is listed firm's trading volume scaled by the firm's total number of tradable shares. ROA is listed firm's return on assets. TQ is listed firm's Tobin's Q ratio. CAR is listed firm's past 12 months cumulative market adjusted abnormal returns. CTR is a dummy variable, which takes the value of one if the firm is not ultimately controlled by the government, and zero otherwise. STATE is the percentage of listed firm's shares held by the government, including the shares directly held by the government and the shares held by the state-owned legal persons. SIZE is listed firm's log value of total assets.
*, **, and *** indicate statistical significance at the 0.1, 0.05, and 0.01 levels, respectively (two-sided).

Table 4.9: Results of the OLS regressions on dedicated mutual funds' ownership (based on listed firms' tradable shares)

Variable	Expt Sign	D										
Regression		1	2	3	4	5	6	7	8	9	10	11
Intercept		0.022***	0.038***	0.026***	0.039***	0.035***	0.036***	0.037***	0.033***	0.195***	0.198***	0.191***
P-value		*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*
BETA		0.014**									0.004	0.004
P-value		*0.019*									*0.578*	*0.55*
DE			-0.002								-0.002	-0.002
P-value			*0.273*								*0.202*	*0.119*
TV	+			0.003***							0.002***	0.002***
P-value				*0.001*							*0.004*	*0.004*
ROA	Insig.				-0.041						-0.042	-0.054
P-value					*0.252*						*0.321*	*0.22*
TQ						0.001					-0.001	-0.001
P-value						*0.577*					*0.53*	*0.702*
CAR							0.004				0.003	0.002
P-value							*0.393*				*0.533*	*0.564*
CTR								-0.009**			-0.016***	
P-value								*0.018*			*<.0001*	
STATE									0.009			0.022***
P-value									*0.188*			*0.003*
SIZE										-0.016***	-0.016***	-0.017***
P-value										*<.0001*	*<.0001*	*<.0001*
R-square		1.72%	0.24%	4.60%	0.45%	0.08%	0.24%	1.03%	0.56%	8.15%	15.31%	14.94%
No. of Obs.							314					

This table reports the fixed-effect estimation of the effects of various firm characteristics on dedicated mutual funds' ownership. D is the ownership of the dedicated mutual funds, classified by the Mutual Fund Classification, which categorizes mutual funds based on their holdings in listed firms' tradable shares. D is the dependent variables. The independent variables are as follows. BETA is listed firm's market beta coefficient. DE is listed firm's financial leverage ratio (total debt/total equity). TV is listed firm's trading volume scaled by the firm's total number of tradable shares. ROA is listed firm's return on assets. TQ is listed firm's Tobin's Q ratio. CAR is listed firm's past 12 months cumulative market adjusted abnormal returns. CTR is a dummy variable, which takes the value of one if the firm is not ultimately controlled by the government, and zero otherwise. STATE is the percentage of listed firm's shares held by the government, including the shares directly held by the government and the shares held by the state-owned legal persons. SIZE is listed firm's log value of total assets.
*, **, and *** indicate statistical significance at the 0.1, 0.05, and 0.01 levels, respectively (two-sided).

Regressions are then run with all non-financial listed firms with and without mutual fund holdings (regressions 1 and 2 shown in Table 4.10), and then again with firms split into state-controlled and non-state-controlled samples (regressions 3 and 4 shown in Table 4.10). These results are reported in Table 4.10. With ALL as the dependent variable, it can be seen that Chinese mutual funds generally prefer to invest in listed firms with low systematic risk, low liquidity, good operating and stock performance, large firm size and a high proportion of state ownership. The coefficients of BETA, TV, ROA, TQ, CAR, CTR, STATE, and SIZE are all statistically significant at either 1% or 5% levels. These results are consistent with the results of t-test and Wilcoxon test (see Table 4.6). This shows that the preference of mutual funds, in general, is very similar to that of quasi-index mutual funds, the dominant type of mutual fund in China. I find slight differences in the mutual funds' preferences between non-state-controlled and state-controlled firms, with more attention paid to good operating and market performance (the coefficients of ROA and CAR are significantly positive at the 1% level in regression 4) when considering state-controlled firms. Preferences among other characters did not differ significantly.

Table 4.10: Results of the OLS regressions on total mutual funds' ownership (based on listed firms' tradable shares) and on two sub-samples (non-state controlled firms vs. state controlled firms)

Variable	ALL		NSC	SC
Regression	1	2	3	4
Intercept	-0.230***	-0.225***	-0.158***	-0.243***
P-value	*<.0001*	*<.0001*	*<.0001*	*<.0001*
BETA	-0.009***	-0.011***	-0.005***	-0.010***
P-value	*<.0001*	*<.0001*	*0.001*	*<.0001*
DE	0.001	0.001	-0.001	0.001
P-value	*0.149*	*0.197*	*0.331*	*0.296*
TV	-0.001***	-0.001***	-0.001***	-0.001***
P-value	*<.0001*	*<.0001*	*<.0001*	*<.0001*
ROA	0.011**	0.007	0.001	0.050***
P-value	*0.025*	*0.146*	*0.727*	*<.0001*
TQ	0.006***	0.005***	0.003***	0.008***
P-value	*<.0001*	*<.0001*	*<.0001*	*<.0001*
CAR	0.008***	0.009***	0.002	0.014***
P-value	*<.0001*	*<.0001*	*0.195*	*<.0001*
CTR	-0.002**			
P-value	*0.029*			
STATE		0.004**		
P-value		*0.039*		
SIZE	0.012***	0.011***	0.008***	0.012***
P-value	*<.0001*	*<.0001*	*<.0001*	*<.0001*
R-square	18.49%	17.51%	15.48%	21.96%
No. of Obs.	6720		2146	4574

This table reports the fixed-effect estimation of the effects of various firm characteristics on total mutual funds' ownership. The sample used in the regressions includes all non-financial listed firms either with or without mutual fund ownership. ALL is the total mutual funds' ownership in a listed firm, including all types of mutual funds' ownership (based on the listed firms' tradable shares). Mutual funds total ownerships are the dependent variables here. NSC refers to the sub-sample only containing the listed firms that are not ultimately controlled by the state. SC refers the sub-sample only containing the listed firms that are ultimately controlled by the state. BETA is listed firm's market beta coefficient. DE is listed firm's financial leverage ratio (total debt/total equity). TV is listed firm's trading volume scaled by the firm's total number of tradable shares. ROA is listed firm's return on assets. TQ is listed firm's Tobin's Q ratio. CAR is listed firm's past 12 months cumulative market adjusted abnormal returns. CTR is a dummy variable, which takes the value of one if the firm is not ultimately controlled by the government, and zero otherwise. STATE is the percentage of listed firm's shares held by the government, including the shares directly held by the government and the shares held by the state-owned legal persons. SIZE is listed firm's log value of total assets.

*, **, and *** indicate statistical significance at the 0.1, 0.05, and 0.01 levels, respectively (two-sided).

4.4 Robustness tests

I performed the following robustness checks in this study. First, since the mutual funds are not permitted to hold short positions during the sample period, as in Falkenstein (1996), I employ the Tobit model for censored data (the mutual funds' ownership is between 0 and 1) to test the robustness of the OLS regression results. The results of this model (Table 4.11) are consistent with the results of the multivariate regressions shown in Tables 4.7-4.9.

Second, since EPS (earnings per share) is another important measure of a listed firm's profitability, I use this instead of ROA in the OLS regressions. I also use list firm's trading volume of December, instead of the whole year, to recalculate the variable of TV. TV then equals to a firms' total trading volume of December scaled by the number of its tradable shares. All robustness tests (Table 4.12) show similar results to those in Tables 4.7-4.9.

Third, the mutual funds' ownerships at the end of the second quarter from 2005 to 2009 are used as the dependent variables instead, since the listed firm annual reports are released between 1 January and 30 April each year and mutual funds' holdings at the end of the first quarter might not fully reflect the previous year-end information[34].

Before drawing any conclusions on the mutual funds' preferences, I need to discuss a potential issue in the OLS regression tests. Woidtke (2002) finds that

[34] I do not provide result tables for robustness check 3 due to size limitations of the thesis.

ownership by private funds has a significantly positive impact on Fortune 500 firms' market performance (measured by Tobin's Q). Yuan, Xiao and Zou (2008) report the same in China. The regression results of this study show that transient and quasi-index mutual funds prefer to invest in stocks with high TQ and CAR. Thus, an endogeneity problem[35] may exist between the mutual funds' ownership and the listed firms' market performance. I believe, however, that this is not a serious issue in this study. Yuan, Xiao and Zou (2008) find that the level of mutual funds' equity holding in a firm, rather than the mere existence of mutual funds' ownership, would impact on listed firms' market performance. Among various types of mutual funds, it is more likely that dedicated mutual funds would affect listed firms' market performance, as they usually invest more heavily. As such, if the endogeneity problem exists in the test, it would be shown between the dedicated mutual funds' ownership and listed firms' Tobin's Q or CAR. However this study only finds that quasi-index and transient funds' ownership are significantly and positively associated with TQ and CAR.

[35] This study uses the one-year lagged listed firms' Tobin's Q and CAR as the independent variable and mutual funds' ownership at the end of the first quarter of the following year as the dependent variable in the regressions. This cannot, however, completely avoid the potential endogeneity between the firms' Tobin's Q or CAR and mutual funds' ownership, as some mutual funds may have been holding the shares of certain firms longer than one quarter.

Table 4.11: Results of the Tobit regressions on different types of mutual funds' ownership (based on listed firms' tradable shares)

Variable	Q		T		D	
Regression	1	2	3	4	5	6
Intercept	-0.108***	-0.108***	-0.001	-0.001	0.198***	0.191***
P-value	*0.001*	*0.001*	*0.996*	*0.956*	*<.0001*	*<.0001*
BETA	-0.013**	-0.012**	0.004	0.004	0.004	0.004
P-value	*0.011*	*0.018*	*0.197*	*0.115*	*0.582*	*0.549*
DE	0.001	0.001	0.001	0.001	-0.002	-0.002
P-value	*0.739*	*0.695*	*0.39*	*0.395*	*0.188*	*0.268*
TV	-0.001**	-0.002***	0.001	0.001	0.002***	0.002***
P-value	*0.018*	*0.007*	*0.212*	*0.366*	*0.003*	*0.005*
ROA	0.185***	0.166***	0.038**	0.029*	-0.042	-0.054
P-value	*<.0001*	*<.0001*	*0.025*	*0.092*	*0.345*	*0.223*
TQ	0.008***	0.008***	0.004***	0.004***	-0.001	-0.001
P-value	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*0.56*	*0.721*
CAR	0.014***	0.014***	0.003	0.003	0.003	0.002
P-value	*<.0001*	*<.0001*	*0.171*	*0.188*	*0.51*	*0.562*
CTR	-0.012***		-0.006***		-0.016***	
P-value	*0.001*		*0.005*		*0.001*	
STATE		0.025***		0.014***		0.022***
P-value		*<.0001*		*<.0001*		*0.001*
SIZE	0.015***	0.014***	0.001	0.001	-0.017***	-0.017***
P-value	*0.001*	*0.001*	*0.507*	*0.718*	*<.0001*	*<.0001*
No. of Obs.	1034		948		314	

This table reports the Tobit regression results on different types of mutual funds' ownerships (based on the listed firms' tradable shares). Q, T and D are the ownership of quasi-index, transient and dedicated mutual funds. Q, T and D, which are classified by the Mutual Fund Classification, are dependent variables. BETA is listed firm's market beta coefficient. DE is listed firm's financial leverage ratio (total debt/total equity). TV is listed firm's trading volume scaled by the firm's total number of tradable shares. ROA is listed firm's return on assets. TQ is listed firm's Tobin's Q ratio. CAR is listed firm's past 12 months cumulative market adjusted abnormal returns. CTR is a dummy variable, which takes the value of one if the firm is not ultimately controlled by the government, and zero otherwise. STATE is the percentage of listed firm's shares held by the government, including the shares directly held by the government and the shares held by the state-owned legal persons. SIZE is listed firm's log value of total assets.

*, **, and *** indicate statistical significance at the 0.1, 0.05, and 0.01 levels, respectively (two-sided).

Table 4.12 Results of regressions that use alternative variables

Variable	Q		T		D	
Regression	5	6	1	2	3	4
Intercept	-0.082**	-0.083**	0.003	0.001	0.200***	0.193***
P-value	*0.02*	*0.016*	*0.861*	*0.978*	*<.0001*	*<.0001*
BETA	-0.015**	-0.014**	0.003	0.004	0.01	0.01
P-value	*0.021*	*0.023*	*0.279*	*0.158*	*0.146*	*0.142*
DE	-0.002	-0.001	0.001	0.001	-0.001	-0.001
P-value	*0.311*	*0.384*	*0.695*	*0.52*	*0.577*	*0.896*
TV	-0.013***	-0.014***	-0.001	-0.001	0.007***	0.006***
P-value	*0.001*	*<.0001*	*0.835*	*0.833*	*0.005*	*0.005*
EPS	0.010***	0.009***	0.005***	0.005***	-0.005	-0.005
P-value	*0.001*	*0.002*	*0.006*	*0.009*	*0.137*	*0.16*
TQ	0.009***	0.009***	0.004***	0.005***	-0.001	-0.001
P-value	*<.0001*	*<.0001*	*0.001*	*<.0001*	*0.908*	*0.917*
CAR	0.014***	0.013***	0.003	0.003	0.001	0.001
P-value	*0.001*	*0.001*	*0.144*	*0.17*	*0.807*	*0.908*
CTR	-0.012***		-0.006***		-0.016***	
P-value	*<.0001*		*0.001*		*0.001*	
STATE		0.027***		0.015***		0.021***
P-value		*<.0001*		*<.0001*		*0.004*
SIZE	0.013***	0.012***	0.001	0.001	-0.017***	-0.017***
P-value	*0.001*	*0.001*	*0.682*	*0.885*	*<.0001*	*<.0001*
R-square	*13.03%*	*13.71%*	*5.69%*	*6.59%*	*12.79%*	*12.26%*
No. of Obs.	1034		948		314	

This table reports the OLS regression results on different types of mutual funds' ownerships (based on the listed firms' tradable shares). Q, T and D are the ownership of quasi-index, transient and dedicated mutual funds. Q, T and D, which are classified by the Mutual Fund Classification, are dependent variables. BETA is listed firm's market beta coefficient. DE is listed firm's financial leverage ratio (total debt/total equity). TV is listed firm's trading volume in December scaled by the firm's total number of tradable shares. EPS is listed firm's earnings per share. TQ is listed firm's Tobin's Q ratio. CAR is listed firm's past 12 months cumulative market adjusted abnormal returns. CTR is a dummy variable, which takes the value of one if the firm is not ultimately controlled by the government, and zero otherwise. STATE is the percentage of listed firm's shares held by the government, including the shares directly held by the government and the shares held by the state-owned legal persons. SIZE is listed firm's log value of total assets.

*, **, and *** indicate statistical significance at the 0.1, 0.05, and 0.01 levels, respectively (two-sided).

4.5 Conclusion

Essay One classifies mutual funds into three groups based on their past investment behaviours: quasi-index, transient and dedicated mutual funds. The empirical evidence shows that different mutual fund types have different portfolio selection criteria. Quasi-index mutual funds with buy-and-hold trading strategies prefer to invest in listed firms with low market risk, low liquidity, good operating and market performance and large firm size. Among these characteristics, corporate operating performance is the primary criterion for investment decisions.

Transient mutual funds are likely to select listed firms with good operating performance and growth opportunities to invest in. However, due to the relatively small investment size and short holding period, transient mutual funds rely less on firm characters to make investment decisions.

Dedicated mutual funds are the minority, and only account for 3.38% of mutual funds. Also the reasonably short holding period of dedicated mutual funds makes them different from those in developed markets. Interestingly, the empirical results show that the primary concerns for dedicated mutual funds are small firm size and high liquidity.

Finally, this study finds that state-controlled listed firms are preferred by all types of mutual funds in China. This preference may be due to the political connections between state-controlled firms and the government.

Chapter 5 Mutual Funds and Listed Firms' Earnings Management in China

5.1 Introduction

Do institutional shareholdings cause the listed firms to engage in short-term earnings management? Until the present, a definitive answer has been elusive. Froot, Perold and Setin (1992), Porter (1992), and others argue that institutional investors focus too heavily on short-term earnings and thereby encourage short-term managerial behaviour. On the contrary, Chung, Firth and Kim (2002) argue that institutional investors are sophisticated and unlikely to be fooled by earnings management: this reduces the motivations for managers to employ accruals management. This study uses a database of Chinese mutual fund holdings to shed new light on these two competing viewpoints.

In contrast to previous studies on Chinese mutual funds, which treat all mutual funds as homogeneous investors, I consider the heterogeneity in mutual funds. I group dedicated and quasi-index mutual funds together as long-term institutional investors, and treat transient mutual funds as short-term institutional investors. Moreover, I also include the aggregate shareholdings of mutual funds to examine the general impact of these on the earnings management activities of listed firms. Considering the potential endogeneity between mutual funds and earnings management, I use the 2SLS regressions in the empirical analysis, in addition to the OLS regressions.

Three earnings management measures are employed to proxy the earnings

management activities of listed firms: non-core income, discretionary accruals and positive discretionary accruals. Chen and Yuan (2004) argue that state-controlled listed firms often manipulate earnings through non-core items, as they can easily arrange the related-party transactions with their parent companies or other state-owned companies. As such, managing non-core income is very common in China. Furthermore, listed firms can also manage their earnings through accrual items. Compared with non-core income, accrual items are more sophisticated and subtle (Haw et al., 2005). By employing different earnings management measures, this study can make contributions to the literature regarding the ways that listed firms manipulate earnings in China.

The remainder of this chapter is organized as follows: Section 5.2 covers the research design; Section 5.3 presents empirical evidence and discussion and Section 5.4 checks the robustness of the empirical results; Section 5.5 shows the impact of mutual funds on earnings management in state-controlled and non-state-controlled listed firms; Section 5.6 is the conclusion.

5.2 Research design

5.2.1 Sample selection

As with the previous chapter, the sample period here is from September 2004 to December 2009. The sample selected must satisfy the following restrictions:

(a) A firm must have shares held by a mutual fund at the end of the third quarter during the period from 2004 to 2009 in the sample set described above.

(b) A firm must not be a financial company (e.g., banks, insurance companies, and investment trusts), as these usually have different capital structure, and their financial statements are different from others.

(c) A firm-year observation should not have missing data.

The above criteria yielded a usable sample of 1623 observations, representing 652 listed firms during the sample period. The data used in this study is collected from the China Centre for Economic Research database (CCERDATA) and the China Stock Market Accounting Research database (CSMAR). The sample used in this essay is different from that used in Essay One, which contains the firms that have shares held by mutual funds at the end of the first quarter from 2005 to 2009.

5.2.2 Mutual funds' ownership

Aggregate and long-term/short-term mutual funds' ownership in listed firms are used as the proxies for mutual funds' holdings in this chapter. Long-term mutual funds include both dedicated and quasi-index mutual funds; while short-term mutual funds are transient mutual funds. Dedicated, quasi-index, and transient mutual funds are identified in Chapter Four. As mutual funds are only allowed to invest in tradable shares, I measure their ownership based on the number of listed firms' tradable shares in the main tests, and measure their ownership based on the number of total shares in the robustness tests.

5.2.3 Hypothesis development

Relative to other types of institutions, dedicated institutions play a more important role in corporate oversight, and are capable of constraining listed firms' myopic behaviours in the US. However, the result of mutual fund classification shows that there are only a small number of dedicated mutual funds in China. It is noteworthy that both dedicated and quasi-index mutual funds hold more stable portfolios (have longer holding periods and less frequent trading) than transient mutual funds. Therefore, following Koh (2007), I group dedicated and quasi-index mutual funds together as long-term funds, and treat transient mutual funds as short-term funds,

Unlike short-term (transient) institutional investors who overly focus on near-term corporate accounting earnings, institutional investors with long-term holding periods set their sights on dividend income and long-term capital appreciation (Bushee, 2001). Consistent with this view, long-term institutional investors are not likely to encourage listed firms to manipulate earnings, as this would harm the listed firms, as well as long-term institutional investors, in the long run. Koh (2007) finds that long-term institutional investors can restrict listed firms' accruals management in the US. Therefore, in conjunction with long-term institutional investors having both the incentive and the capability to oversee listed firms' financial reporting in the US, I expect:

H1: Long-term mutual funds' ownership is negatively associated with listed firms' earnings management activities in China.

Due to the small investment size, transient institutional investors usually bear

lower transaction costs when selling the shares of portfolio firms. They are likely to sell shares of the firms whose current earnings are under-performing (Porter, 1992; Koh, 2007). Moreover, their strong preference for near-term earnings could cause significant stock misevaluation, and induce earnings management. Bushee (1998) argues that transient institutional investors would encourage listed firms to reduce the R&D expenses when firms' earnings have recently declined. Matsumoto (2002) finds that listed firms with higher transient institutional ownership are more likely to manipulate earnings. Koh (2007) finds that transient institutional ownership is positively associated with listed firms' discretionary accruals when firms need to meet their earnings targets. Considering that Chinese mutual funds have reportedly been involved in the illegal operations, and have aligned with large shareholders to take advantage of individual investors (e.g. Ping and Li, 2000; Fu and Tan, 2008; Qiu and Yao, 2009), transient mutual funds may encourage listed firms to practise earnings management in China. Hence, consistent with the findings on transient institutional investors in the US and the characteristics of Chinese mutual funds, I expect:

H2: Transient mutual funds' ownership is positively associated with listed firms' earnings management activities in China.

5.2.4 Variables and the model

5.2.4.1 Dependent variables

In order to measure listed firms' earnings management with due caution, I employ three different variables as proxies for earnings management activities by

Chinese listed firms. These are non-core income, discretionary accruals, and positive discretionary accruals.

(1) Non-core income (NCI)

Chen and Yuan (2004) and Yu, Du and Sun (2006) report that earnings management is mainly reflected in non-core income[36] in China. Chen and Yuan (2004) argue that this is a convenient means of earnings management for listed firms in China, because the majority of listed firms are state-owned and have strong connections with their unlisted parent companies or other state-owned companies. As such, it is relatively easy to arrange a non-core transaction, between a listed firm and its parent or related firm, to create a non-core income (Chen and Yuan, 2004).

NCI is defined as following:

Non-operating profit=Non-operating revenue[37]−Non-operating expense (Equation 5.1)

NCI = Non-operating profit/Total assets (Equation 5.2)

As the NCI of listed firms may vary based on industry effects, this study corrects for this by subtracting the industry mean of the NCI from sample firms. The industries are measured by the CSRC industry codes[38].

However, non-core income may not completely capture listed firms' earnings management activities in China. It would be relatively hard for non-state controlled

[36] It is also called as non-operating income.

[37] Non-operating revenue includes income from investment, gains, disposal of fixed assets, government subsidy, and other non-operating income.

[38] There are 13 industries being identified based on the CSRC industry code.

listed firms to facilitate related party transactions and classify the profits and losses as non-core items, as these firms are more independent[39] (Jian and Wong, 2004; Ding, Zhang and Zhang, 2007). Haw et al. (2005) suggest that listed firms adopt both non-core income and discretionary accruals to manipulate earnings in China. Haw et al. (2005) argue that, as a means of earnings management, discretionary accruals are less apparent than non-core income, and are harder to detect. As such, this study also employs discretionary accruals as an earnings management measure.

(2) Discretionary accruals[40] ($DACC_{i,t}$, $e_{i,t}$) is defined as the residual of the following regression：

$$(\text{Total accrual}_{i,t}/\text{Total assets}_{i,t-1}) = \alpha_1 (1/\text{Total assets}_{i,t-1}) + \alpha_2 (\Delta\text{Rev}_{i,t}/\text{Total assets}_{i,t-1}) + \alpha_3 (\text{PPE}_{i,t}/\text{Total assets}_{i,t-1}) + \varepsilon_{i,t} \quad \text{(Equation 5.3)}$$

Equation 5.3 was used by Liu and Lu (2007). This model is a modified version of Jones' (1991) model, which is a commonly cited earnings management model. Total accrual ($TACC_{i,t}$) is the difference between net income and cash flows from operating activities. Net income is the difference between total profits and income tax expense. $\Delta\text{Rev}_{i,t}$ is the change in sales revenues from year t-1 to year t for firm i, and $\text{PPE}_{i,t}$ is gross property, plant, and equipment in year t for firm i (I use firm's fixed assets as

[39] Unlike SOEs, non-state controlled listed firms are less likely to be affiliated to any groups.

[40] Liu and Lu (2007, P889) note: "*The earnings management studies in the US prefer to use the difference between earnings before extraordinary items and operating cash flows to measure the total accruals. However, Chinese GAAP does not require the so-called "one-time" items, such as extraordinary items and discontinued operations to be reported separately. On China's standardized income statement, profit from operations is sales revenue less cost of goods sold and operating expenses, plus profits (losses) from non-major operations; total profit includes profit from operations, gains (losses) from disposal of assets and investments, and other revenues and expenses; net income is total profit less income taxes. Thus, both 'above the line' and 'below the line' items in an American income statement are included in China's operating income.*"

the proxy for PPE). I use the OLS regressions to estimate the values in equation 5.3 within each industry and year, and run the OLS regression (equation 5.3) for all non-financial listed firms during the sample period, including firms with and without mutual fund holdings.

(3) Positive discretionary accruals ($PDACC_{i,t}$).

Some studies test for earnings management of a particular sign (income increasing or decreasing), as managers face different earnings management incentives when managing earnings upward versus downward (Jones, 1991; Teoh, Welch, and Wong, 1998b; Koh, 2007). Koh (2007, 271) notes that: *"when managing earnings upwards, managers are likely to utilize as much positive discretionary accruals as necessary to achieve their objectives. In contrast, when managing earnings downwards to create accounting slack, managers are likely to maximize the negative discretionary accruals to create maximum slack for future periods."* As this study pays more attention to earnings management that aims to increase the share price, I employ positive discretionary accruals (PDACC) as the third proxy for earnings management.

5.2.4.2 Main explanatory variables

In this chapter, I employ contemporaneous listed firms' earnings management measures and one-quarter lagged (at the end of the third quarter of each year during the sample period) values of mutual funds' ownership in the analysis. The lag allows for the effect of change in mutual funds' ownership to show up in future earnings management activities. The main explanatory variables are:

(1) ALLT. ALLT is total mutual funds' ownership measured by the number of listed firm's tradable shares. It includes all types of mutual funds' ownership[41].

(2) LT. LT is the long-term mutual funds' ownership (including both dedicated and quasi-index mutual funds' ownership) measured by the number of listed firm's tradable shares.

(3) TT. TT is the transient mutual funds' ownership measured by the number of listed firm's tradable shares.

5.2.4.3 Other explanatory variables

(1) TOP. TOP measures the largest shareholder's ownership. Concentrated ownership structure is pervasive in Chinese stock markets, with controlling shareholders able to take advantage of minority shareholders when there is only one ultimate firm owner. Listed firms' earnings management are more likely to be facilitated by the controlling shareholders among firms with concentrated ownership structure (Liu and Lu, 2007). I expect a positive relation between TOP and listed company's earnings management proxies.

(2) MGN. MGN is the percentage of shares held by executives, including the CEO, board chair, vice board chair, and other directors. MGN controls for the management's interests in a listed firm. Some studies argue that, in many cases, managers are appointed by the controlling shareholders and their ownership is small, so that managerial ownership is not likely to influence accounting quality in China (Firth, Fung and Rui, 2007b; Liu and Lu, 2007). However, as a representative of the

[41] This study does not make any specific hypotheses on the relationship between ALL and listed firms' earnings management.

government, state controlling shareholders may be much less effective in monitoring managers than private shareholders (Huang, Shen and Sun, 2011). Further, according to the literature on the US market, managers have incentives to manipulate the earnings for the sake of their job tenure and compensation (Fudenberg and Tirole, 1995; Cheng and Warfield, 2005; Bergstresser and Philippon, 2006). Because of the contradictory opinions on managerial ownership, I do not have any specific expectations about MGN.

(3) STATE. STATE is the state ownership of listed firms, including state-owned shareholdings and state-owned legal person shareholdings. State-controlled firms can get more financial support from the government and have a better chance of issuing new shares. They may also be less motivated to manage earnings than non-state controlled listed firms. Therefore, I expect a negative relationship between STATE and earnings management measures. I include the variable of CTR, which measures the type of listed firms, to double check the result on STATE. CTR is a dummy variable, takes the value of one if a firm is ultimately controlled by a private or foreign entity, zero otherwise (e.g. government and state-owned enterprise).

(4) CEOD. CEOD is a binary dummy variable that measures the CEO duality of listed firms. It takes the value of one if the CEO also holds the position of the chairman of the board of directors, and zero otherwise. Splitting board chair and the CEO can facilitate more effective monitoring and control of the CEO, indicating a more independent board of directors (Rechner and Dalton, 1991; Liu and Lu, 2007). Liu and Lu (2007) argue that it is more difficult for minority shareholders to have a say on important issues when the CEO is also the board chair, and the controlling

shareholder would have larger discretionary power over firm's financial reporting. I expect a positive relationship between CEOD and earnings management proxies.

(5) UD. UD measures the ratio of the number of directors not receiving any payments from listed firms to the total number of directors. Some studies use independent director ratio to control for the effect of outside directors. As the CSRC requires listed firms to have at least one third of board members to be independent directors[42], the independent director ratio for most listed firms would be quite similar. I believe the unpaid director ratio can better estimate the ratio of outside directors. Fan, Lau and Young (2007) find that outside directors have a positive effect on CEO monitoring. If so, they could also have an impact on earnings management activities. However, some other studies argue that independent/outside directors are not really independent, but are connected to the CEO or board chair (Qiu and Yao, 2009; Liao, Sun and Young. 2009ab). As such, I do not have any specific expectations on the relation between UD and earnings management measures.

(6) DE. DE measures listed firms' debt to equity ratio. The literature argues that listed firms facing financial distress are motivated to manage earnings to avoid the share price depreciation resulting from disclosing a financial problem, or to prevent unnecessary technical violations of debt agreements in the US (Park and Shin, 2004; Koh, 2007). However, the evidence on the relation between financial leverage and earnings management in China is mixed. Ding, Zhang and Zhang (2007) and Bo and Wu (2009) find that listed firms' financial leverage is not significantly associated with earnings management. In contrast, Lei and Liu (2006) find that listed firms' financial

[42] Guidelines for Introducing Independent Directors to the Board of Directors of Listed Companies", CSRC, 16th August 2001.

leverage is negatively associated with earnings management. Lei and Liu argue that it is easier for firms with a higher debt to equity ratio (firms with relatively small equity) to manage earnings to get a higher ROE. ROE is the key financial ratio, which determines listed firms' rights issues and seasoned equity offerings in China. Given this mixed evidence, I do not have any specific expectations about the relationship between DE and earnings management measures.

(7) SGR. SGR measures listed firms' sales growth rates, and is included to control for the impact of firm growth/investment opportunities on earnings management activities. Skinner and Sloan (2002) argue that US listed firms with higher growth rates or more investment opportunities would have incentives to manage earnings to avoid earnings disappointment. However, firms with more sales revenue could be more profitable, and hence need less earnings management to adjust financial reporting. I do not have any specific expectation on the relation between SGR and earnings management measures in this study.

(8) ISSUE. ISSUE is another binary dummy variable. It takes the value of one if a firm issued new shares (including IPO, rights issue and seasoned equity offering) in the previous year, zero otherwise. Previous studies suggest that listed firms may adjust their earnings upwards before issuing new shares in China, as firms are eager to increase the chances of a successful issue, or to have higher issuing prices (Yu, Du and Sun, 2006; Kao, Wu and Yang, 2009). Therefore, listed firms that have issued new shares in the previous year may be less likely to manage their earnings afterwards. I expect a negative relationship between ISSUE and earnings management measures.

(9) SIZE. SIZE is defined as the log value of listed firms' total assets. It controls for firms' undetermined size effect.

(10) Year Dummies. Year dummies[43] are employed to control for changes in macroeconomic environment common to all listed companies over the sample period.

This study does not include any variable that controls for listed firms' motivation to manage earnings when facing the risk of delisting from the secondary markets in China. This is because mutual funds are generally unwilling to invest in firms that face such a risk (i.e. have consecutive losses). There are extremely few "ST" and "*ST" firms in the sample of this study (only 12 out of 1623 observations are "ST" or "*ST" firms). Thus, it is not necessary for this study to control for listed firms' motivation to adjust earnings when facing the risk of delisting.

5.2.4.4 The OLS regressions:

The OLS regression is used to examine the impact of mutual funds on listed firms' earnings management activities. The OLS regressions are:

$$NCI_{i,t}=\alpha_0+\alpha_1 MF_{i,t-1}+\alpha_2 TOP_{i,t}+\alpha_3 MGN_{i,t}+\alpha_4 STATE_{i,t}+\alpha_5 CEOD_{i,t}+\alpha_6 UD_{i,t}+\alpha_7 DE_{i,t}+\alpha_8 SGR+\alpha_9 ISSUE+\alpha_{10} SIZE_{i,t}+years+\varepsilon_{i,t} \quad \text{(Equation 5.4)}$$

$$DACC_{i,t}=\alpha_0+\alpha_1 MF_{i,t-1}+\alpha_2 TOP_{i,t}+\alpha_3 MGN_{i,t}+\alpha_4 STATE_{i,t}+\alpha_5 CEOD_{i,t}+\alpha_6 UD_{i,t}+\alpha_7 DE_{i,t}+\alpha_8 SGR+\alpha_9 ISSUE+\alpha_{10} SIZE_{i,t}+years+\varepsilon_{i,t} \quad \text{(Equation 5.5)}$$

[43] For example, year dummy 2005 takes the value of 1 if current year is 2005, and 0 otherwise.

$$PDACC_{i,t}=\alpha_0+\alpha_1 MF_{i,t-1}+\alpha_2 TOP_{i,t}+\alpha_3 MGN_{i,t}+\alpha_4 STATE_{i,t}+\alpha_5 CEOD_{i,t}+\alpha_6 UD_{i,t}+\alpha_7 DE_{i,t}$$
$$+\alpha_8 SGR+\alpha_9 ISSUE+\alpha_{10} SIZE_{i,t}+years+\varepsilon_{i,t} \quad \text{(Equation 5.6)}$$

"t-1" means that the shareholdings of mutual funds are at the end of the third quarter of each year during the sample period; while "t" means that the values of variables are at the end of each year during the sample period. The variable MF refers to different types of mutual funds' ownership (ALLT, LT and TT).

5.3 Empirical results

5.3.1 Descriptive statistics

Table 5.1 provides descriptive statistics of variables used in this study. On average, the industry-adjusted NCI of listed firms with mutual fund ownership is -0.008, although it can be as high as 0.191. The average DACC is 0.013. PDACC is the positive value of DACC; only 900 observations have a positive DACC, with a mean of 0.087. The average of ALLT, TT and LT are 5.87%, 2.58% and 5.09%, respectively. The average state ownership of all listed firms in the sample is 29.05%. There are only 137 CEOD having the value of one, indicating that the CEO does not hold the position of board chair in most firms in the sample. The average UD (unpaid director) ratio is around 40%. On average, listed firms' debt to equity ratio is around 1.300, although it ranges from 0.021 to 28.746. The average sales growth rate of sample firms is 0.167. Only 9.70% of sample firms issued new shares[44] in the previous year during the sample period.

[44] Although seasoned equity offerings are popular in China, during the sample period, due to the non-tradable share reform causing underperformance of stock markets, the issues of new shares reduced significantly.

Table 5.1 Descriptive statistics

Variable	N	Mean	Std Dev	Minimum	Maximum
NCI	1623	-0.008	0.026	-0.147	0.191
DACC	1623	0.013	0.136	-1.089	1.794
PDACC	900	0.087	0.117	0.0001	1.794
ALLT	1623	5.87%	0.072	0.01%	64.14%
TT	1074	2.58%	0.031	0.004%	21.23%
LT	1327	5.09%	0.061	0.003%	63.20%
TOP	1623	41.49%	0.167	0.061	0.864
MGN	1623	2.31%	0.091	0	0.736
STATE	1623	29.05%	25.95%	0	89.78%
CEOD	1623	0.084	0.277	0	1
UD	1623	0.416	0.316	0	1
DE	1623	1.298	1.428	0.021	28.746
SGR	1623	0.167	0.355	-0.875	0.922
ISSUE	1623	0.097	0.296	0	1
SIZE	1623	9.726	0.535	8.401	12.162

Table 5.1 reports the descriptive statistics of the variables. (1) NCI is listed firm's industry-adjusted non-core income scaled by its book value of total assets. (2) DACC is listed firm's discretionary accruals. (3) PDACC is positive discretionary accruals. (4) ALLT is total mutual funds' ownership in a listed firm measured by the number of listed firm's tradable shares. It includes all types of mutual funds' ownership in a listed firm. (5) TT and LT are transient and long-term mutual funds' ownership measured by the number of listed firm's tradable shares, respectively. (6) TOP is the largest shareholder's ownership. (7) MGN is managerial ownership. (8) STATE is state ownership, including state-owned and state-owned legal person shareholdings. (9) CEOD is a dummy variable, takes the value of one if CEO also holds the position of board chair, and zero otherwise. (10) UD is the ratio of the number of directors not receiving any payment from listed firm to the total number of directors. (11) DE is debt to equity ratio. (12) SGR is sales growth rate. (13) ISSUE is a dummy variable, takes the value of one if the firm issued new shares in the previous year, and zero otherwise. (14) SIZE is the log value of total assets.

5.3.2 Pearson correlations

Table 5.2 shows the Pearson correlations. Among the correlations between independent variables, only that between TOP and STATE is above 0.5. Although the correlation between TOP and STATE is high (0.554), it is smaller than 0.7[45]. As such, this study includes all independent variables in the same regression. The correlations of independent variables are not high enough to cause multicollinearity in this study.

[45] I also use VIF test to test the correlations among independent variables. The result also shows that the correlations are not high enough to cause the multicollinearity in this study.

Table 5.2 Pearson correlations

	NCI	DACC	ALLT	TOP	MGN	STATE	CEOD	UD	DE	SGR	ISSUE	SIZE
NCI	1	0.112***	-0.113***	-0.087***	0.049**	-0.101***	0.012	0.063**	0.113***	-0.011	0.035	0.011
P-value		*<.0001*	*<.0001*	*0.0004*	*0.046*	*<.0001*	*0.622*	*0.011*	*<.0001*	*0.649*	*0.156*	*0.657*
DACC		1	0.038	-0.001	0.097***	-0.047*	0.013	0.042*	-0.088***	0.029	0.018	-0.014
P-value			*0.127*	*0.967*	*<.0001*	*0.059*	*0.615*	*0.087*	*0.0004*	*0.238*	*0.468*	*0.583*
ALLT			1	-0.085***	-0.045*	-0.050**	0.001	-0.065***	-0.003	-0.001	-0.069***	0.127***
P-value				*0.001*	*0.072*	*0.042*	*0.975*	*0.009*	*0.905*	*0.984*	*0.006*	*<.0001*
TOP				1	-0.164***	0.554***	-0.045*	0.224***	-0.021	0.033	0.011	0.304***
P-value					*<.0001*	*<.0001*	*0.068*	*<.0001*	*0.405*	*0.183*	*0.666*	*<.0001*
MGN					1.000	-0.266***	0.128****	-0.182***	-0.071***	0.004	0.191***	-0.227***
P-value						*<.0001*	*<.0001*	*<.0001*	*0.004*	*0.881*	*<.0001*	*<.0001*
STATE						1	-0.152***	0.269***	0.013	0.033	-0.059**	0.251***
P-value							*<.0001*	*<.0001*	*0.615*	*0.187*	*0.018*	*<.0001*
CEOD							1	-0.133***	-0.075***	0.009	0.059**	-0.132***
P-value								*<.0001*	*0.002*	*0.721*	*0.017*	*<.0001*
UD								1	0.026	-0.014	-0.064***	0.149***
P-value									*0.293*	*0.574*	*0.010*	*<.0001*
DE									1	-0.048*	-0.026	0.261***
P-value										*0.051*	*0.304*	*<.0001*
SGR										1	0.010	-0.033
P-value											*0.700*	*0.182*
ISSUE											1	0.014
P-value												*0.569*
SIZE												1

Table 5.2 reports the results of the Pearson Correlation. (1) NCI is listed firm's industry-adjusted non-core income scaled by its book value of total assets. (2) DACC is listed firm's discretionary accruals. (3) PDACC is positive discretionary accruals. (4) ALLT is total mutual funds' ownership in a listed firm measured by the number of listed firm's tradable shares. It includes all types of mutual funds' ownership in a listed firm. (5) T is transient mutual funds' ownership measured by the number of listed firm's tradable shares. (6) L is long-term focused (including dedicated and quasi-index) mutual funds' ownership measured by the number of listed firm's tradable shares. (7) TOP is the largest shareholder's ownership. (8) MGN is managerial ownership. (9) STATE is state ownership, including state-owned shareholdings and state-owned legal person shareholdings. (10) CEOD is a dummy variable, takes the value of one if CEO also holds the position of board chair, and zero otherwise. (11) UD is the ratio of the number of directors not receiving any payment from the firm to the total number of directors. (12) DE is listed firm's debt to equity ratio. (13) SGR is sales growth rate. (14) ISSUE is a dummy variable, takes the value of one if the firm issued new shares in the previous year, and zero otherwise. (15) SIZE is the log value of total assets.

*, **, *** represent the statistical significance at the 0.1, 0.05, and 0.01 levels, respectively (two-sided).

5.3.3 The earnings management of firms with and without mutual funds' ownership

If mutual funds could influence listed firms' earnings management, firms with or without mutual fund ownership would have different levels of earnings management. I use t-test and Wilcoxon test to examine whether there are any differences between the earnings management of such firms. The results, in Table 5.1, show that the industry-adjusted NCI of firms with fund ownership is significantly lower than that of firms without fund ownership. Further, firms with fund ownership have higher DACC. However, the results on PDACC are mixed. While the median of the PDACC of firms with fund ownership is significantly higher, the mean PDACC of the two groups does not differ significantly.

Table 5.3 The differences in the earnings management between firms with and without mutual funds' ownership

	Listed firms with fund ownership			Listed firms without fund ownership			Differences	
EM	N	Mean *(t-stat)*	Median	N	Mean *(t-stat)*	Median	Mean Diff *(t-stat)*	Median Diff *(p-value)*
RAW_NCI	1623	0. 004 *(13. 629)*	0. 001	6656	0. 007 *(7. 500)*	0. 001	−0. 003 *(1. 31)*	0. 001 *(0. 777)*
ADJ_NCI	1623	-0.008 *(-12.396)*	-0.006	6656	0.002 *(4.427)*	0.001	-0.010*** *(8.43)*	−0. 007*** *(0. 001)*
DACC	1623	0.013 *(3.851)*	0.009	6656	-0.007 *(-3.038)*	-0.001	0.020*** *(4.06)*	0. 010*** *(0. 001)*
PDACC	900	0.087 *(22.308)*	0.056	3277	0.08 *(18.318)*	0.048	0.007 *(1.43)*	0. 008*** *(0. 001)*

(1) RAW_NCI is listed firm's non-core income scaled by its book value of total assets (2) ADJ_NCI is listed firm's industry-adjusted non-core income scaled by its book value of total assets. (3) DACC is listed firm's discretionary accruals. (4) PDACC is the positive discretionary accruals.
*, **, *** represent the statistical significance at the 0.1, 0.05, and 0.01 levels, respectively (two-sided).

5.3.4 Multivariate results

This study employs heteroskedasticity-consistent standard error (HCSE) estimators in the OLS regressions due to the concern of heteroskedasticity. All the *p-values* are based on HCSE. Table 5.4 reports the results of the OLS regressions that use ALL, T and L as the main independent variables. When NCI is used as the dependent variable, the coefficients of ALLT, LT and TT are all significantly negative. This suggests that all types of mutual funds would restrict listed firms from increasing non-core items. When DACC and PDACC are used as the dependent variables, the coefficients of ALLT and LT become insignificant, while TT is significantly and positively associated with PDACC at the 5% level. This supports the hypothesis *H2*, and indicates that only transient mutual funds' ownership is positively associated with discretionary accruals. It is noteworthy that the coefficient of TT in regression 9, where PDACC is the dependent variable, is almost three times of that in regression 3, where NCI is the dependent variable. Given that non-core income is apparent, and a high level of non-core income may shake the confidence of investors (Haw et al. 2005), decreasing non-core income may have a positive, instead of negative, impact on stock prices. As such, by controlling non-core income, but increasing discretionary accruals, transient mutual funds can drive up listed firms' current earnings in a more subtle way.

The coefficients of TOP are either significantly negative or insignificant, which suggests that the larger the top shareholdings, the lower the corporate earnings management, especially non-core income management. This is not consistent with expectations. The coefficients of STATE are either significantly negative or

insignificant, which is consistent with expectations, and suggests that state shareholders do not favour earnings management. Note that the majority of the largest shareholders of listed firms would be state or state-owned enterprises, as state-controlled listed firms are still the major players in the Chinese stock markets. Therefore, the relationship between the largest shareholders and earnings management could be partly driven by state shareholders. Most of the coefficients of MGN are significantly positive at either the 1% or 5% levels, which indicates that management may manipulate earnings for personal interests. Most of the coefficients of UD are also significantly positive at the 1%, 5% and 10% levels. This suggests that outside/independent directors are not really independent and may be connected with the management. The coefficients of DE are significantly and positively associated with NCI, but significantly and negatively associated with DACC. The results are similar to that of Lei and Liu (2006), and suggest that listed firms with more debt tend to use more non-core income and less discretionary accruals to manage their earnings, and vice versa. This is not surprising, as listed firms in financial distress may be eager to escape the risk of delisting, and non-core income management is an easy and efficient way to manipulate earnings. The coefficients of SGR are either significantly negative or insignificant, which suggests that listed firms with a high sales growth rate are less likely to manage earnings.

Mutual funds are more sophisticated than individual investors, and are more capable of detecting earnings management activities. Long-term mutual funds may select the listed firms with less earnings management to invest in, while transient funds may choose firms with more such management. Thus, there would be a potential endogeneity between mutual funds' ownership and listed firms' earnings

management. This study uses one-quarter lagged values of mutual funds' ownership as the main dependent variables. However, the lagged mutual funds' ownership may not completely mitigate the potential endogeneity, as mutual funds' ownership may persist over time. As such, I then model the potential endogeneity by using a 2SLS regression method. The key of this approach is the identification of at least one appropriate instrument for mutual funds' ownership in the first stage (Liu and Lu, 2007). As such, in the first stage, I employ listed firm's market beta coefficient (BETA) and log value of trading value (TVA) are used as the instrument variables to predict long-term and short-term mutual funds' ownership, which is measured by using both the number of total and tradable shares. BETA is estimated using daily returns, while TVA is the sum of a listed firm's daily trading value in each year, rather than just the year-end data. Among the corporate characteristics, listed firm's market beta coefficient and trading value are unlikely to be closely correlated with earnings management proxies. As the preferences of long-term and transient mutual funds for firm attributes are highly different, ownership is predicted by different instrument variables in the first stage. The un-tabulated results from the first-stage instrumental model show that long-term and transient mutual funds' ownership is significantly and positively associated with BETA and TVA at the 1% and 5% levels. The predicted mutual funds' ownership is then used in the OLS regressions of stage two. The relation between mutual funds' ownership, which is predicted by the BETA or TVA, and earnings management proxies would not be affected by the potential endogeneity, if there were any. Table 5.5 reports the results of the second stage. These are even stronger than those reported in table 5.4, showing that the empirical results are robust to the 2SLS regression method, and are not affected by the potential endogeneity.

Table 5.4 The effect of mutual funds' holdings on earnings management (based on listed firms' tradable shares)

	NCI			DACC			PDACC		
Regression	1	2	3	4	5	6	7	8	9
Intercept	-0.017	-0.021	-0.011	-0.058	-0.083	-0.067	-0.045	-0.094	-0.205
P-value	*0.234*	*0.209*	*0.463*	*0.602*	*0.519*	*0.631*	*0.810*	*0.667*	*0.380*
ALLT	-0.049***			0.009			0.031		
P-value	*0.0003*			*0.859*			*0.489*		
LT		-0.036*			-0.010			-0.017	
P-value		*0.058*			*0.857*			*0.742*	
TT			-0.137***			0.117			0.397**
P-value			*<.0001*			*0.540*			*0.016*
TOP	-0.011**	-0.015***	-0.018***	0.003	-0.015	-0.040	-0.026	-0.034	-0.069**
P-value	*0.024*	*0.003*	*0.003*	*0.897*	*0.541*	*0.138*	*0.337*	*0.268*	*0.030*
MGN	0.012**	0.016**	0.008	0.155***	0.147***	0.114**	0.106***	0.084**	0.111**
P-value	*0.022*	*0.020*	*0.218*	*<.0001*	*0.0003*	*0.024*	*0.005*	*0.041*	*0.039*
STATE	-0.002	-0.004	-0.009**	-0.020**	-0.025	-0.033	-0.047	-0.046	-0.078*
P-value	*0.491*	*0.379*	*0.033*	*0.012*	*0.301*	*0.233*	*0.127*	*0.201*	*0.061*
CEOD	0.002	0.002	0.0002	0.001	0.013	-0.006	-0.003	0.002	-0.006
P-value	*0.308*	*0.395*	*0.930*	*0.946*	*0.238*	*0.676*	*0.732*	*0.860*	*0.602*
UD	0.008***	0.009***	0.008***	0.027**	0.028**	0.043***	0.021	0.023	0.031**
P-value	*0.001*	*0.001*	*0.0002*	*0.022*	*0.041*	*0.004*	*0.108*	*0.136*	*0.048*
DE	0.002***	0.002***	0.002***	-0.009***	-0.010**	-0.008**	-0.003	-0.004	-0.004
P-value	*0.0003*	*0.0004*	*0.002*	*0.007*	*0.011*	*0.040*	*0.245*	*0.142*	*0.221*
SGR	-0.007**	-0.005*	-0.017***	-0.035	-0.012	-0.086*	-0.027	0.001	-0.065
P-value	*0.045*	*0.085*	*0.004*	*0.127*	*0.398*	*0.058*	*0.307*	*0.945*	*0.314*
ISSUE	0.003	0.005*	-0.0003	0.001	-0.002	0.017	0.003	0.001	0.014
P-value	*0.141*	*0.074*	*0.879*	*0.892*	*0.888*	*0.228*	*0.818*	*0.940*	*0.375*
SIZE	0.001	0.001	0.0005	0.008	0.012	0.010	0.016	0.022	0.033
P-value	*0.601*	*0.531*	*0.762*	*0.487*	*0.380*	*0.498*	*0.399*	*0.325*	*0.188*
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-square	6.77%	6.07%	9.66%	2.81%	3.02%	3.18%	6.64%	6.86%	9.03%
Adj. R-square	5.89%	5.00%	8.38%	1.90%	1.91%	1.80%	5.05%	4.94%	6.70%
No. of Obs.	1623	1074	1327	1623	1074	1327	900	601	742

Table 5.4 reports the results of the OLS regressions. The p-values are based on heteroskedasticity-consistent standard errors that are robust to unknown heteroskedasticity. (1) NCI is listed firm's industry-adjusted non-core income scaled by its book value of total assets. (2) DACC is listed firm's discretionary accruals. (3) PDACC is positive discretionary accruals. (4) ALLT is total mutual funds' ownership in a listed firm measured by the number of listed firm's tradable shares. It includes all types of mutual funds' ownership in a listed firm. (5) TT is transient mutual funds' ownership measured by the number tradable shares. (6) LT is long-term focused (including dedicated and quasi-index) mutual funds' ownership measured by the number tradable shares. (7) TOP is the largest shareholder's ownership. (8) MGN is managerial ownership. (9) STATE is state ownership, including state-owned shareholdings and state-owned legal person shareholdings. (10) CEOD is a dummy variable, takes the value of one if CEO also holds the position of board chair, and zero otherwise. (11) UD is the ratio of the number of directors not receiving any payment from the firm to the total number of directors. (12) DE is listed firm's debt to equity ratio. (13) SGR is sales growth rate. (14) ISSUE is a dummy variable, takes the value of one if the firm issued new shares in the previous year, and zero otherwise. (15) SIZE is the log value of total assets.
*, **, *** represent the statistical significance at the 0.1, 0.05, and 0.01 levels, respectively (two-sided).

Table 5.5 2SLS results on the effect of mutual funds' holdings on earnings management (based on listed firms' tradable shares)

	NCI			DACC			PDACC		
Regression	1	2	3	4	5	6	7	8	9
Intercept	0.002	-0.004	-0.061***	-0.006	-0.026	0.137	-0.004	-0.053	-0.085
P-value	*0.866*	*0.804*	*0.001*	*0.953*	*0.835*	*0.334*	*0.981*	*0.811*	*0.710*
ALLTP	-0.716***			-0.872			-1.225		
P-value	*<.0001*			*0.269*			*0.199*		
LTP		-0.423***			-0.414			-0.343	
P-value		*<.0001*			*0.390*			*0.586*	
TTP			-1.686***			6.354***			3.274*
P-value			*<.0001*			*0.003*			*0.096*
TOP	-0.009*	-0.010*	-0.015**	0.015	0.001	-0.009	-0.004	-0.011	-0.026
P-value	*0.094*	*0.078*	*0.014*	*0.558*	*0.962*	*0.782*	*0.917*	*0.768*	*0.552*
MGN	0.014***	0.018***	0.003	0.150***	0.139***	0.108**	0.088***	0.062*	0.074*
P-value	*0.008*	*0.007*	*0.657*	*<.0001*	*0.001*	*0.026*	*0.010*	*0.085*	*0.079*
STATE	-0.004	-0.004	-0.010**	-0.017	-0.022	-0.033	-0.048	-0.050	-0.075
P-value	*0.311*	*0.282*	*0.015*	*0.412*	*0.365*	*0.248*	*0.126*	*0.174*	*0.103*
CEOD	0.001	0.002	-0.001	-0.001	0.010	-0.006	-0.006	-0.002	-0.011
P-value	*0.550*	*0.569*	*0.684*	*0.941*	*0.337*	*0.660*	*0.520*	*0.808*	*0.378*
UD	0.007***	0.008***	0.010***	0.027**	0.028*	0.045***	0.026*	0.029	0.036*
P-value	*0.002*	*0.002*	*<.0001*	*0.037*	*0.065*	*0.005*	*0.088*	*0.113*	*0.061*
DE	0.002***	0.002***	0.001***	-0.009***	-0.009**	-0.005*	-0.004	-0.005	-0.004
P-value	*0.0001*	*0.0003*	*0.006*	*0.008*	*0.011*	*0.099*	*0.186*	*0.105*	*0.232*
SGR	-0.021***	-0.023***	-0.018***	-0.033	-0.034	-0.033	0.025	0.021	0.062
P-value	*<.0001*	*<.0001*	*<.0001*	*0.175*	*0.210*	*0.317*	*0.269*	*0.405*	*0.101*
ISSUE	0.004**	0.006**	0.001	0.001	-0.002	0.014	-0.003	-0.002	0.007
P-value	*0.044*	*0.025*	*0.905*	*0.929*	*0.887*	*0.301*	*0.818*	*0.845*	*0.668*
SIZE	0.001	0.002	0.008***	0.006	0.008	-0.022	0.016	0.020	0.015
P-value	*0.508*	*0.336*	*0.001*	*0.592*	*0.504*	*0.191*	*0.373*	*0.355*	*0.554*
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-square	9.12%	10.27%	10.93%	2.90%	3.10%	3.87%	5.69%	5.62%	7.98%
Adj. R-square	8.27%	9.24%	9.66%	2.00%	1.99%	2.51%	4.09%	3.67%	5.62%
No. of Obs.	1623	1327	1074	1623	1327	1074	900	742	601

Table 5.5 reports the results of the OLS regressions. The p-values are based on heteroskedasticity-consistent standard errors that are robust to unknown heteroskedasticity. (1) NCI is listed firm's industry-adjusted non-core income scaled by its book value of total assets. (2) DACC is listed firm's discretionary accruals. (3) PDACC is positive discretionary accruals. (4) ALLTP is total mutual funds' ownership (measured by the number tradable shares) predicted by listed firms' beta coefficients. (5) LTP is long-term focused (including dedicated and quasi-index) mutual funds' ownership (measured by the number of tradable shares) predicted by listed firms' beta coefficients. (6) TTP is transient mutual funds' ownership (measured by the number of tradable shares) predicted by listed firms' trading value. (7) TOP is the largest shareholder's ownership. (8) MGN is managerial ownership. (9) STATE is state ownership, including state-owned shareholdings and state-owned legal person shareholdings. (10) CEOD is a dummy variable, takes the value of one if CEO also holds the position of board chair, and zero otherwise. (11) UD is the ratio of the number of directors not receiving any payment from the firm to the total number of directors. (12) DE is listed firm's debt to equity ratio. (13) SGR is sales growth rate. (14) ISSUE is a dummy variable, takes the value of one if the firm issued new shares in the previous year, and zero otherwise. (15) SIZE is the log value of total assets.

*, **, *** represent the statistical significance at the 0.1, 0.05, and 0.01 levels, respectively (two-sided).

5.4 Robustness tests

5.4.1 Mutual fund holdings as a fraction of the number of total shares on issue

In order to give a full picture of the impact of mutual funds' ownership on earnings management, I further employ the total number of shares (including both tradable and non-tradable shares) to measure mutual funds' ownership, and repeat the OLS regressions and 2SLS regressions. When measured this way, the average total mutual fund ownership in a listed firm drops from 5.87% to 3.06%. The average long-term and transient mutual fund ownership drops from 5.09% and 2.58% to 2.61% and 1.39%, respectively. Nonetheless, the results, reported in Tables 5.6 (results of the OLS regressions) and 5.7 (results of the 2SLS regressions), are consistent with those previously attained (see Tables 5.4 and 5.5). Moreover, the coefficients of T and L in Tables 5.6 and 5.7 become even higher (in absolute value) than those in Tables 5.4 and 5.5. Therefore, the empirical results are robust in regard to mutual fund ownership, when measured by both the number of total and tradable shares.

Table 5.6 The effect of mutual funds' holdings on earnings management (based on listed firms' total shares)

	NCI			DACC			PDACC		
Regression	1	2	3	4	5	6	7	8	9
Intercept	-0.017	-0.010	-0.021	-0.048	-0.072	-0.078	-0.042	-0.203	-0.095
P-value	*0.242*	*0.500*	*0.200*	*0.664*	*0.603*	*0.541*	*0.821*	*0.387*	*0.662*
ALL	-0.097***			0.137			0.086		
P-value	*<.0001*			*0.113*			*0.347*		
L		-0.082***			0.073			-0.048	
P-value		*0.007*			*0.484*			*0.655*	
T			-0.244***			0.562*			0.801**
P-value			*<.0001*			*0.097*			*0.020*
TOP	-0.015***	-0.024***	-0.018***	0.006	-0.032	-0.014	-0.022	-0.051*	-0.035
P-value	*0.003*	*0.0002*	*0.001*	*0.772*	*0.221*	*0.572*	*0.387*	*0.090*	*0.241*
MGN	0.010*	0.005	0.015**	0.157***	0.120**	0.147***	0.108***	0.120**	0.084**
P-value	*0.054*	*0.458*	*0.031*	*<.0001*	*0.018*	*0.0003*	*0.004*	*0.025*	*0.042*
STATE	-0.004	-0.011***	-0.005	-0.019**	-0.031**	-0.025**	-0.046	-0.070	-0.046
P-value	*0.233*	*0.009*	*0.181*	*0.015*	*0.038*	*0.021*	*0.187*	*0.193*	*0.180*
CEOD	0.002	-0.0001	0.002	0.001	-0.007	0.013	-0.003	-0.005	0.002
P-value	*0.376*	*0.958*	*0.427*	*0.956*	*0.641*	*0.245*	*0.746*	*0.644*	*0.868*
UD	0.007***	0.008***	0.009***	0.028**	0.045***	0.029**	0.022*	0.032**	0.023
P-value	*0.001*	*0.003*	*0.001*	*0.017*	*0.003*	*0.038*	*0.099*	*0.039*	*0.137*
DE	0.002***	0.002***	0.002***	-0.009***	-0.008**	-0.009**	-0.003	-0.004	-0.004
P-value	*0.0004*	*0.003*	*0.001*	*0.007*	*0.041*	*0.011*	*0.253*	*0.253*	*0.136*
SGR	-0.007*	-0.005	-0.017***	-0.036	-0.012	-0.087*	-0.027	0.0002	-0.065
P-value	*0.050*	*0.106*	*0.004*	*0.121*	*0.392*	*0.056*	*0.307*	*0.992*	*0.316*
ISSUE	0.003	-0.0005	0.005*	0.002	0.018	-0.001	0.003	0.015	0.001
P-value	*0.147*	*0.785*	*0.079*	*0.822*	*0.201*	*0.932*	*0.799*	*0.343*	*0.949*
SIZE	0.001	0.001	0.001	0.006	0.009	0.011	0.016	0.031	0.023
P-value	*0.496*	*0.656*	*0.443*	*0.577*	*0.522*	*0.409*	*0.412*	*0.211*	*0.317*
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-square	6.76%	9.37%	6.21%	2.94%	3.51%	3.04%	6.67%	9.26%	6.87%
Adj. R-square	5.89%	8.09%	5.13%	2.03%	2.15%	1.94%	5.09%	6.94%	4.95%
No. of Obs.	1623	1074	1327	1623	1074	1327	900	601	742

Table 5.6 reports the results of the OLS regressions. The p-values are based on heteroskedasticity-consistent standard errors that are robust to unknown heteroskedasticity. (1) NCI is listed firm's industry-adjusted non-core income scaled by its book value of total assets. (2) DACC is listed firm's discretionary accruals. (3) PDACC is positive discretionary accruals. (4) ALL is total mutual funds' ownership in a listed firm measured by the number of the listed firm's total shares. It includes all types of mutual funds' ownership in a listed firm. (5) L is long-term focused (including dedicated and quasi-index) mutual funds' ownership measured by the number of listed firm's total shares. (6) T is transient mutual funds' ownership measured by the number of listed firm's total shares. (7) TOP is listed firm's largest shareholder's ownership. (8) MGN is listed firm's managerial ownership. (9) STATE is state ownership, including state-owned shareholdings and state-owned legal person shareholdings. (10) CEOD is a dummy variable, takes the value of one if CEO also holds the position of board chair, and zero otherwise. (11) UD is the ratio of the number of directors not receiving any payment from the firm to the total number of directors. (12) DE is listed firm's debt to equity ratio. (13) SGR is sales growth rate. (14) ISSUE is a dummy variable, takes the value of one if the firm issued new shares in the previous year, and zero otherwise. (15) SIZE is the log value total assets.

*, **, *** represent the statistical significance at the 0.1, 0.05, and 0.01 levels respectively (two-sided).

Table 5.7 2SLS results on the effect of mutual funds' holdings on earnings management (based on listed firms' total shares)

	NCI			DACC			PDACC		
Regression	1	2	3	4	5	6	7	8	9
Intercept	0.007	0.011	-0.053***	-0.042	-0.058	0.106	-0.029	-0.083	-0.101
P-value	*0.630*	*0.570*	*0.001*	*0.715*	*0.681*	*0.441*	*0.882*	*0.727*	*0.656*
ALLP	-0.722***			-0.785			-0.986		
P-value	*<.0001*			*0.323*			*0.300*		
LP		-1.153***			-1.014			-0.395	
P-value		*<.0001*			*0.423*			*0.807*	
TP			-1.231***			4.639***			2.391*
P-value			*<.0001*			*0.003*			*0.096*
TOP	-0.013***	-0.015***	-0.015**	0.003	-0.015	-0.009	-0.026	-0.034	-0.026
P-value	*0.010*	*0.002*	*0.014*	*0.893*	*0.542*	*0.782*	*0.325*	*0.257*	*0.552*
MGN	0.014***	0.018***	0.003**	0.158***	0.148***	0.108	0.110***	0.085**	0.074*
P-value	*0.009*	*0.009*	*0.015*	*<.0001*	*0.000*	*0.248*	*0.003*	*0.033*	*0.079*
STATE	-0.004	-0.005	-0.010	-0.018	-0.024**	-0.033**	-0.046	-0.046	-0.075
P-value	*0.283*	*0.222*	*0.657*	*0.383*	*0.026*	*0.026*	*0.188*	*0.191*	*0.103*
CEOD	0.002	0.002	-0.001	0.001	0.013	-0.006	-0.002	0.002	-0.011
P-value	*0.404*	*0.428*	*0.684*	*0.930*	*0.238*	*0.660*	*0.786*	*0.846*	*0.378*
UD	0.008***	0.009***	0.010***	0.026**	0.028**	0.045***	0.021	0.023	0.036*
P-value	*0.001*	*0.001*	*<.0001*	*0.029*	*0.050*	*0.005*	*0.111*	*0.133*	*0.061*
DE	0.002***	0.002***	0.001***	-0.009***	-0.010***	-0.005*	-0.003	-0.004	-0.004
P-value	*0.001*	*0.001*	*0.006*	*0.007*	*0.010*	*0.099*	*0.218*	*0.124*	*0.232*
SGR	-0.008*	-0.004*	-0.018***	-0.022	-0.026	-0.033	-0.030	-0.003	0.062
P-value	*0.055*	*0.071*	*<.0001*	*0.139*	*0.291*	*0.317*	*0.370*	*0.901*	*0.101*
ISSUE	0.004*	0.005*	0.001	0.001	-0.002	0.014	0.001	0.001	0.007
P-value	*0.087*	*0.056*	*0.905*	*0.926*	*0.872*	*0.301*	*0.903*	*0.943*	*0.668*
SIZE	0.001	0.001	0.008***	0.009	0.012	-0.022	0.018	0.022	0.015
P-value	*0.794*	*0.615*	*0.001*	*0.430*	*0.370*	*0.191*	*0.339*	*0.320*	*0.554*
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-square	6.45%	7.12%	10.93%	2.87%	3.07%	3.87%	6.71%	6.86%	7.98%
Adj. R-square	5.57%	6.06%	9.66%	1.96%	1.96%	2.51%	5.13%	4.94%	5.62%
No. of Obs.	1623	1327	1074	1623	1327	1074	900	742	601

Table 5.7 reports the results of the OLS regressions. The p-values are based on heteroskedasticity-consistent standard errors that are robust to unknown heteroskedasticity. (1) NCI is listed firm's industry-adjusted non-core income over its total assets. (2) DACC is listed firm's discretionary accruals. (3) PDACC is positive discretionary accruals. (4) ALLP is total mutual funds' ownership (measured by the number of listed firm's total shares) predicted by listed firms' beta coefficients. (5) LP is long-term focused (including dedicated and quasi-index) mutual funds' ownership (measured by the number of listed firm's total shares) predicted by listed firms' beta coefficients. (6) TP is transient mutual funds' ownership (measured by the number of listed firm's total shares) predicted by listed firms' trading value. (7) TOP is the largest shareholder's ownership. (8) MGN is managerial ownership. (9) STATE is state ownership, including state-owned shareholdings and state-owned legal person shareholdings. (10) CEOD is a dummy variable, takes the value of one if CEO also holds the position of board chair, and zero otherwise. (11) UD is the ratio of the number of directors not receiving any payment from the firm to the total number of directors. (12) DE is debt to equity ratio. (13) SGR is sales growth rate. (14) ISSUE is a dummy variable, takes the value of one if the firm issued new shares in the previous year, and zero otherwise. (15) SIZE is the log value of total assets.
*, **, *** represent the statistical significance at the 0.1, 0.05, and 0.01 levels respectively (two-sided).

5.5 State-controlled vs non-state-controlled

Aharony, Lee and Wong (2000) and Bo and Wu (2009) argue that state-controlled listed firms can get more support from the government, can more easily survive financial distress, and have a better chance of issuing new shares. As such, state-controlled firms may be less motivated to facilitate earnings management. Bo and Wu (2009) also find that institutional investors have a bigger impact on earnings management in non-state-controlled listed firms. As such, I further split the sample into two sub-samples that separate state-controlled firms from non-state-controlled firms.

The 2SLS regressions are used here, and the results are reported in Tables 5.8 (state-controlled listed firms) and 5.9 (non-state-controlled listed firms). Although the relation between NCI and long-term mutual funds' ownership remain significantly negative in both sub-samples, the coefficient of LTP in Table 5.8 is much smaller than that in Table 5.9. Thus, long-term mutual funds are able to restrict both state-controlled and non-state-controlled listed firms from manipulating non-core items, but the impact is stronger in non-state-controlled listed firms. This is consistent with the argument of Bo and Wu (2009). Moreover, transient mutual funds increase discretionary accruals more in non-state-controlled listed firms.

Table 5.8 2SLS regression results (for state-controlled listed firms)

	NCI			DACC			PDACC		
Regression	1	2	3	4	5	6	7	8	9
Intercept	-0.005	-0.013	-0.068***	-0.032	-0.052	0.049	-0.042	-0.103	-0.148
P-value	*0.748*	*0.452*	*0.001*	*0.788*	*0.712*	*0.747*	*0.837*	*0.675*	*0.564*
ALLTP	-0.631***			-0.638			-0.919		
P-value	*0.001*			*0.471*			*0.399*		
LTP		-0.383***			-0.318			-0.136	
P-value		*0.001*			*0.552*			*0.849*	
TTP			-1.563***			3.897**			1.958
P-value			*<.0001*			*0.021*			*0.183*
TOP	-0.005	-0.005	-0.016*	-0.003	-0.014	-0.049	0.013	-0.002	-0.015
P-value	*0.530*	*0.528*	*0.052*	*0.919*	*0.688*	*0.246*	*0.790*	*0.968*	*0.818*
MGN	0.093**	0.102***	0.024	0.163	0.137	0.431	0.122	0.125	0.446
P-value	*0.011*	*0.005*	*0.403*	*0.366*	*0.468*	*0.161*	*0.518*	*0.544*	*0.239*
STATE	-0.008*	-0.010*	-0.009*	-0.012	-0.020	-0.019	-0.036	-0.033	-0.074
P-value	*0.070*	*0.062*	*0.082*	*0.673*	*0.515*	*0.584*	*0.383*	*0.484*	*0.173*
CEOD	-0.002	-0.003	-0.004	-0.008	-0.001	-0.015	-0.015	-0.015	-0.012
P-value	*0.568*	*0.519*	*0.313*	*0.498*	*0.943*	*0.268*	*0.219*	*0.286*	*0.397*
UD	0.010***	0.011***	0.013***	0.035**	0.036**	0.052***	0.028*	0.030*	0.039**
P-value	*<.0001*	*<.0001*	*<.0001*	*0.014*	*0.030*	*0.003*	*0.066*	*0.096*	*0.049*
DE	0.002***	0.002***	0.002**	-0.010**	-0.010**	-0.007	-0.004	-0.004	-0.005
P-value	*0.001*	*0.001*	*0.016*	*0.020*	*0.035*	*0.121*	*0.173*	*0.116*	*0.200*
SGR	0.001	0.001	-0.020***	0.001	0.001	-0.036	-0.061	-0.078	0.049
P-value	*0.716*	*0.379*	*<.0001*	*0.289*	*0.453*	*0.322*	*0.311*	*0.251*	*0.277*
ISSUE	0.003	0.004	-0.002	-0.002	-0.002	0.011	0.013	0.007	0.022
P-value	*0.269*	*0.134*	*0.303*	*0.913*	*0.914*	*0.568*	*0.468*	*0.696*	*0.372*
SIZE	0.001	0.002	0.011***	0.007	0.010	-0.012	0.018	0.023	0.020
P-value	*0.548*	*0.332*	*<.0001*	*0.533*	*0.478*	*0.499*	*0.364*	*0.325*	*0.473*
Year Dummies	YES	YES	YES	YES	YES	YES	YES	YES	YES
R-square	7.68%	8.55%	14.58%	2.24%	2.31%	4.38%	6.22%	6.95%	7.72%
Adj. R-square	6.53%	7.18%	12.98%	1.02%	0.85%	2.59%	4.06%	4.39%	4.55%
No. of Obs.	1215	1019	819	1215	1019	819	666	562	453

The sample only includes state-controlled firms with fund ownership. The p-values are based on heteroskedasticity-consistent standard errors that are robust to unknown heteroskedasticity. (1) NCI is listed firm's industry-adjusted non-core income scaled by its book value of total assets. (2) DACC is listed firm's discretionary accruals. (3) PDACC is positive discretionary accruals. (4) ALLTP is total mutual funds' ownership (measured by the number tradable shares) predicted by listed firms' beta coefficients. (5) LTP is long-term (including dedicated and quasi-index) mutual funds' ownership (measured by the number of tradable shares) predicted by listed firms' beta coefficients. (6) TTP is transient mutual funds' ownership (measured by the number of tradable shares) predicted by listed firms' beta coefficients. (7) TOP is the largest shareholder's ownership. (8) MGN is managerial ownership. (9) STATE is state ownership, including state-owned shareholdings and state-owned legal person shareholdings. (10) CEOD is a dummy variable, takes the value of one if CEO also holds the position of board chair, and zero otherwise. (11) UD is the ratio of the number of directors not receiving any payment from the firm to the total number of directors. (12) DE is listed firm's debt to equity ratio. (13) SGR is sales growth rate. (14) ISSUE is a dummy variable, takes the value of one if the firm issued new shares in the previous year, and zero otherwise. (15) SIZE is the log value of total assets.

*, **, *** represent the statistical significance at the 0.1, 0.05, and 0.01 levels, respectively (two-sided).

Table 5.9 2SLS regression results (for non-state-controlled listed firms)

	NCI			DACC			PDACC		
Regression	1	2	3	4	5	6	7	8	9
Intercept	0.072	0.099	0.010	0.117	0.091	0.393	0.191	0.081	0.128
P-value	*0.133*	*0.128*	*0.772*	*0.519*	*0.647*	*0.133*	*0.338*	*0.688*	*0.643*
ALLTP	-1.151**			-1.722			-1.944		
P-value	*0.010*			*0.284*			*0.152*		
LTP		-0.733**			-0.934			-0.636	
P-value		*0.014*			*0.362*			*0.446*	
TTP			0.306			8.789**			3.684
P-value			*0.598*			*0.038*			*0.378*
TOP	-0.019***	-0.026***	-0.014*	0.038	0.031	0.086	-0.036	0.049	-0.051
P-value	*0.008*	*0.001*	*0.070*	*0.284*	*0.491*	*0.127*	*0.304*	*0.203*	*0.287*
MGN	0.004	0.004	-0.006	0.138***	0.124***	0.103*	0.077**	0.049	0.067
P-value	*0.539*	*0.658*	*0.399*	*0.001*	*0.008*	*0.060*	*0.032*	*0.203*	*0.158*
CEOD	0.004	0.004	0.002	0.007	0.020	0.006	0.001	0.006	-0.008
P-value	*0.205*	*0.265*	*0.683*	*0.706*	*0.218*	*0.813*	*0.938*	*0.654*	*0.632*
UD	-0.007	-0.011	-0.011	0.005	0.007	0.015	0.002	0.007	0.012
P-value	*0.294*	*0.265*	*0.034 **	*0.853*	*0.831*	*0.667*	*0.953*	*0.839*	*0.696*
DE	0.001	0.001	0.001	-0.005	-0.008*	0.001	0.006	-0.003	0.002
P-value	*0.132*	*0.201*	*0.328*	*0.221*	*0.057*	*0.955*	*0.560*	*0.772*	*0.900*
SGR	-0.001***	-0.001***	-0.006	-0.0001	-0.108	-0.026	-0.001***	-0.001***	0.116***
P-value	*0.001*	*0.003*	*0.400*	*0.666*	*0.743*	*0.723*	*<.0001*	*<.0001*	*0.003*
ISSUE	0.003	0.004	0.003	-0.004	-0.006	0.007	-0.011	0.001	-0.013
P-value	*0.338*	*0.323*	*0.289*	*0.842*	*0.780*	*0.753*	*0.417*	*0.998*	*0.468*
SIZE	-0.004	-0.007	-0.002	-0.005	-0.001	-0.067*	-0.001	0.009	-0.012
P-value	*0.332*	*0.262*	*0.641*	*0.792*	*0.964*	*0.056*	*0.963*	*0.667*	*0.736*
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-square	9.70%	11.70%	6.35%	4.25%	5.93%	5.21%	16.69%	20.70%	21.82%
Adj. R-square	6.49%	7.48%	0.89%	0.84%	1.43%	-0.32%	11.36%	13.97%	13.59%
No. of Obs.	408	308	255	408	308	255	234	180	148

The sample only includes non-state-controlled firms with fund ownership. The p-values are based on heteroskedasticity-consistent standard errors that are robust to unknown heteroskedasticity. (1) NCI is listed firm's industry-adjusted non-core income scaled by its book value of total assets. (2) DACC is listed firm's discretionary accruals. (3) PDACC is positive discretionary accruals. (4) ALLTP is total mutual funds' ownership (measured by the number tradable shares) predicted by listed firms' beta coefficients. (5) LTP is long-term (including dedicated and quasi-index) mutual funds' ownership (measured by the number of tradable shares) predicted by listed firms' beta coefficients. (6) TTP is transient mutual funds' ownership (measured by the number of tradable shares) predicted by listed firms' beta coefficients. (7) TOP is the largest shareholder's ownership. (8) MGN is managerial ownership. (9) STATE is state ownership, including state-owned shareholdings and state-owned legal person shareholdings. (10) CEOD is a dummy variable, takes the value of one if CEO also holds the position of board chair, and zero otherwise. (11) UD is the ratio of the number of directors not receiving any payment from the firm to the total number of directors. (12) DE is listed firm's debt to equity ratio. (13) SGR is sales growth rate. (14) ISSUE is a dummy variable, takes the value of one if the firm issued new shares in the previous year, zero otherwise. (15) SIZE is the log value of total assets.
*, **, *** represent the statistical significance at the 0.1, 0.05, and 0.01 levels, respectively (two-sided).

5.6 Conclusion

Essay Two investigates the impact of long-term and short-term mutual funds on earnings management. It finds that long-term mutual funds can constrain non-core income management, but cannot influence accruals management, which are more sophisticated and subtle. As such, long-term mutual funds cannot provide investors with adequate protection in terms of constraining the opportunistic behaviours of listed firms. On the other hand, transient mutual funds decrease non-core income, but increase discretionary accruals. The effect of transient mutual funds on discretionary accruals is much stronger than that on non-core income. As such, transient mutual funds encourage the listed firms to manage their earnings upwards through a subtle way.

Furthermore, Essay Two splits the whole sample of listed firms into two groups: state-controlled and non-state-controlled listed firms, and repeats the 2SLS regressions. The empirical evidence suggests that the effect of mutual funds on earnings management is stronger in non-state-controlled listed firms than in state-controlled listed firms. Long-term mutual funds decrease non-core income more in non-state-controlled listed firms, while transient mutual funds increase discretionary accruals more in non-state-controlled listed firms. Non-state-controlled listed firms have more incentive to manipulate the earnings, as they do not have as much support from the government as state-controlled listed firms do, and are more difficult to survive the financial distress (Bo and Wu, 2009).

Chapter 6 Mutual Funds and Listed Firms' Dividend Policies in China

6.1 Introduction

The literature suggests several reasons why institutional ownership and payout policies might be related in developed countries. First, cash dividends significantly reduce agency costs, as paying cash dividends puts less money under insiders' control. Short, Zhang and Keasey (2002) show this to be the case for the UK. Second, institutions prefer dividends, because of investor protection rules, such as the prudent-man rule restrictions in the US (Allen, Bernardo and Welch, 2000). Third, institutions gain tax advantages when they receive dividends, and hence, may force listed firms to distribute more cash dividends in the US (Guo and Ni, 2008).

Due to the split share structure, and large state shareholdings in listed firms, the dividend payouts are more complicated in China, and empirical evidence collected in developed countries may not be applicable. The literature argues that shareholders of non-tradable shares prefer cash dividends, while shareholders of tradable shares favour stock dividends (e.g. Wei and Xiao, 2009, Huang, Shen and Sun, 2011). Mutual funds are only permitted to invest in tradable shares in China. As such, they too may prefer stock dividends. However, as cash dividend payments reduce the cash under insiders' control, this may also be of interest to investors. It is noteworthy that tunnelling activities by controlling shareholders are seen as a major problem of the Chinese stock markets (Gao and Kling, 2008; Cheung et al, 2009). As such, mutual funds may favour cash dividends over stock dividends, and be likely to force listed

firms to distribute more cash in China.

These contradictory arguments raise interesting research questions: do mutual funds prefer to hold the shares of listed firms that pay cash or stock dividends? Do mutual funds influence listed firms' dividend policies in China? If yes, what is the impact of mutual funds on listed firms' dividend payouts? By examining mutual funds, both on the aggregate and by differentiating between the mutual funds, this chapter empirically investigates the relationship between mutual funds' holdings and listed firms' dividend payouts in China. I first examine mutual funds' preferences in regard to cash or stock dividends, by using OLS regressions. I then investigate the impact of mutual funds' holdings on the level of cash and stock dividend payments.

The remainder of this chapter is organized as follows: Section 6.2 examines the preferences of mutual funds for dividend-paying stocks; Section 6.3 examines the effect of mutual fund holdings on the dividend policies of listed firms; Section 6.4 checks the robustness of the empirical results; Section 6.5 is the conclusion.

6.2 Mutual funds' preferences for dividend-paying stocks

6.2.1 Research design

6.2.1.1 Hypothesis development

Cash dividend payment is regarded as a signal of good corporate governance, and reduces cash under insiders' control, so individual investors are willing to pay a

premium for cash dividend-paying stocks in China (Eun and Huang, 2007). As such, although mutual funds (regardless of type) are tradable shareholders, they may prefer to invest in firms that pay cash dividends, particularly those that pay high cash dividends. Accordingly, I expect that:

H1: All else being equal, firms that pay cash dividends or pay larger cash dividends will attract more mutual fund investment (including both long-term and short-term mutual funds) than firms that do not pay dividends.

The literature suggests that holders of tradable shares are willing to receive stock dividends from listed firms in China (e.g. Cheng, Fung and Leung, 2009; Wei and Xiao, 2009). Paying stock dividends decreases share prices, which may increase trading activity as shares become more attractive. Moreover, stock dividend payments can also provide investors in tradable shares with significant capital gains, which are tax free for mutual funds and individual investors. Cheng, Fung and Leung (2009) and Anderson et al. (2011) find that listed firms generally have positive abnormal returns surrounding stock dividend announcements in China. As such, all types of mutual funds may prefer to invest in listed firms that pay stock dividends, particularly those that pay high stock dividends[46]. I summarize this expectation in *H2*:

H2: All else being equal, firms that pay stock dividends or pay larger stock dividends will attract more mutual fund investment (including both long-term and short-term mutual funds) than firms that do not pay dividends.

[46] Mutual funds' preferences for both cash and stock dividends are not conflict. In countries with poor corporate governance, investors seem to take whatever dividends they can get, no matter cash or stock dividends. (La Porta et al., 2002a).

6.2.1.2 Sample selection

The sample period for this study is from 2005 to 2009. The sample excludes all financial listed companies (e.g. banks, insurance companies, and investment trusts), as financial firms usually have a different capital structure. Moreover, a firm-year observation should not have missing data. The data used in this study is collected from the China Centre for Economic Research database (CCERDATA) and the China Stock Market Accounting Research database (CSMAR). It is noteworthy that the sample used in this essay, which contains all non-financial listed firms (firms without mutual funds' ownership are also included), is different from those used in the first and second essays.

6.2.1.3 Mutual funds' holdings

Mutual funds are only permitted to invest in tradable shares. Accordingly, mutual funds' ownership is measured as the fraction of their holdings to the number of listed firm's tradable shares in the main tests.

(1) ALLT. ALLT is total mutual fund holdings as a fraction of the number of listed firm's tradable shares. It includes dedicated, transient and quasi-index mutual fund holdings.

(2) LT. LT is long-term mutual fund holdings as a fraction of the number of listed firm's tradable shares. It includes dedicated and quasi-index mutual fund holdings.

(3) TT. TT is transient mutual fund holdings as a fraction of the number of

listed firm's tradable shares.

6.2.1.4 Dividend payouts

Two dummies variables (CD and SD) are used to indicate whether listed firms pay cash or stock dividends during the sample period. CD takes the value of one if a listed firm pays cash dividends in year t, and zero otherwise. SD takes the value of one if a listed firm pays stock dividends in year t, and zero otherwise. I use two variables to measure the level of listed firms' cash dividend payments. I define DPA as the ratio of total amount of cash dividends to the book value of assets, and define CPS as cash dividends per share. Moreover, SPS, which is defined as stock dividends per share, is employed to measure the level of listed firms' stock dividend payments.

6.2.1.5 Control variables

Following Grinstein and Michaely (2005), I control for differences across firms by using four exogenous variables, when testing the preferences of mutual funds for cash or stock dividends: BETA, VA, CAR and SR. BETA is the market beta coefficient, and is estimated using daily returns. VA is defined as the market-to-book ratio. CAR measures the market performance of a listed firm, and is defined as the past 12 months cumulative market adjusted abnormal returns. SR is defined as the log value of sales revenue. Year dummies[47] are also included to control for changes in the macroeconomic environment common to all listed companies over the sample period.

[47] For example, year dummy 2006 takes the value of 1 if current year is 2006, and 0 otherwise.

6.2.2 Research models

OLS regressions are used to test mutual funds' preferences for cash or stock dividends. The regressions are:

$$MT_{i,t}=\alpha_0+\alpha_1 CD_{i,t}+\alpha_2 DPA_{i,t}+\alpha_3 BETA_{i,t}+\alpha_4 CAR_{i,t}+\alpha_5 VA_{i,t}+\alpha_6 SR_{i,t}+years+\varepsilon_{i,t} \quad \text{(Equation 6.1)}$$

$$MT_{i,t}=\alpha_0+\alpha_1 SD_{i,t}+\alpha_2 SPS_{i,t}+\alpha_3 BETA_{i,t}+\alpha_4 CAR_{i,t}+\alpha_5 VA_{i,t}+\alpha_6 SR_{i,t}+years+\varepsilon_{i,t} \quad \text{(Equation 6.2)}$$

$MT_{i,t}$ refers to different types of mutual funds' holdings ($ALLT_{i,t}$, $LT_{i,t}$, and $TT_{i,t}$) as a percentage of the number of listed firms' tradable shares outstanding as of December 31 of year t. $CD_{i,t}$ or $SD_{i,t}$ is dividend dummies, which take the value of one if a listed firm pays cash or stock dividends in year t, and zero otherwise. $DPA_{i,t}$ is total amount of cash dividends scaled by the book value of total assets in year t. $SPS_{i,t}$ is stock dividend per share in year t. Most listed firms announce and distribute dividends before or in the middle of each year based on the previous year's earnings. As the holding periods of mutual funds in China are shorter than those in the US, only one year lagged mutual funds' holdings are used in the empirical analysis. Year-end mutual funds' holdings allow for the effect of dividend policies to show up in future mutual fund holdings. All other independent variables are measured at year-end from 2005 to 2009. Due to the fact that mutual fund holdings may persist over time and current dividend rates may be similar to previous rates, I further repeat the regressions year by year.

Further, following Grinstein and Michaely (2005), I use another set of

regressions to examine the effect of the changes in cash/stock dividend rates on the changes in mutual funds' holdings. This can effectively address the issue of endogeneity arising from mutual funds' preferences for cash or stock dividends. The four exogenous variables used in equations 6.1 and 6.2 are used as control variables.

$$\Delta MF_{i,t}=\alpha_0+\alpha_1\Delta CPS_{i,t}+\alpha_2 BETA_{i,t}+\alpha_3 CAR_{i,t}+\alpha_4 VA_{i,t}+\alpha_5 SR_{i,t}+years+\varepsilon_{i,t} \quad \text{(Equation 6.3)}$$

$$\Delta MF_{i,t}=\alpha_0+\alpha_1\Delta SPS_{i,t}+\alpha_2 BETA_{i,t}+\alpha_3 CAR_{i,t}+\alpha_4 VA_{i,t}+\alpha_5 SR_{i,t}+years+\varepsilon_{i,t} \quad \text{(Equation 6.4)}$$

$\Delta MF_{i,t}$ are the changes in different types of mutual funds' holdings ($ALLT_{i,t}$, $LT_{i,t}$, and $TT_{i,t}$) between year t and t-1. Different from equations 6.1, CPS is used to get the changes of cash dividend rates between current year and previous year in equation 6.3, as listed firms mainly use previous dividends per share as the benchmark for cash dividend rates in the following years (Grinstein and Michaely, 2005). $\Delta CPS_{i,t}$ or $\Delta SPS_{i,t}$ is the changes in cash or stock dividend rates between year t and t-1.

6.2.3 Empirical results

6.2.3.1 The distribution of dividend rates

Figure 6.1 reports the distribution of listed firms' DPA ratios (cash dividends scaled by the book value of assets) during the sample period. There are a total of 3569 firm-year observations. 51.25% of all non-financial listed firms (3569 out of 6964 listed firms) have paid cash dividends during the sample period. The mean and median DPA are 2.14% and 1.45%, respectively. The majority of listed firms' DPA

ratios are between 1% and 3%.

Figure 6.2 reports the distribution of listed firms' CPS ratios (cash dividends per share ratios) during the sample period. The mean and median of CPS are 0.15 and 0.1, respectively. Around 80% of listed firms' CPS ratios are between 0.05 and 0.3. Less than 1% of listed firms pay cash dividends of more than 1 Yuan per share.

Figure 6.1 The distribution of listed firms' DPA ratios from 2005 to 2009

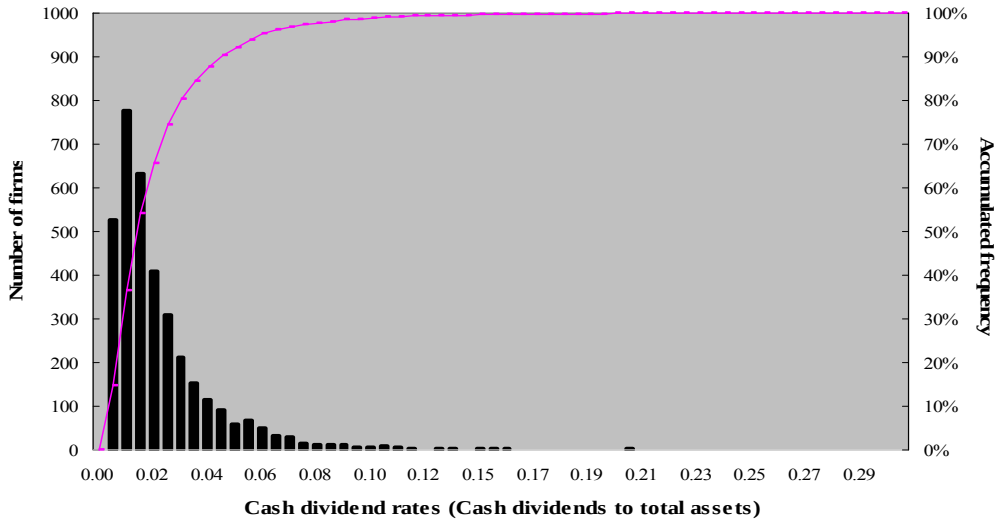


Figure 6.2 The distribution of listed firms' CPS ratios from 2005 to 2009

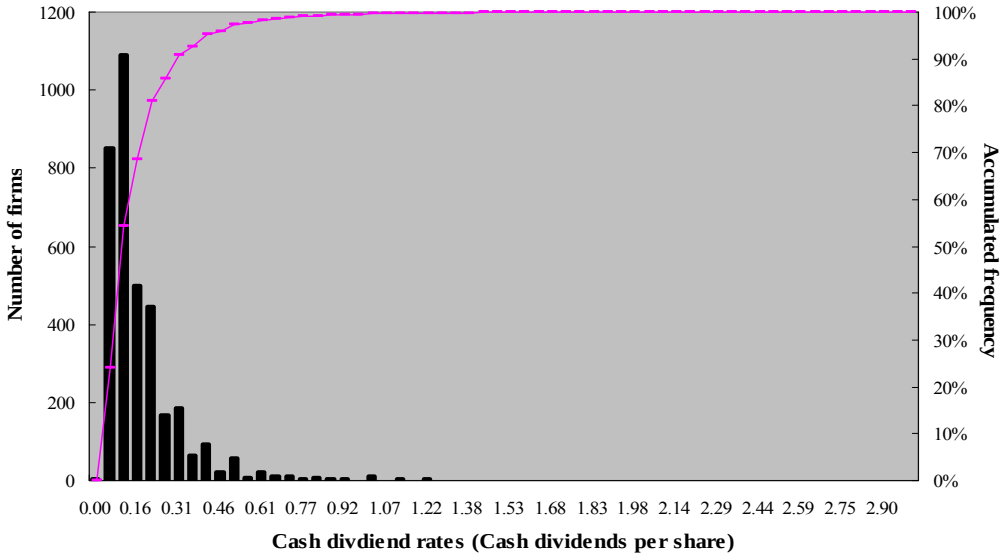


Figure 6.3 reports the distribution of listed firms' DPE (cash dividends scaled by earnings[48]) during the sample period. The mean and median DPE are 35% and 28%, respectively. Around two-thirds of DPE ratios are between 10% and 50%. Given that the average cash dividends to earnings ratio of dividend-paying firms in the US is approximately 46% (Ferreira, Massa and Matos, 2010)[49], the cash dividend payout ratios in China are lower than that in the US. However, it is noteworthy that there are thirteen firms that pay cash dividends when their earnings are negative, and around 3% of DPE ratios are above 1. This suggests that a few listed firms have paid very high cash dividends to their shareholders in China.

Figure 6.4 shows the distribution of listed firms SPS ratios (stock dividend per share ratios) during the sample period. 16.61% (1157) of all non-financial listed firms have paid stock dividends during the sample period. The three most popular payout ratios are 0.5 per share (21.32% of firms), 1 per share (18.50%), and 0.33 per share (16.79%). The mean and median SPS are 0.51 and 0.50, respectively.

[48] Earnings are measured after tax and interest, but before extraordinary items.

[49] Ferreira, Massa and Matos (2010) find that only 20% of firms pay cash dividend in the US. The average dividend-to-earnings ratio for all non-financial listed firms is 0.092%.

Figure 6.3 The distribution of listed firms' DPE ratios from 2005 to 2009

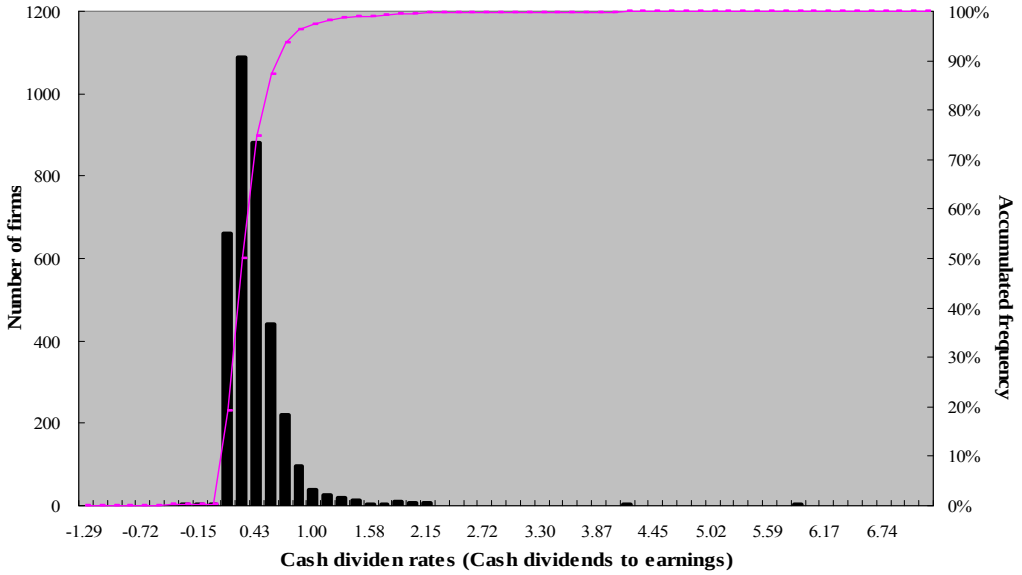
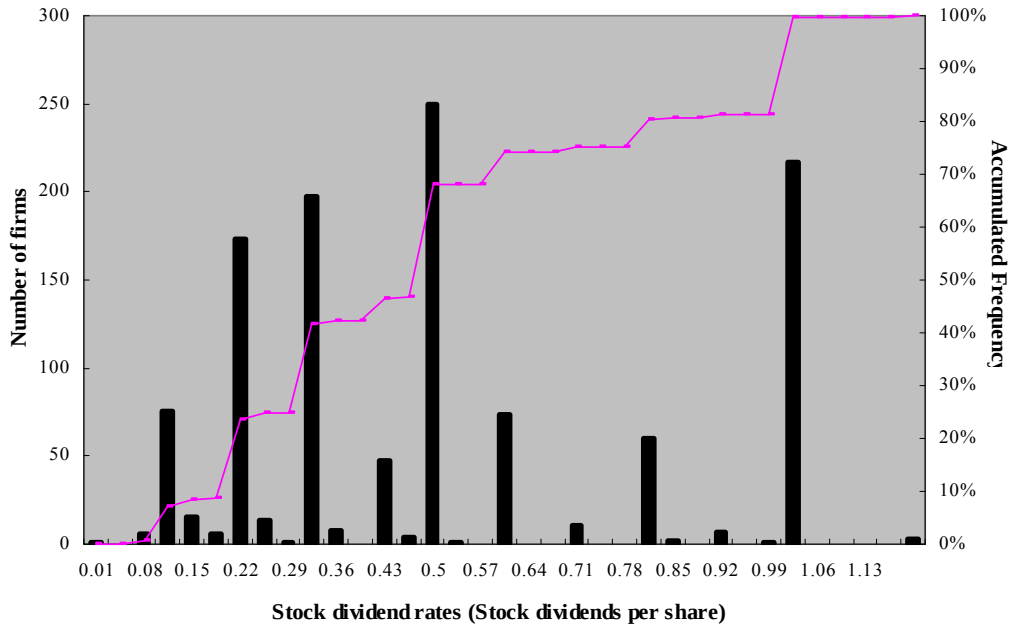


Figure 6.4 The distribution of listed firms' SPS ratios from 2005 to 2009



6.2.3.2 Mutual funds' preferences

Table 6.1 provides the descriptive statistics of the variables used in this section. The sample includes all non-financial listed firms (without missing data) from 2005 to 2009. The total number of firm-year observations is 6964. The average ALLT, LT and TT are 0.7%, 0.5% and 0.2%, respectively. When using the number of total shares (including both tradable and non-tradable shares) to measure mutual funds' ownership, the average ALL, L and T drop to 0.4%, 0.3% and 0.1%, respectively.

Table 6.1 Descriptive statistics

Variable	N	Mean	STD	Min	Max
ALL	6964	0.004	0.016	0	0.208
ALLT	6964	0.007	0.023	0	0.271
L	6964	0.003	0.012	0	0.186
LT	6964	0.005	0.017	0	0.252
T	6964	0.001	0.006	0	0.092
TT	6964	0.002	0.008	0	0.096
DPA	6964	0.011	0.019	0	0.307
CPS	6964	0.102	0.161	0	3
SPS	6964	0.084	0.227	0	1.800
BETA	6964	1.062	0.391	-6.725	14.097
CAR	6964	-0.127	0.472	-1.750	10.662
VA	6964	1.873	2.790	0.056	63.942
SR	6964	20.790	1.578	7.125	28.004

Table 6.1 reports the descriptive statistics of the variables used in the regressions. ALL/ALLT is total mutual funds' ownership measured by the number of listed firm's total/tradable shares, including all types of mutual funds' ownership. L/LT is long-term mutual fund's ownership measured by the number of listed firm's total/tradable shares. T/TT is transient mutual fund's ownership measured by the number of listed firm's total/tradable shares. DPA is cash dividends to total assets ratio. CPS is the ratio of cash dividends per share. SPS is the ratio of stock dividends per share. BETA is market beta coefficient. CAR is past 12 months cumulative market adjusted abnormal returns. VA is market capitalization to book value of total assets ratio. SR is the log value of sales revenue.

Table 6.2 reports the correlations between the variables used in the regressions. Due to the high correlations between dividend payout dummies (CD and SD) and dividend payout rates (DPA and SPS), they are used in different regressions. The correlations between all pairs of other independent variables are below 0.5. As such, the correlations are not high enough to cause multicollinearity in the regression analysis.

Table 6.2 Pearson correlations

	ALLT	CD	DPA	CPS	SD	SPS	BETA	CAR	VA	SR
ALLT	1	0.195***	0.228***	0.273***	0.104***	0.100***	-0.167***	0.120***	0.110***	0.278***
p-value		*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*
CD		1	0.555***	0.555***	0.235***	0.201***	-0.061***	0.079***	-0.041***	0.365***
p-value			*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*0.001*	*<.0001*
DPA			1	0.830***	0.209***	0.228***	-0.120***	0.086***	0.068***	0.172***
p-value				*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*
CPS				1	0.157***	0.176***	-0.131***	0.098***	0.027**	0.292***
p-value					*<.0001*	*<.0001*	*<.0001*	*<.0001*	*0.025*	*<.0001*
SD					1	0.833***	-0.067***	0.079***	0.060***	0.089***
p-value						*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*
SPS						1	-0.078***	0.091***	0.069***	0.085***
p-value							*<.0001*	*<.0001*	*<.0001*	*<.0001*
BETA							1	0.021*	-0.157***	-0.061***
p-value								*0.086*	*<.0001*	*<.0001*
CAR								1	0.133***	0.054***
p-value									*<.0001*	*<.0001*
VA									1	-0.204***
p-value										*<.0001*
SR										1

Table 6.2 reports the correlations between the variables used in the regressions. ALLT is total mutual funds' ownership measured by the number of listed firm's tradable shares, including all types of mutual funds' ownership. CD is a dummy variable, takes the value of one if a listed firm pays cash dividends in year t, and zero otherwise. DPA is cash dividends to total assets ratio. CPS is the ratio of cash dividends per share. SD is a dummy variable, takes the value of one if a listed firm pays stock dividends in year t, and zero otherwise. SPS is the ratio of stock dividends per shares. BETA is market beta coefficient. CAR is past 12 months cumulative market adjusted abnormal returns. VA is market capitalization to book value of total assets ratio. SR is the log value of sales revenue.

*, **, *** represent the statistical significance at the 0.1, 0.05, and 0.01 levels, respectively (two-sided).

Panel A of Table 6.3[50] shows the differences in mutual fund holdings between firms that do and do not pay cash dividends. Firms that pay cash dividends have significantly larger holdings by mutual funds. The differences are statistically significant in each year during the sample period.

Panel B of Table 6.3 shows the differences in holdings by mutual funds between firms that do and do not pay stock dividends. Again, firms that pay stock dividends have significantly larger mutual fund holdings than firms that do not pay. Some firms that do not pay cash dividends may pay stock dividends in the meanwhile, and vice versa. As such, I further exclude the firms that pay stock dividends from the sample of firms that do not pay cash dividends, and repeat the tests reported in Panel A of Table 6.3. I also exclude the firms that pay cash dividends from the sample of firms that do not pay stock dividends, and repeat the tests reported in Panel B of Table 6.3. The un-tabulated results show that the differences are still statistically significant.

Table 6.4[51] reports the differences in mutual fund holdings between firms that pay low and high cash/stock dividends. Firms that pay low cash dividends have significantly lower mutual fund holdings than firms that pay high cash dividends. However, firms that pay low stock dividends only have significantly lower transient mutual fund holdings than firms that pay high stock dividends.

[50] As the medians of mutual funds' ownership of firms that do and do not pay cash or stock dividends are zero, I do not run the Wilcoxon test.

[51] As the medians of mutual funds' ownership of firms that pay low and high cash or stock dividends are zero, I do not run the Wilcoxon test.

Table 6.3 The differences in mutual funds' holdings between firms that do and do not pay cash/stock dividends

Panel A The differences in mutual funds' holdings between firms that do and do not pay cash dividends

		CD Payer			CD non-payer			T Test of H0: the means are equal
	MF Type	N	Mean	Median	N	Mean	Median	Mean Difference *(p-value)*
2005-2009	ALL	3569	0.71%	0	3395	0.17%	0	0.54%*** *<.0001*
	L	3569	0.49%	0	3395	0.11%	0	0.38%*** *<.0001*
	T	3569	0.22%	0	3395	0.06%	0	0.16%*** *<.0001*
2005	ALL	710	0.32%	0	596	0.10%	0	0.22%*** *<.0001*
	L	710	0.29%	0	596	0.10%	0	0.19%*** *<.0001*
	T	710	0.02%	0	596	0.01%	0	0.01%*** *<.0001*
2006	ALL	604	0.42%	0	693	0.10%	0	0.32%*** *<.0001*
	L	604	0.27%	0	693	0.07%	0	0.20%*** *<.0001*
	T	604	0.15%	0	693	0.03%	0	0.12%*** *<.0001*
2007	ALL	682	0.65%	0	680	0.14%	0	0.50%*** *<.0001*
	L	682	0.37%	0	680	0.07%	0	0.30%*** *<.0001*
	T	682	0.27%	0	680	0.07%	0	0.20%*** *<.0001*
2008	ALL	766	0.85%	0	714	0.25%	0	0.60%*** *<.0001*
	L	766	0.64%	0	714	0.19%	0	0.45%*** *<.0001*
	T	766	0.21%	0	714	0.07%	0	0.14%*** *<.0001*
2009	ALL	807	1.19%	0	712	0.29%	0	0.90%*** *<.0001*
	L	807	0.78%	0	712	0.18%	0	0.60%*** *<.0001*
	T	807	0.40%	0	712	0.10%	0	0.30%*** *<.0001*

Panel A shows the differences of mutual fund ownership between listed firms that do and do not pay cash dividends. ALL, L and T are total, long-term and transient mutual funds' ownership measured by the number of listed firms' total shares.
*, **, *** represent the statistical significance at the 0.1, 0.05, and 0.01 levels, respectively (two-sided).

Panel B The differences in mutual funds' holdings between firms that do and do not pay stock dividends

		SD Payer			SD non-payer			T Test of H0: the means are equal
	MF Type	N	Mean	Median	N	Mean	Median	Mean Difference *(p-value)*
2005-2009	ALL	1157	0.86%	0	5807	0.36%	0	0.49%*** *<.0001*
	L	1157	0.62%	0	5807	0.24%	0	0.37%*** *<.0001*
	T	1157	0.24%	0	5807	0.12%	0	0.12%*** *<.0001*
2005	ALL	164	0.51%	0	1142	0.15%	0	0.36%*** *<.0001*
	L	164	0.47%	0	1142	0.14%	0	0.34%*** *<.0001*
	T	164	0.03%	0	1142	0.01%	0	0.02%*** *<.0001*
2006	ALL	181	0.39%	0	1116	0.23%	0	0.17%*** *0.001*
	L	181	0.24%	0	1116	0.15%	0	0.09%*** *0.001*
	T	181	0.15%	0	1116	0.08%	0	0.08%*** *0.001*
2007	ALL	202	0.66%	0	1160	0.35%	0	0.31%*** *0.001*
	L	202	0.37%	0	1160	0.19%	0	0.18%*** *0.001*
	T	202	0.28%	0	1160	0.15%	0	0.13%*** *0.001*
2008	ALL	388	1.11%	0	1092	0.37%	0	0.74%*** *<.0001*
	L	388	0.85%	0	1092	0.27%	0	0.58%*** *<.0001*
	T	388	0.26%	0	1092	0.10%	0	0.16%*** *<.0001*
2009	ALL	222	1.24%	0	1297	0.68%	0	0.56%*** *0.001*
	L	222	0.85%	0	1297	0.44%	0	0.41%*** *0.001*
	T	222	0.39%	0	1297	0.24%	0	0.15%*** *0.022*

Panel B shows the differences of mutual fund ownership between listed firms that do and do not pay stock dividends. ALL, L and T are total, long-term and transient mutual funds' ownership measured by the number of listed firms' total shares.
*, **, *** represent the statistical significance at the 0.1, 0.05, and 0.01 levels, respectively (two-sided).

Table 6.4 The differences in mutual funds' holdings between firms that pay low and high cash/stock dividends

Panel A The differences in mutual funds' holdings between firms that pay low and high cash dividends

	DPA Low			DPA Median			DPA High			T Test of H0: the means are equal between low and high groups
MF Type	N	Mean	Median	N	Mean	Median	N	Mean	Median	Mean Difference *(p-value)*
ALL	1190	0.97%	0	1189	0.97%	0	1190	1.46%	0	-0.49%*** *<.0001*
ALLT	1190	1.63%	0	1189	1.68%	0	1190	2.92%	0	-1.29%*** *<.0001*
L	1190	0.67%	0	1189	0.66%	0	1190	1.04%	0	-0.37%*** *<.0001*
LT	1190	1.12%	0	1189	1.16%	0	1190	2.10%	0	-0.98%*** *<.0001*
T	1190	0.30%	0	1189	0.31%	0	1190	0.42%	0	-0.12%*** *0.003*
TT	1190	0.51%	0	1189	0.52%	0	1190	0.82%	0	-0.31%*** *<.0001*

Panel A shows the differences of mutual fund ownership between listed firms that pay low and high cash dividends. ALL, L and T are total, long-term and transient mutual funds' ownership measured by the number of listed firms' total shares. ALLT, LT and TT are total, long-term and transient mutual funds' ownership measured by the number of tradable shares.
*, **, *** represent the statistical significance at the 0.1, 0.05, and 0.01 levels, respectively (two-sided).

Panel B The differences in mutual funds' holdings between firms that pay low and high stock dividends

	SDS Low			SDS Median			SDS High			T Test of H0: the means are equal between low and high groups
MF Type	N	Mean	Median	N	Mean	Median	N	Mean	Median	Mean Difference *(p-value)*
ALL	386	1.12%	0	385	1.32%	0	386	1.48%	0	-0.36% *0.115*
ALLT	386	1.93%	0	385	2.23%	0	386	2.61%	0	-0.68%* *0.076*
L	386	0.84%	0	385	0.92%	0	386	1.08%	0	-0.24% *0.196*
LT	386	1.45%	0	385	1.54%	0	386	1.91%	0	-0.46% *0.145*
T	386	0.28%	0	385	0.40%	0	386	0.40%	0	-0.12%* *0.067*
TT	386	0.48%	0	385	0.69%	0	386	0.70%	0	-0.22%** *0.047*

Panel B shows the differences of mutual fund ownership between listed firms that pay low and high stock dividends. ALL, L and T are total, long-term and transient mutual funds' ownership measured by the number of listed firms' total shares. ALLT, LT and TT are total, long-term and transient mutual funds' ownership measured by the number of tradable shares.
*, **, *** represent the statistical significance at the 0.1, 0.05, and 0.01 levels, respectively (two-sided).

Table 6.5 reports the results on the preferences of mutual funds for cash/stock dividend-paying firms. Dependent variables are total/long-term/transient mutual funds' ownership measured by the number of listed firms' tradable shares. Due to the concern of heteroskedasticity, I employ heteroskedasticity-consistent standard error (HCSE) estimators, which are robust to the unknown heteroskedasticity in the OLS regressions. All the *p-values* are based on HCSE. As shown in Panel A, the coefficients of CD and DPA are significantly positive at the 1% level, which suggests that all types of mutual funds prefer to hold stocks that pay cash dividends and pay high cash dividends. In Panel B, the coefficients of SD and SPS are also significantly positive at the 1% level, suggesting that all types of mutual funds prefer to hold the shares of listed firms that pay stock dividends and pay high stock dividends. Panel C shows the results of year by year regressions. Mutual funds' preference for firms that pay cash dividends and pay high cash dividends is significant in years 2005, 2008 and 2009. However, their preference for firms that pay stock dividends and pay high stock dividends is only significant in 2008. This indicates that, although mutual funds prefer both cash and stock dividends, their preference for stock dividends is not as strong as that for cash dividends.

Table 6.5 The preferences of mutual funds for dividend-paying stocks

Panel A The preferences of mutual funds for cash dividend-paying stocks

	ALLT		LT		TT	
Regression	1	2	3	4	5	6
Intercept	-0.135***	-0.137***	-0.095***	-0.095***	-0.040***	-0.042***
P-value	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*
CD	0.007***		0.005***		0.002***	
P-value	*<.0001*		*<.0001*		*<.0001*	
DPA		0.323***		0.241***		0.081***
P-value		*<.0001*		*<.0001*		*<.0001*
BETA	-0.017***	-0.015***	-0.014***	-0.013***	-0.003***	-0.003***
P-value	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*
CAR	0.005***	0.005***	0.003***	0.003***	0.002***	0.002***
P-value	*0.002*	*0.002*	*0.027*	*0.025*	*<.0001*	*<.0001*
VA	0.009***	0.008***	0.006***	0.006***	0.003***	0.003***
P-value	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*
SR	0.008***	0.008***	0.005***	0.005***	0.002***	0.002***
P-value	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*
Year Dummies	YES	YES	YES	YES	YES	YES
R-sqr	14.93%	16.23%	12.94%	14.23%	10.88%	11.40%
Adj R-sqr	14.82%	16.12%	12.82%	14.11%	10.76%	11.28%
No. of Obs.	6964	6964	6964	6964	6964	6964

Panel A shows the results of the regressions that test the preferences of mutual funds for cash dividend-paying stocks. The p-values are based on heteroskedasticity-consistent standard errors that are robust to unknown heteroskedasticity. Dependent variables are total, long-term and short-term mutual funds' ownership measured by the number of listed firms' tradable shares. CD is cash dividend-paying dummy, which takes the value of one if listed firm pays cash dividends in year t, and zero otherwise. DPA is cash dividends to total assets ratio. BETA is market beta coefficient. CAR is past 12 months cumulative market adjusted abnormal returns. VA is market capitalization to book value of total assets ratio. SR is the log value of sales revenue.
*, **, *** represent the statistical significance at the 0.1, 0.05, and 0.01 levels, respectively (two-sided).

Panel B The preferences of mutual funds for stock dividend-paying stocks

	ALLT		LT		TT	
Regression	1	2	3	4	5	6
Intercept	-0.148***	-0.148***	-0.104***	-0.104***	-0.044***	-0.045***
P-value	*<.0001*	<.0001	*<.0001*	*<.0001*	*<.0001*	*<.0001*
SD	0.007***		0.006***		0.001***	
P-value	*<.0001*		*<.0001*		*0.005*	
SPS		0.011***		0.008***		0.003***
P-value		*<.0001*		*0.001*		*0.004*
BETA	-0.017***	-0.017***	-0.014***	-0.014***	-0.003***	-0.003***
P-value	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*
CAR	0.005***	0.005***	0.003***	0.003***	0.002***	0.002***
P-value	*0.003*	*0.003*	*0.032*	*0.034*	*<.0001*	*<.0001*
VA	0.009***	0.009***	0.007***	0.007***	0.003***	0.003***
P-value	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*
SR	0.008***	0.008***	0.006***	0.006***	0.002***	0.002***
P-value	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*
Year Dummies	YES	YES	YES	YES	YES	YES
R-sqr	14.65%	14.58%	12.79%	12.69%	10.54%	10.55%
Adj R-sqr	14.54%	14.47%	12.67%	12.57%	10.42%	10.43%
No. of Obs.	6964	6964	6964	6964	6964	6964

Panel B shows the results of the regressions that test the preferences of mutual funds for stock dividend-paying stocks. The p-values are based on heteroskedasticity-consistent standard errors that are robust to unknown heteroskedasticity. Dependent variables are total, long-term and short-term mutual funds' ownership measured by the number of listed firms' tradable shares. SD is stock dividend-paying dummy, which takes the value of one if listed firm pays stock dividends in year t, and zero otherwise. SPS is stock dividends per share. BETA is market beta coefficient. CAR is past 12 months cumulative market adjusted abnormal returns. VA is market capitalization to book value of total assets ratio. SR is the log value of sales revenue.
*, **, *** represent the statistical significance at the 0.1, 0.05, and 0.01 levels, respectively (two-sided).

Panel C Regressions year by year

YEAR	ALLT			
	Explanatory Variable			
	CD	DPA	SD	SPS
2005	0.004**	0.281**	0.009*	0.004
	0.017	*0.028*	*0.075*	*0.546*
2006	0.002	0.174*	-0.002	-0.007
	0.295	*0.060*	*0.612*	*0.216*
2007	0.006***	0.186	-0.003	-0.002
	0.001	*0.148*	*0.327*	*0.599*
2008	0.008***	0.321**	0.012***	0.020***
	0.001	*0.018*	*0.001*	*0.001*
2009	0.006***	0.291**	0.005*	0.007
	0.002	*0.012*	*0.100*	*0.117*
YEAR	LT			
	Explanatory Variable			
	CD	DPA	SD	SPS
2005	0.004**	0.269**	0.008*	0.003
	0.031	*0.032*	*0.094*	*0.615*
2006	0.001	0.120*	-0.002	-0.006*
	0.472	*0.067*	*0.351*	*0.086*
2007	0.005***	0.131	-0.002	0.001
	0.001	*0.114*	*0.387*	*0.889*
2008	0.006***	0.253**	0.009***	0.015***
	0.001	*0.021*	*0.001*	*0.001*
2009	0.004***	0.185**	0.004**	0.007*
	0.003	*0.019*	*0.043*	*0.088*
YEAR	TT			
	Explanatory Variable			
	CD	DPA	SD	SPS
2005	0.001**	0.012*	0.001	0.001
	0.013	*0.052*	*0.111*	*0.341*
2006	0.001	0.054	0.000	-0.001
	0.191	*0.122*	*0.772*	*0.798*
2007	0.002**	0.054	-0.001	-0.002
	0.039	*0.283*	*0.393*	*0.345*
2008	0.002***	0.067**	0.003***	0.005***
	0.002	*0.032*	*0.002*	*0.001*
2009	0.002**	0.105**	0.000	0.001
	0.034	*0.018*	*0.833*	*0.750*

Panel C reports the results of year by year regressions. The p-values are based on heteroskedasticity-consistent standard errors that are robust to unknown heteroskedasticity.
*, **, *** represent the statistical significance at the 0.1, 0.05, and 0.01 levels, respectively (two-sided).

Table 6.6 presents the effect of changes in cash/stock dividend rates on the changes in mutual fund holdings. The total number of observations is reduced from 6964 to 5856. The coefficients of ΔCDS become negative and only marginally significant at the 10% level[52]. This suggests that the mutual fund holdings hardly change after listed firms increase the cash dividend rates. On the other hand, the coefficient of ΔSPS is not statistically significant when ΔTT is used as the dependent variable, and is positive and only marginally significant at the 10% level when ΔLT is used as the dependent variable. This suggests that the changes in stock dividend rates similarly do not influence mutual fund holdings. In conjunction with the results reported in Table 6.5, the empirical findings suggest that, although mutual funds prefer to hold the shares of dividend-paying firms, they do not show any preferences for firms that pay high cash/stock dividends.

[52] Given that the sample size is above 5000, I mainly use the 1% and 5% confidence level to determine the significance of coefficients in this chapter.

Table 6.6 The effect of the changes in dividend rates on the changes in mutual funds' holdings (based on listed firms' tradable shares)

	ΔALLT		ΔLT		ΔTT	
Regression	1	2	3	4	5	6
Intercept	-0.006	-0.008	-0.003	-0.001	-0.004	-0.004
P-value	*0.432*	*0.311*	*0.674*	*0.859*	*0.333*	*0.282*
ΔCPS	-0.011*		-0.009*		-0.005*	
P-value	*0.077*		*0.096*		*0.093*	
ΔSPS		0.002		0.003*		-0.001
P-value		*0.285*		*0.079*		*0.509*
BETA	0.001	0.001	0.001	0.002	-0.002**	-0.001
P-value	*0.820*	*0.754*	*0.434*	*0.227*	*0.036*	*0.111*
CAR	-0.003**	-0.003**	-0.003***	-0.003***	0.001	0.001
P-value	*0.013*	*0.015*	*0.001*	*0.001*	*0.915*	*0.888*
VA	0.001	0.001	0.001	0.001	0.001	0.001
P-value	*0.734*	*0.756*	*0.688*	*0.975*	*0.928*	*0.820*
SR	0.001	0.001	0.001	0.001	0.001	0.001
P-value	*0.352*	*0.383*	*0.814*	*0.958*	*0.102*	*0.109*
Year Dummies	YES	YES	YES	YES	YES	YES
R-sqr	0.40%	0.36%	0.84%	0.79%	1.37%	1.34%
Adj R-sqr	0.28%	0.22%	0.72%	0.67%	1.25%	1.22%
No. of Obs.	5856	5856	5856	5856	5856	5856

This table reports the results of the regressions that test the effect of cash and stock dividend rates on mutual fund holdings. I exclude 1% observations with extreme increases in dividend payout from the sample. The p-values are based on heteroskedasticity-consistent standard errors that are robust to unknown heteroskedasticity. The dependent variables are the changes in total/long-term/short-term mutual fund holdings between year t and t-1. The main independent variables are ΔCPS and ΔSPS, which are the changes in cash dividends per share and the changes in stock dividends per year between year t and t-1, respectively. BETA is market beta coefficient. CAR is past 12 months cumulative market adjusted abnormal returns. VA is market capitalization to book value of total assets ratio. SR is the log value of sales revenue.
*, **, *** represent the statistical significance at the 0.1, 0.05, and 0.01 levels, respectively (two-sided).

6.3 Mutual funds' impact on listed firms' dividend payouts

As in Section 6.2 I find that mutual funds prefer to hold the shares of listed firms that pay cash or stock dividends and like cash dividends more than stock dividends, in this section I further investigate whether or not mutual funds can influence the cash/stock dividend rates of their portfolio firms through their shareholdings.

6.3.1 Research design

6.3.1.1 Hypothesis development

Under the current Chinese tax system, both mutual funds and individual investors have to pay 20% tax on any cash or stock dividends they receive from listed firms. Therefore, in contrast to institutional investors in the UK, mutual funds do not possess a tax advantage in China. Further, Chinese listed firms are regarded as suffering from poor corporate governance, which may not provide minority shareholders with effective protection (Allen, Qian and Qian, 2005; Liu and Lu, 2007). La Porta et al. (2000a) suggest that poor minority shareholder protection is significantly associated with low cash dividend payouts worldwide. Allen, Qian and Qian (2005) also find that the cash dividend payout rates of Chinese listed firms are lower than that of similar firms in countries with better investor protection. The literature argues that long-term institutions are able to provide efficient corporate governance to listed companies, and usually aim for dividend income and capital appreciation in the US (e.g. Gillan and Starks, 2000; Hartzell and Starks, 2000). As such, long-term mutual funds may encourage listed firms to pay more cash dividends when payout ratios are low. I summarize this expectation in *H3a*:

H3a: All else being equal, firms with more long-term mutual funds' ownership will pay higher cash dividends.

Short-term (transient) institutions, which generally have high levels of portfolio turnover and diversification, tend to be short-term-focused investors with little interest

in dividend income or long-term capital appreciation (Porter, 1992; Bushee, 2000). Further, Koh (2007) argues that transient institutions are not likely to exert significant monitoring on listed firms or improve corporate governance. The incapability of transient mutual funds to improve corporate governance has also been shown in Essay Two.

However, the literature argues that institutional investors, including mutual funds, usually align with the controlling or largest shareholders in China (e.g. Fu and Tan, 2008; Firth, Lin and Zou, 2010). When engaging in non-tradable reform, mutual funds even agreed with less compensation to tradable shareholders, because they are subject to political pressure or they can benefit from getting insider information (Fu and Tan, 2008; Firth, Lin and Zou, 2010). Given that the controlling or the largest shareholders are eager to get cash dividends from listed firms (Huang, Shen and Sun, 2011), transient mutual funds may support large shareholders and agree with high cash dividend payouts. As such, although transient mutual funds cannot improve the corporate governance of listed firms, they may also push up listed firms' cash dividend payout rates through their shareholdings. Accordingly, I expect that:

H3b: All else being equal, firms with more transient mutual funds' ownership will pay higher cash dividends

As mentioned, stock dividends could provide investors with significant capital gains, which are tax-free in China. However, paying high stock dividends may harm some key financial ratios in the long-run (e.g. EPS). These financial ratios are the main determinants of rights issues and seasoned equity offerings in China (Anderson

et al., 2011). Moreover, large stock dividend payments can considerably increase the amount of shares that mutual funds hold. Long-term mutual funds consist of dedicated and quasi-index mutual funds. Dedicated mutual funds usually have large holdings in their portfolio firms. The empirical findings of Essay One indicate that the liquidity of listed firms is a major concern for them when selecting portfolio firms. As such, I believe that, although long-term mutual funds prefer to hold the shares of stock dividend-paying firms, they may not force listed firms to distribute more stock dividends. Accordingly, I expect:

H4a: All else being equal, firms with more long-term mutual fund's ownership will not pay higher stock dividends.

Transient mutual funds usually hold the shares of their portfolio firms for only a short period, and pay more attention to short-term earnings. They care little about the changes in listed firms' financial ratios. Further, they usually only have small holdings in portfolio firms, allowing them to sell their stake more easily. The empirical findings of Essay One also suggest that listed firms' liquidity is not one of their major concerns. As such, in order to pursue the positive abnormal returns surrounding stock dividend announcements, transient mutual funds may encourage listed firms to distribute more stock dividends. I summarize this expectation in *H4c:*

H4b: All else being equal, firms with more transient mutual fund's ownership will pay higher stock dividends.

6.3.1.2 Sample selection and main variables

The sample used in this section is the same as that used in Section 6.2. The variables that measure mutual fund holdings and cash/stock dividend rates are also the same as those used in Section 6.2.

6.3.1.3 Other explanatory variables:

Since cash/stock dividend rates are used as dependent variables in this section, I construct a series of variables to control for the effects of firm attributes on dividend policies. I define TOP as the largest shareholder's shareholding. This controls for the impact of the largest shareholders on listed firms' dividend policies. The largest shareholders are usually non-tradable shareholders, and cannot benefit from share price appreciation. Cash dividends may be the only legal cash flow such shareholders can expect from listed firms (Huang, Shen and Sun, 2011). As such, the largest shareholders prefer cash dividends to stock dividends (Wei and Xiao, 2009, Huang, Shen and Sun, 2011). I define MGN as the ownership of listed firm's executives. Wei, Zhang and Xiao (2004) argue that managers are likely to cater for the preferences of different shareholders when paying dividends. Therefore, MGN controls for the management's interests in dividend decisions.

Zou et al. (2008) and Chen, Jian and Xu (2009) argue that state-controlled listed firms are usually cash-thirsty, and they require money to support social welfare, finance the non-profitable divisions, or fund public projects. As such, I use CTR to control for the effect of listed firm types on dividend policies. It is a dummy variable,

which takes the value of one if the firm is ultimately controlled by a private or foreign entity, and zero otherwise (e.g. government and state-owned enterprise). I define UD as the ratio of the number of unpaid directors to the total number of board members. This controls for the effect of independent/outside directors on dividend policies.

As a debt covenant may contain restrictions on listed firms' dividend payout, and debt holders usually closely watch both the timing and level of cash dividend payments, a firm with a high level of debt should pay lower cash dividends (Kalay, 1982; Huang, Shen and Sun, 2011). I include DA, which measures the listed firm's leverage (debt to assets ratio), to control for the effect of debt level on dividend policies. Generally, firms with more cash are more likely to pay cash dividends or pay higher cash dividends. Hence, I include CA, which is net operating cash flow scaled by total assets, to control for the effect of cash flow on dividend policies.

Following Fama and French (2001), I include EA and VA to control for listed firms' profitability and investment opportunities. EA is a firm's earnings scaled by its book value of total assets; while VA is a ratio of a firm's market capitalization over its book value of total assets. Moreover, SIZE, defined as the log value of the listed firm's total assets, is used to control for the undetermined size effect. Finally, year dummies are also included.

6.3.2 Regression models

Two sets of OLS regressions are used in this study. First, I use cash/stock dividend rates as the dependent variables, and mutual fund holdings as the main

independent variables. The regressions are:

$$CPS_{i,t+1}=\alpha_0+\alpha_1 MT_{i,t}+\alpha_2 TOP_{i,t}+\alpha_3 MGN_{i,t}+\alpha_4 CTR_{i,t}+\alpha_5 UD_{i,t}+\alpha_6 DA_{i,t}+\alpha_7 CA_{i,t}+\alpha_8 EA_{i,t}+\alpha_9 VA_{i,t}+\alpha_{10} SIZE_{i,t}+years+\varepsilon_{i,t} \quad \text{(Equation 6.5)}$$

$$SPS_{i,t+1}=\alpha_0+\alpha_1 MT_{i,t}+\alpha_2 TOP_{i,t}+\alpha_3 MGN_{i,t}+\alpha_4 CTR_{i,t}+\alpha_5 UD_{i,t}+\alpha_6 DA_{i,t}+\alpha_7 CA_{i,t}+\alpha_8 EA_{i,t}+\alpha_9 VA_{i,t}+\alpha_{10} SIZE_{i,t}+years+\varepsilon_{i,t} \quad \text{(Equation 6.6)}$$

$CPS_{i,t+1}$ or $SPS_{i,t+1}$ is listed firms' cash or stock dividends per share in year t+1. $MT_{i,t}$ are different types of mutual funds' holdings ($ALLT_{i,t}$, $LT_{i,t}$, and $TT_{i,t}$) as a percentage of the number of tradable shares outstanding as of December 31 of year t. Lagged mutual fund holdings allow for the effects of the changes in mutual fund holdings to show up in future cash/stock dividend payout ratios. All other independent variables are measured at year-end from 2005 to 2009.

Furthermore, following Grinstein and Michaely (2005), I use the changes in dividend rates as the dependent variables, and use the changes in mutual fund holdings as the main independent variables. As mentioned earlier, using the changes in both dividend rates and mutual fund holdings can ensure that the results are not affected by the endogeneity arising from mutual funds' preferences for cash/stock dividends and the persistence of some mutual funds' holdings. The regressions are:

$$\Delta CPS_{i,t+1}=\alpha_0+\alpha_1 \Delta MF_{i,t}+\alpha_2 TOP_{i,t}+\alpha_3 MGN_{i,t}+\alpha_4 CTR_{i,t}+\alpha_5 UD_{i,t}+\alpha_6 DA_{i,t}+\alpha_7 CA_{i,t}+\alpha_8 EA_{i,t}+\alpha_9 VA_{i,t}+\alpha_{10} SIZE_{i,t}+years+\varepsilon_{i,t} \quad \text{(Equation 6.7)}$$

$$\Delta SPS_{i,t+1}=\alpha_0+\alpha_1\Delta MF_{i,t}+\alpha_2 TOP_{i,t}+\alpha_3 MGN_{i,t}+\alpha_4 CTR_{i,t}+\alpha_5 UD_{i,t}+\alpha_6 DA_{i,t}+\alpha_7 CA_{i,t}+\alpha_8 EA_{i,t}$$
$$+\alpha_9 VA_{i,t}+\alpha_{10} SIZE_{i,t}+years+\varepsilon_{i,t} \quad \text{(Equation 6.8)}$$

$\Delta CPS_{i,t+1}$ or $\Delta SPS_{i,t+1}$ is the changes in cash or stock dividend rates between year t+1 and t. $\Delta MF_{i,t}$ are the changes in year-end different types of mutual funds' holdings ($ALLT_{i,t}$, $LT_{i,t}$, and $TT_{i,t}$) between year t and t-1.

6.3.3 Empirical results

Table 6.7[53] reports the descriptive statistics of the control variables used in this section. On average, the largest shareholder's ownership is 36.9%, but can be as high as 80.0%. The mean managerial ownership is only 2.3%, though it can be as high as 78.4%. The mean UD (unpaid director) ratio is around 40.4%. On average, a listed firm's debt, net operating cash flow and earnings are around 50.0%, 5.5% and 1.6%, respectively, of its total assets[54].

[53] As the descriptive statistics of mutual funds' holdings and listed firms' dividend payouts are reported in Table 6.1, they are not included in this table.

[54] The sample used in this chapter includes all non-financial listed firms, and is different from that used in chapter 5. As such, the values of independent variables are not exactly the same as those reported in chapter 5.

Table 6.7 Descriptive statistics

Variable	N	Mean	STD	Min	Max
TOP	6964	0.369	0.150	0.100	0.800
MGN	6964	0.023	0.095	0	0.784
CTR	6964	0.342	0.475	0	1
UD	6964	0.404	0.314	0	1
DA	6964	0.507	0.190	0	0.999
CA	6964	0.055	0.096	-1.674	1.069
EA	6964	0.016	0.240	-8.753	6.109
VA	6964	1.873	2.790	0.056	63.942
SIZE	6964	9.303	0.524	6.756	11.938

Table 6.7 reports the descriptive statistics of the variables used in the regressions. TOP is the largest shareholder's ownership. MGN is managerial ownership. CTR is a binary dummy variable, which takes the value of one if the firm is ultimately controlled by a private entity, and zero otherwise. UD is the ratio of the number of directors not receiving any payment from the firm to total number of directors. DA is debt to total assets ratio. CA is net operating cash flow to total assets ratio. EA is earnings to total assets ratio. VA is market capitalization to book value of total assets ratio. SIZE is the log value of total assets.

Table 6.8 reports the correlations between the variables used in this section. The correlations between all pairs of independent variables are below 0.5, and, as such, the correlations are not high enough to cause multicollinearity.

Table 6.9[55] reports the differences in attributes between firms that do and do not pay cash/stock dividends. As shown in Panel A, firms that pay cash dividends have higher largest shareholder's ownership and managerial ownership, less debt, a higher level of cash and earnings, larger size and less investment opportunities. On the other hand, as shown in Panel B, firms that pay stock dividends have less dominant largest shareholders ownership and less outside directors. The other differences are similar to those shown in Panel A. The results reported in Table 6.9 are consistent with the literature on the attributes of firms that pay cash/stock dividends (e.g. Anderson et al., 2011; Huang, Shen and Sun, 2011).

[55] Because the differences of mutual fund holdings between listed firms that do and do not pay dividends are reported in Table 6.3, they are not included in Table 6.9.

Table 6.8 Pearson correlations

	ALLT	TOP	MGN	CTR	UD	DA	CA	EA	VA	SIZE
ALLT	1	0.109***	-0.007	-0.085***	0.002	-0.057***	0.152***	0.094***	0.110***	0.292***
p-value		*<.0001*	*0.547*	*<.0001*	*0.889*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*
TOP		1	-0.096***	-0.250***	0.135***	-0.021*	0.076***	0.062***	-0.108***	0.276***
p-value			*<.0001*	*<.0001*	*<.0001*	*0.086*	*<.0001*	*<.0001*	*<.0001*	*<.0001*
MGN			1	0.301***	-0.158***	-0.131***	-0.010	0.045***	0.027**	-0.116***
p-value				*<.0001*	*<.0001*	*<.0001*	*0.404*	*0.001*	*0.027*	*<.0001*
CTR				1	-0.204***	-0.050***	-0.048***	-0.046***	0.087***	-0.303***
p-value					*<.0001*	*<.0001*	*<.0001*	*0.001*	*<.0001*	*<.0001*
UD					1	0.007	-0.018	0.001	-0.029**	0.058***
p-value						*0.544*	*0.128*	*0.972*	*0.017*	*<.0001*
DA						1	-0.128***	-0.263***	-0.179***	0.245***
p-value							*<.0001*	*<.0001*	*<.0001*	*<.0001*
CA							1	0.144***	0.046***	0.094***
p-value								*<.0001*	*0.0001*	*<.0001*
EA								1	0.031***	0.137***
p-value									*0.009*	*<.0001*
VA									1	-0.217***
p-value										*<.0001*
SIZE										1

Table 6.8 reports the correlations between the variables used in the regressions. ALLT is total mutual funds' ownership measured by the number of listed firm's tradable shares, including all types of mutual funds' ownership. TOP is the largest shareholder's ownership. MGN is managerial ownership. CTR is a binary dummy variable, which takes the value of one if the firm is ultimately controlled by a private entity, and zero otherwise. UD is the ratio of the number of directors not receiving any payment from the firm to total number of directors. DA is debt to total assets ratio. CA is net operating cash flow to total assets ratio. EA is earnings to total assets ratio. VA is market capitalization to book value of total assets ratio. SIZE is the log value of total assets.

*, **, *** represent the statistical significance at the 0.1, 0.05, and 0.01 levels, respectively (two-sided).

Table 6.9 The differences between the characteristics of listed firms that do and do not pay cash/stock dividends

Panel A The characteristics of listed firms that do and do not pay cash dividends

	CD Payer			CD non-payer			T Test of H0: the means are equal	Wilcoxon Test of H0: the medians are equal
MF Type	N	Mean	Median	N	Mean	Median	Mean Difference *(p-value)*	Median Difference *(p-value)*
TOP	3569	0.399	0.393	3395	0.338	0.299	0.062*** *<.0001*	0.094*** *<.0001*
MGN	3569	0.034	0.005	3395	0.011	0.002	0.024*** *<.0001*	0.003*** *<.0001*
CTR	3569	0.297	0.000	3395	0.390	0.000	-0.093*** *<.0001*	N/A
UD	3569	0.409	0.400	3395	0.399	0.400	0.009 *0.213*	N/A
DA	3569	0.476	0.491	3395	0.543	0.557	-0.067*** *<.0001*	-0.066*** *<.0001*
CA	3569	0.068	0.066	3395	0.040	0.037	0.028*** *<.0001*	0.030*** *<.0001*
EA	3569	0.050	0.043	3395	-0.021	0.012	0.071*** *<.0001*	0.030*** *<.0001*
VA	3569	1.702	1.205	3395	2.054	1.266	-0.351*** *<.0001*	-0.061** *0.0225*
SIZE	3569	9.478	9.414	3395	9.118	9.093	0.360*** *<.0001*	0.321*** *<.0001*

Panel A shows the differences of the characteristics between the characteristics of listed firms that do and do not pay cash dividends. TOP is the largest shareholder's ownership. MGN is managerial ownership. CTR is a binary dummy variable, which takes the value of one if the firm is ultimately controlled by a private entity, and zero otherwise. UD is the ratio of the number of directors not receiving any payment from the firm to total number of directors. DA is debt to total assets ratio. CA is net operating cash flow to total assets ratio. EA is earnings to total assets ratio. VA is market capitalization to book value of total assets ratio. SIZE is the log value of total assets.
*, **, *** represent the statistical significance at the 0.1, 0.05, and 0.01 levels, respectively (two-sided).

Panel B The characteristics of listed firms that do and do not pay stock dividends

	SD Payer			SD non-payer			T Test of H0: the means are equal	Wilcoxon Test of H0: the medians are equal
MF Type	N	Mean	Median	N	Mean	Median	Mean Difference *(p-value)*	Median Difference *(p-value)*
TOP	1157	0.360	0.338	5807	0.371	0.349	-0.011** *0.020*	-0.012** *0.013*
MGN	1157	0.069	0.0002	5807	0.014	0.0001	0.055*** *<.0001*	0.0001*** *<.0001*
CTR	1157	0.491	0.000	5807	0.313	0.000	0.178*** *<.0001*	N/A
UD	1157	0.349	0.333	5807	0.415	0.429	-0.066*** *<.0001*	-0.095*** *<.0001*
DA	1157	0.476	0.494	5807	0.513	0.525	-0.037*** *<.0001*	-0.031*** *<.0001*
CA	1157	0.059	0.059	5807	0.054	0.051	0.005 *0.115*	0.008*** *0.004*
EA	1157	0.054	0.049	5807	0.008	0.024	0.046*** *<.0001*	0.025*** *<.0001*
VA	1157	1.943	1.404	5807	1.859	1.200	0.084 *0.350*	0.203*** *<.0001*
SIZE	1157	9.381	9.327	5807	9.287	9.248	0.094*** *<.0001*	0.079*** *<.0001*

Panel B shows the differences of the characteristics between the characteristics of listed firms that do and do not pay stock dividends. TOP is the largest shareholder's ownership. MGN is managerial ownership. CTR is a binary dummy variable, which takes the value of one if the firm is ultimately controlled by a private entity, and zero otherwise. UD is the ratio of the number of directors not receiving any payment from the firm to total number of directors. DA is debt to total assets ratio. CA is net operating cash flow to total assets ratio. EA is earnings to total assets ratio. VA is market capitalization to book value of total assets ratio. SIZE is the log value of total assets.
*, **, *** represent the statistical significance at the 0.1, 0.05, and 0.01 levels respectively (two-sided).

Table 6.10 reports the results of the OLS regressions that test the impact of mutual fund holdings on cash and stock dividend rates. All coefficients of mutual fund holdings are significantly positive at the 1% level, indicating that listed firms tend to pay more cash/stock dividends when mutual fund holdings are high. The results on control variables are basically consistent with the results reported in Table 6.8 (t-test and Wilcoxon test). However, due to the endogeneity issue arising from mutual funds' preferences for dividend-paying stocks and the persistence of some mutual fund holdings, I cannot draw any conclusions on the effects of mutual funds on cash/stock dividend rates so far. I further use the changes in mutual fund holdings and the changes in cash/stock dividend rates to replace the simple levels, and repeat the regressions. This can prevent the results from being affected by the endogeneity between mutual funds and listed firms' dividend payouts.

Table 6.10 The effect of mutual funds' holdings on dividend rates (based on listed firms' tradable shares)

	CPS			SPS		
Regression	1	2	3	4	5	6
Intercept	-0.490***	-0.521***	-0.553***	-0.407***	-0.424***	-0.415***
P-value	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*
ALLT	0.663***			0.231***		
P-value	*<.0001*			*0.002*		
LT		0.740***			0.223***	
P-value		*<.0001*			*0.010*	
TT			1.583***			0.754***
P-value			*<.0001*			*0.006*
TOP	0.094***	0.096***	0.093***	-0.004	-0.004	-0.006
P-value	*<.0001*	*<.0001*	*<.0001*	*0.822*	*0.853*	*0.776*
MGN	0.174***	0.175***	0.176***	0.469***	0.470***	0.470***
P-value	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*
CTR	0.004	0.004	0.003	0.058***	0.058***	0.057***
P-value	*0.237*	*0.204*	*0.349*	*<.0001*	*<.0001*	*<.0001*
UD	0.007	0.007	0.008	-0.013	-0.013	-0.013
P-value	*0.165*	*0.194*	*0.122*	*0.130*	*0.126*	*0.143*
DA	-0.092***	-0.093***	-0.101***	-0.045***	-0.045***	-0.047***
P-value	*<.0001*	*<.0001*	*<.0001*	*0.002*	*0.001*	*0.001*
CA	0.187***	0.188***	0.203***	-0.072*	-0.071*	-0.067*
P-value	*<.0001*	*<.0001*	*<.0001*	*0.058*	*0.063*	*0.075*
EA	0.205***	0.209***	0.214***	0.205***	0.207***	0.206***
P-value	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*
VA	0.002	0.003	0.003	0.005	0.005*	0.005
P-value	*0.296*	*0.183*	*0.162*	*0.110*	*0.088*	*0.108*
SIZE	0.058***	0.061***	0.065***	0.049***	0.051***	0.050***
P-value	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*	*<.0001*
Year Dummies	YES	YES	YES	YES	YES	YES
R-sqr	22.83%	22.26%	21.67%	10.51%	10.46%	10.54%
Adj R-sqr	22.67%	22.10%	21.50%	10.32%	10.27%	10.35%
No. of Obs.	6964	6964	6964	6964	6964	6964

This table reports the results of the regressions that test the effect of mutual fund holdings on cash and stock dividend rates. The p-values are based on heteroskedasticity-consistent standard errors that are robust to unknown heteroskedasticity. CPS and SPS are cash dividends per share and stock dividends per share, respectively. ALLT/LT/TT is total/long-term/short-term mutual fund holdings. TOP is the largest shareholder's ownership. MGN is managerial ownership. CTR is a binary dummy variable, which takes the value of one if the firm is ultimately controlled by a private entity, and zero otherwise. UD is the ratio of the number of directors not receiving any payment from the firm to total number of directors. DA is debt to total assets ratio. CA is net operating cash flow to total assets ratio. EA is earnings to total assets ratio. VA is market capitalization to book value of total assets ratio. SIZE is the log value of total assets.

*, **, *** represent the statistical significance at the 0.1, 0.05, and 0.01 levels, respectively (two-sided).

Table 6.11 reports the results of regressions that use the changes in mutual fund holdings as the main independent variables, and the changes in cash/stock dividend rates as the dependent variables. The total number of observations is reduced from 6964 to 5856. The results show that firms increase their cash dividend rates when either long-term or short-term mutual fund holdings increase. There is a positive and significant relation for mutual fund holdings as a whole. As such, *H3a* and *H3b* are supported. On the other hand, firms only increase their stock dividend rates after transient mutual fund holdings increase. The coefficient of the changes in long-term mutual fund holdings is not statistically significant when the changes in stock dividend rates are used as the dependent variables. The empirical evidence also supports *H4a* and *H4b*. Given that the dependent variables are the changes in cash/stock dividend rates, most coefficients of control variables are not statistically significant.

Table 6.11 The effect of the changes in mutual funds' holdings on the changes in dividend rates (based on listed firms' tradable shares)

	ΔCPS			ΔSPS		
Regression	1	2	3	4	5	6
Intercept	0.009	0.004	0.010	0.086	0.081	0.088
P-value	*0.786*	*0.910*	*0.753*	*0.304*	*0.335*	*0.294*
ΔALLT	0.288***			0.289**		
P-value	*<.0001*			*0.020*		
ΔLT		0.245***			0.231	
P-value		*0.001*			*0.117*	
ΔTT			0.644***			0.702**
P-value			*0.001*			*0.014*
TOP	-0.003	-0.003	-0.005	0.026	0.026	0.024
P-value	*0.811*	*0.819*	*0.677*	*0.406*	*0.407*	*0.446*
MGN	-0.080***	-0.080***	-0.081***	-0.243***	-0.242***	-0.244***
P-value	*0.002*	*0.002*	*0.002*	*0.007*	*0.008*	*0.007*
CTR	0.002	0.002	0.002	-0.001	-0.001	-0.001
P-value	*0.558*	*0.554*	*0.565*	*0.911*	*0.913*	*0.907*
UD	0.006	0.006	0.006	0.005	0.005	0.005
P-value	*0.248*	*0.257*	*0.263*	*0.692*	*0.698*	*0.703*
DA	0.002	0.002	0.003	0.013	0.013	0.014
P-value	*0.784*	*0.795*	*0.721*	*0.548*	*0.550*	*0.525*
CA	0.066***	0.066***	0.068***	0.013	0.013	0.015
P-value	*0.001*	*0.001*	*0.001*	*0.787*	*0.786*	*0.764*
EA	0.052**	0.055***	0.055***	0.086**	0.088**	0.088**
P-value	*0.011*	*0.009*	*0.006*	*0.029*	*0.025*	*0.023*
VA	0.001	0.001	0.001	-0.008*	-0.007*	-0.008*
P-value	*0.800*	*0.639*	*0.820*	*0.075*	*0.080*	*0.074*
SIZE	-0.003	-0.003	-0.003	-0.020**	-0.019**	-0.020**
P-value	*0.349*	*0.424*	*0.361*	*0.027*	*0.031*	*0.028*
Year Dummies	YES	YES	YES	YES	YES	YES
R-sqr	2.08%	1.69%	2.03%	4.14%	4.07%	4.15%
Adj R-sqr	1.83%	1.44%	1.78%	3.89%	3.83%	3.90%
No. of Obs.	5856	5856	5856	5856	5856	5856

This table reports the results of the regressions that test the effect of mutual fund holdings on cash and stock dividend rates. The p-values are based on heteroskedasticity-consistent standard errors that are robust to unknown heteroskedasticity.ΔCPS and ΔSPS are the changes in cash dividends per share and the changes in stock dividends per share between year t+1 and t, respectively. ΔALLT/ΔLT/ΔTT is the changes in total/long-term/short-term mutual fund holdings between year t and t-1. TOP is the largest shareholder's ownership. MGN is managerial ownership. CTR is a binary dummy variable, which takes the value of one if the firm is ultimately controlled by a private entity, and zero otherwise. UD is the ratio of the number of directors not receiving any payment from the firm to total number of directors. DA is debt to total assets ratio. CA is net operating cash flow to total assets ratio. EA is earnings to total assets ratio. VA is market capitalization to book value of total assets ratio. SIZE is the log value of total assets.

*, **, *** represent the statistical significance at the 0.1, 0.05, and 0.01 levels, respectively (two-sided).

6.4 Robustness tests

I then measure the ownership of mutual funds in listed firms by using the number of total shares (including both tradable and non-tradable shares) on issue, and repeat the regressions of equations 6.7 and 6.8. The only difference is that the main explanatory variables are ($ALL_{i,t}-ALL_{i,t-1}$), ($L_{i,t}-L_{i,t-1}$) and ($T_{i,t}-T_{i,t-1}$). $ALL_{i,t}$, $L_{i,t}$, and $T_{i,t}$ are total, long-term and short-term mutual funds' ownership measured by the number of listed firms' total shares, respectively. The results, which are reported in Table 6.12, are the same as those reported in Table 6.11.

In Panel A of Table 6.5, which reports the preferences of mutual funds for dividend-paying stocks, DPA is used as the main independent variable. To ensure the result is not driven by the scaling factor of dividends (the book value of total assets), I also repeat the regressions, now using CPS as the independent variable. The un-tabulated results show that the coefficient of CPS is still significantly positive at the 1% level.

As mentioned earlier, there are some listed firms that have paid very high amount of cash dividends. I, therefore, then remove the 1% of firms with the most extreme payouts (either cash or stock dividend payouts) from the sample, and repeat the regressions. The results do not change. As such, the results of all robustness tests confirm those in the original regressions.

Table 6.12 The effect of the changes in mutual funds' holdings on the changes in dividend rates (based on listed firms' total shares)

	ΔCPS			ΔSPS		
Regression	1	2	3	4	5	6
Intercept	0.017	0.009	0.012	0.090	0.082	0.091
P-value	*0.602*	*0.768*	*0.700*	*0.279*	*0.324*	*0.276*
ΔALL	0.522***			0.417		
P-value	*0.001*			*0.150*		
ΔL		0.451***			0.244	
P-value		*0.004*			*0.481*	
ΔT			1.096***			1.271**
P-value			*0.001*			*0.042*
TOP	-0.002	-0.002	-0.004	0.027	0.026	0.025
P-value	*0.889*	*0.859*	*0.746*	*0.395*	*0.411*	*0.424*
MGN	-0.080***	-0.080***	-0.081***	-0.243***	-0.242***	-0.244***
P-value	*0.002*	*0.002*	*0.002*	*0.007*	*0.008*	*0.007*
CTR	0.002	0.002	0.002	-0.001	-0.001	-0.001
P-value	*0.569*	*0.554*	*0.587*	*0.908*	*0.913*	*0.899*
UD	0.006	0.006	0.006	0.005	0.005	0.005
P-value	*0.245*	*0.255*	*0.262*	*0.693*	*0.703*	*0.700*
DA	0.003	0.003	0.003	0.013	0.013	0.014
P-value	*0.713*	*0.742*	*0.704*	*0.527*	*0.535*	*0.517*
CA	0.066***	0.066***	0.067***	0.013	0.014	0.014
P-value	*0.001*	*0.001*	*0.001*	*0.787*	*0.780*	*0.776*
EA	0.053***	0.055***	0.056***	0.087**	0.090**	0.089**
P-value	*0.010*	*0.008*	*0.006*	*0.025*	*0.022*	*0.022*
VA	-0.001	0.001	0.001	-0.008*	-0.007*	-0.008*
P-value	*0.979*	*0.760*	*0.889*	*0.072*	*0.078*	*0.072*
SIZE	-0.004	-0.003	-0.003	-0.021**	-0.020**	-0.020**
P-value	*0.225*	*0.318*	*0.315*	*0.023*	*0.029*	*0.024*
Year Dummies	YES	YES	YES	YES	YES	YES
R-sqr	1.87%	1.59%	1.80%	4.07%	4.03%	4.12%
Adj R-sqr	1.62%	1.34%	1.55%	3.83%	3.79%	3.87%
No. of Obs.	5856	5856	5856	5856	5856	5856

This table reports the results of the regressions that test the effect of mutual fund holdings on cash and stock dividend rates. The p-values are based on heteroskedasticity-consistent standard errors that are robust to unknown heteroskedasticity. ΔCPS and ΔSPS are the changes in cash dividends per share and the changes in stock dividends per share between year t+1 and t, respectively. ΔALL/ΔL/ΔT is the changes in total/long-term/short-term mutual fund holdings between year t and t-1. ALL/L/T is measured by the number of listed firms' total shares (including both tradable and non-tradable shares). TOP is the largest shareholder's ownership. MGN is managerial ownership. CTR is a binary dummy variable, which takes the value of one if the firm is ultimately controlled by a private entity, and zero otherwise. UD is the ratio of the number of directors not receiving any payment from the firm to total number of directors. DA is debt to total assets ratio. CA is net operating cash flow to total assets ratio. EA is earnings to total assets ratio. VA is market capitalization to book value of total assets ratio. SIZE is the log value of total assets.

*, **, *** represent the statistical significance at the 0.1, 0.05, and 0.01 levels, respectively (two-sided).

6.5 Conclusion

Essay Three investigates the relationship between mutual funds and dividend payouts. It starts with testing the preferences of long-term and short-term mutual funds for dividend-paying stocks. The empirical evidence suggests that both short-term and long-term mutual funds prefer to hold the shares of listed firms that pay cash or stock dividends, but the evidence that they are attracted to high cash or stock dividends is not obvious. Moreover, this study finds that mutual funds' preference for stock dividends is not as strong as that for cash dividends.

Essay Three then investigates the impact of long-term and short-term mutual funds on cash and stock dividend payout rates. Transient mutual funds encourage listed firms to pay larger dividends (either cash or stock dividends) through their shareholdings. However, long-term mutual funds only encourage listed firms to distribute higher cash dividends, but do not significantly influence stock dividend rates. This may be due to the concern of that high stock dividends have a negative impact on some key financial ratios (e.g. EPS) in the long-run. These financial ratios play an important role in rights issues and seasoned equity offerings in China (Anderson, et al., 2011). Furthermore, long-term mutual funds include dedicated mutual funds, which have more concentrated investment or larger holdings in portfolio firms. As such, they may be concerned about the liquidity, since they will receive a number of new shares when listed firms pay stock dividends and it is hard to sell a big amount of shares without affecting stock prices.

Since the results of Table 6.9 suggest that the changes in cash/stock dividend

rates can hardly influence mutual funds' holdings, the results reported in Table 6.11 have not been affected by the endogeneity between the holdings by mutual funds and listed firms' dividend payouts.

Chapter 7 Conclusion

7.1 Introduction

This final chapter provides a concluding summary of this thesis. Section 7.2 summarises the key findings of this thesis. The contributions to the academic literature and policy implications are discussed in Section 7.3. Section 7.4 identifies the limitations of this thesis and highlights some areas for future research.

7.2 Major findings

This thesis firstly examines the investment behaviours of mutual funds in China. Using factor and cluster analyses, the empirical evidence shows that the majority of mutual funds in China are quasi-index funds (58.58%), which use buy-and-hold investment strategies, followed by transient funds (31.27%), which prefer diversified portfolios and frequent trading. There are only a few dedicated mutual funds (3.38%) in China and the average holding period of Chinese dedicated mutual funds is shorter than that in developed markets.

When selecting portfolio firms, Chinese mutual funds, in general, prefer firms with low systematic risk, low liquidity, good operating and stock market performance, and large firm size. Mutual funds also favour state-controlled listed firms over non-state-controlled ones. As well as using different investment strategies, different types of mutual funds prefer different firm characteristics when making investment

decisions. Using regression analyses, this thesis finds that quasi-index mutual funds prefer listed firms with large size, low risk, low liquidity, good operating performance, good growth opportunities, and good stock market performance; transient mutual funds choose firms with good operating performance and high growth opportunities; and dedicated mutual funds prefer to invest in firms with small size and high liquidity. Using horse racing regressions, this thesis also finds that the primary concerns for quasi-index, transient and dedicated funds are high profitability, high growth rates and small firm size, respectively. Transient mutual funds' investment decisions do not rely on firm attributes as much as the other fund types.

The main aims of the Chinese government, when developing the mutual fund industry, were to build up a group of market-orientated institutional investors to stabilize the high trading activity in the secondary markets, and improve corporate governance of listed companies. I believe that the dominance of quasi-index mutual funds, and their buy-and-hold trading strategy, would help stabilize the high trading activity carried out by a high number of individual investors. Also, the fact that mutual funds make sensible investment decisions based on essential firm characteristics (low risk and good firm performance) supports the government's purpose on developing the mutual fund industry in China.

After classifying mutual funds and examining the trading behaviours of different types of mutual funds, this thesis then investigates how long-term (including both quasi-index and dedicated) and short-term (transient) mutual funds influence the earnings management activities of listed firms in China. Earnings management are measured in three ways: non-core income, discretionary accruals, and positive

discretionary accruals. The results of t-test and Wilcoxon test show that listed firms with mutual fund ownership have lower non-core income than listed firms without mutual fund ownership. Conversely, listed firms with mutual fund ownership have higher discretionary accruals than listed firms without mutual fund ownership.

Mutual funds are more sophisticated than individual investors, and are more likely to perceive the earnings management activities of listed firms. In addition to OLS regressions, this thesis uses the 2SLS regressions to control for the potential endogeneity between mutual funds' ownership and listed firms' earnings management activities. The results of the 2SLS regressions are consistent with those of OLS regressions. Both long-term and short-term mutual funds can restrict listed firms from manipulating non-core items, which are easy to detect by both regulators and investors. However, long-term mutual funds are unlikely to significantly constrain the accruals management of listed firms, which are more sophisticated and harder to detect. After controlling for the endogeneity, transient mutual funds' ownership is significantly and positively associated with both listed firms' discretionary accruals and positive discretionary accruals. This suggests that transient mutual funds encourage earnings management in a more subtle way. Hence, transient mutual funds could attract more investors to drive up the share prices, and make significant short-term capital gains.

Finally, this thesis investigates the relationship between mutual funds and listed firms' dividend policies in China. Both cash and stock dividend payouts are covered in Essay Three. The results of t-test and Wilcoxon test show that listed firms that pay cash or stock dividends have significantly larger mutual fund holdings than firms that

do not pay cash or stock dividends. Consistently, the results of the regression analysis also indicate that both long-term and short-term mutual funds prefer to hold the shares of listed firms that pay cash or stock dividends. However, mutual funds' preference for stock dividends is not as strong as that for cash dividends. Additionally, although mutual funds are willing to invest in dividend-paying stocks, they are not specially attracted to firms that pay high cash or high stock dividends.

Furthermore, the empirical findings indicate that listed firms tend to pay more cash or stock dividends after transient mutual funds' holdings increase. Long-term mutual funds only encourage listed firms to distribute more cash dividends through their shareholdings, but cannot significantly influence stock dividend rates. There may be two reasons for this. First, a large stock dividend payment will have a negative impact on some key financial ratios that play an important role in rights issues and seasoned equity offerings. Second, a large stock dividend payment will significantly increase the total number of shares on issue and have a negative impact on the liquidity, which would be a major concern for long-term mutual funds.

7.3 Contributions and policy implications

This thesis contributes to the academic literature on the relationship between mutual funds and listed firms in China, where mutual funds are relatively new to the market place and less regulated. Essay One examines mutual funds' investment behaviours and their criteria of selecting portfolio firms, and contributes to the literature in three ways. First, unlike previous studies on Chinese mutual funds, which treat mutual funds as being homogeneous, this thesis classifies mutual funds into

different categories based on their past investment activities. Second, when employing the Bushee (2001) methodology to classify mutual funds, this thesis makes adjustments based on the characteristics of mutual funds, namely more frequent trading and the limitation of holding tradable shares. Third, this thesis investigates the common characteristics of listed firms preferred by mutual funds, and the different characteristics preferred by different types of mutual funds. The regression analysis results do support the early findings on categorizing mutual funds in China.

The findings of Essay One can help both investors and regulators to gain better understanding in Chinese mutual funds, and see whether the development of mutual funds has met the expectations of the Chinese government. Furthermore, the findings of Essay One suggest that more work needs to be done to improve corporate governance. First, almost 90% of mutual funds were transient and quasi-index funds. According to Porter (1992), the high turnover rates of transient funds and the small fragmented holdings of quasi-index funds would stop them from effectively monitoring their portfolio firms. Second, previous research (such as Bushee, 2001; Koh, 2007) suggests that dedicated institutional investors can contribute more to the sound corporate governance than other types of institutions, since they usually have larger stakes in their portfolio firms, longer holding periods, and greater knowledge about the portfolio firms. Nonetheless, besides the fact that the dedicated funds are so few (3.38%) in Chinese stock markets, the holding period of the dedicated funds is also shorter than that in the US. Essay One also finds that the investment targets of Chinese dedicated funds are risky and small firms. Therefore, I believe that regulatory bodies should encourage the development of 'real' dedicated mutual funds in China, which construct more stable investment portfolios and highlight the long-term earning

ability and corporate governance of listed firms.

Essay Two focuses on the relationship between mutual funds' holdings and the earnings management behaviours of listed firms. Since previous studies only use aggregate institutional ownership in the empirical analyses, Essay Two contributes to the literature on the difference between the impact of long-term focused and short-term focused mutual funds on earnings management in China. Previous studies use either non-core income or discretionary accruals as the proxies for earnings management in China. Unlike these studies, Essay Two uses three different earnings management measures (i.e. non-core income, discretionary accruals and positive discretionary accruals), and compares them with each other. Accordingly, Essay Two also sheds light on how listed firms manipulate earnings in China.

The policy implication of Essay Two is that regulatory bodies should encourage mutual funds to adopt more stable investment strategies, so that long-term mutual funds could have greater power in reducing the non-core income management of listed firms, and become capable of detecting and constraining accruals management. The regulators should also watch more closely transient mutual funds. If fund managers are found to encourage the earnings management activities of listed firms, their behaviours should be constrained.

The literature on the relationship between mutual funds and listed firms' dividend payout in China is limited. Essay Three helps to fill this gap by providing empirical evidence on how different mutual fund types influence the dividend payout policies of listed firms. Dividend payments (especially cash dividend payments) are

regarded as an outcome of the agency conflicts between large shareholders and minority shareholders/managers (e.g., Jensen, 1986; Shleifer and Vishny, 1986). Essay Three also sheds a light on how institutional investors help mitigate the agency problems of listed firms in China.

Moreover, the findings of Essay Two and Three confirm the importance of distinguishing institutional ownership when investigating the relationship between institutional investors and major corporate activities, since long-term and transient mutual funds behave in different ways when engaging with listed firms' earnings management and dividend payouts.

Overall, the findings of this thesis suggest that mutual funds adopt reasonable investment strategies. By pooling minority interests of diffused individual investors, mutual funds can have a positive impact on the corporate governance and other major activities (i.e. decreasing non-core income management, encouraging listed firms to pay more dividends). However, there is still a room for further improvement (i.e. restricting the accruals management). Regulatory bodies may enact rules to encourage mutual funds to adopt more steady and concentrated investment strategies, so that mutual funds can pay more attention to the long-term earnings ability and exert a greater impact on the corporate governance of listed firms.

7.4 Limitations and suggestions for future research

Mutual fund classification is the foundation of this thesis. It is noteworthy that the methodology used to classify mutual funds was developed by Bushee (2001). As

such, the reliability of the empirical results of this thesis may depend on the practicability of the methodology of Bushee (2001). Moreover, this thesis uses mutual funds' top ten largest shareholdings in stocks to investigate mutual funds' investment behaviours, and their impact on portfolio firms. To the best of my knowledge, a complete dataset on mutual funds' shareholdings was unavailable when I started this thesis in 2009. Since the mutual funds' ownership other than their top-ten largest ownership in stocks is extremely small, and some mutual funds hold less than ten stocks in some quarters, I believe that the lack of complete data is unlikely to strongly bias the research results. However, the empirical results of this thesis need to be interpreted with some caution.

Another limitation of this thesis is that it only focuses on mutual funds, rather than including all types of institutional investors (e.g. banks, insurance companies, pension funds) in the research. Although the stake of other types of institutions in Chinese stock markets is much smaller than that of mutual funds, it has grown rapidly in recent years. Due to the different risk appetite (e.g. insurance companies and pension funds may prefer to invest in less riskier stocks) and investment size, the empirical findings on mutual funds may not apply to other types of institutional investors. Therefore, future research may extend the focus.

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