

Mutual Funds' Holdings and Listed Firms' Dividend Payouts: Evidence from China

Jing Chi¹, Jingjing Yang² & Martin Young^{1,3}

¹ Massey University, New Zealand

² Jiangxi Normal University, China

³ Xiamen University, China

Correspondence: Dr. Jingjing Yang, Associate Professor, International Centre for Financial Research, Jiangxi Normal University, Nanchang, China. E-mail: jyang@jxnu.edu.cn

Received: July 10, 2014

Accepted: July 27, 2014

Online Published: July 30, 2014

doi:10.5430/afr.v3n3p84

URL: <http://dx.doi.org/10.5430/afr.v3n3p84>

Abstract

This paper investigates the relationship between listed firms' dividend policies and mutual funds' investment decisions in China. We find that all types of mutual funds prefer to invest in companies that distribute earnings by way of dividends. Robustness checks show that mutual funds prefer cash dividends to stock dividends, but they are not particularly attracted to firms that pay high cash or high stock dividends. We further show that all types of mutual funds can positively influence listed firms' cash dividend pay-out rates, but only transient (short-term) funds influence stock dividend increases of listed firms.

Keywords: Mutual funds, Dividends, China

JEL Codes: G29, G35

1. Introduction

This paper examines mutual fund preferences for cash versus stock dividends in China and whether mutual funds' holdings in listed firms can influence dividend policy. We consider two distinct groups of mutual funds, dedicated mutual funds and quasi-index funds which we classify as long-term funds and transient mutual funds which we classify as short-term funds. We examine whether long-term mutual funds behave differently from short-term ones in the above two relationships.

The literature suggests several reasons why institutional ownership and dividend 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 in 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 non-tradable shareholdings (Note 1) of listed firms in China, dividend pay-out behaviour can be more complex and empirical evidence from developed countries may not be applicable. The literature suggests that non-tradable shareholders prefer cash dividends, while tradable shareholders favour stock dividends in China (e.g. Wei and Xiao, 2009 and Huang, Shen and Sun, 2011), as stock dividends are associated with positive market reaction and only tradable shareholders can benefit from the price appreciation in the secondary market. Mutual funds can only invest in tradable shares in China. Therefore, they may prefer stock dividends as other individual shareholders. However, mutual funds may also favour cash dividends due to liquidity concern, their role in reducing agency problems or political pressure from the controlling shareholders. In this paper, we first examine mutual funds' preference for the different types of dividends. In addition, Firth, Lin and Zou (2010) state that mutual funds are the largest type of institutional investor in tradable shares. Their holdings account for 76% of all the institutional tradable shareholdings in China. Although their absolute holdings are not as high as those in the US due to the existence of non-tradable shares, being the largest tradable shareholders, mutual funds could have an influence on dividend policies. We also investigate this issue in this paper.

The empirical findings of this paper suggest 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 cash dividends is stronger than that for stock dividends. Additionally, although mutual funds are willing to invest in dividend-paying stocks, they are not particularly attracted to firms that pay high cash or high stock dividends. As for the impact of mutual funds on dividend policies, both short-term and long-term mutual funds' holdings increases listed firms' cash dividends pay-outs, but only short-term funds' holdings encourage stock dividend increases by listed firms. This may be due to the concern that high stock dividends would have a negative impact on some key financial ratios (e.g. earnings per share) in the long-run.

The remainder of this paper is organised as follows: Section Two reviews the related literature and discuss the hypothesis development. Section Three examines the relationships between listed firms' dividend policies and mutual funds' investment decisions. Section Four presents robustness checks, and Section Five concludes.

2. Literature review

2.1 Listed firms' dividend payouts in the US

Dividend policy has been of interest in the finance literature since the evolution of the cash dividend puzzle of Miller and Modigliani (1961). Shareholders should be indifferent to either getting the dividends or having them re-invested in the listed firm because they own the firm. 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 payouts may reduce agency costs as dividend payouts increase the likelihood of using external financing to monitor the managers at relatively lower cost. Furthermore, Jensen (1986) argues that managers may act in their own interest at the expense of the shareholders by spending cash for their own benefit. 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 a listed firm, they are capable of taking advantage of the minority shareholders by expropriating the wealth of the listed firm (Shleifer and Vishny, 1986, 1997; Johnson, La Porta, Lopez-De-Silanes, and Shleifer., 2000). Cash dividend payouts could prevent the controlling shareholders from extracting private benefits at the expense of the minority shareholders, and thus, listed firms in countries with better protection of the minority shareholders are found to pay more cash dividends (La Porta, Lopez-De-Silanes, Shleifer, and Vishny, 2000).

Another view of cash dividend pay-outs 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. Both Kalay and Loewenstein (1985) and Nissim and Ziv (2001) report a positive relationship between dividend changes and listed firms' future earnings in the US.

Stock dividend payments are 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).

Baker and Phillips (1993) 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. In contrast, 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 shortages. Baker and Gallagher (1980) add that the main purpose of the managers paying stock dividends is to decrease share prices. Accordingly, at decreased prices, the stock becomes more affordable and more attractive to investors.

2.2 Listed firms' dividend payouts in China

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. Eun and Huang (2007)

argue that cash dividends signal shareholder-friendly corporate governance, and thus the individual investors are willing to pay a premium for cash dividend paying stocks in China.

As most Chinese listed firms have concentrated ownership structure, the agency conflict between the controlling shareholders and minority shareholders becomes the major concern for individual investors. Moreover, the shares held by the controlling shareholders are usually non-tradable, whereas the shares held by the individual shareholders are tradable. The controlling shareholders therefore could not benefit from the share price appreciation of the stock in the secondary market, and the cash dividends may be the only legal cash flow that non-tradable shareholders could expect from the listed firms, so controlling shareholders could force the managers to pay (or pay high) cash dividends (Huang et al., 2011). Moreover, the state-controlled listed firms usually have more political obligations (e.g. supporting social welfare; financing the non-profitable divisions or public projects). The state shareholders, who are the major non-tradable shareholders, would be eager to receive more cash dividends from the listed firms to fulfil their political obligations (Zou, Wong, Shum, Xiong, and Yan, 2008; Chen, Jian and Xu, 2009).

As for the stock dividends, Anderson, Chi, Ing-aram, and Liang (2011) argue that firms with good investment opportunities are likely to pay more stock dividends. 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.

Under the current Chinese tax system, individual investors are not required to pay tax on capital gains. Cheng et al., (2009) and Anderson et al. (2011) find that listed firms have positive abnormal returns surrounding the stock dividend announcements. Therefore, compared to the non-tradable shareholders who prefer cash dividends, the tradable shareholders are more willing to receive stock dividends (Wei, Zhang and Xiao, 2004; Cheng et al., 2009). Due to the preference differences between the non-tradable and tradable shareholders for dividend type, the managers of the listed companies may cater to the preferences of different shareholders when deciding dividend policy in China (Wei et al., 2004).

2.3 Institutions and dividend payouts

The literature on the relationship between institutional investors and listed firms' dividend payouts is mixed. Allen et al., (2000) argue that undervalued firms pay more dividends to attract institutional investors to signal their true value, as institutional investors are expert at revealing value and provide monitoring services in the US. According to Allen et al., (2000), institutions prefer dividends for two major reasons: 1) the institutions in the US are regulated by the *prudent man rule* and dividend payments provide prima facie evidence that an investment is prudent; 2) some institutions are taxed less heavily on dividends than the individual investors. Guo and Ni (2008) also find that institutional investors can increase the listed firms' dividend payout amounts in the US, due to the tax advantages of the institutional investors. Short et al., (2002) report that the institutional investors may force listed firms to pay more cash dividends in the UK, as institutions can benefit 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 pay-out ratios. 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. Hankins, Flannery and Nimalendran (2008) find that institutions have reduced their holdings of dividend-paying stocks since 1990s, and argue that the decline of their preference 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.

Due to the different institutional background (i.e. split share structure, large non-tradable stake and different tax system), the empirical findings in the US and other developed nations may not apply to the Chinese markets. In this paper, we examine the relationship between mutual funds and both the cash and stock dividend pay-outs of listed firms. We also differentiate mutual funds into long-term and short-term funds based on their past trading strategies.

2.4 Hypothesis development

Cash dividend payments are regarded as a signal of good corporate governance, as they can reduce cash under insiders' control, so individual investors are willing to pay a premium for cash dividend-paying stocks in China (Eun and Huang, 2007). La Porta et al. (2000) also suggest that cash dividend payouts could prevent the controlling shareholders from extracting private benefits at the expense of the minority shareholders. Moreover, according to the dividend signalling theory, cash dividends could be considered as a signal for future earnings and increase in the future cash flows (e.g. Miller and Rock, 1985; Nissim and Ziv, 2001). Given that mutual funds may prefer to invest

in firms with good operating performance, they may also show preferences towards cash dividend-paying stocks. As such, although mutual funds (regardless of type) hold tradable shares, they may prefer to invest in firms that pay cash dividends, particularly those that pay high cash dividends. Accordingly, we 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 cash dividends.

The literature also suggests that shareholders holding tradable shares are more willing to receive stock dividends from listed firms in China (e.g. Cheng et al., 2009; Wei and Xiao, 2009). Paying stock dividends decreases share prices, which may increase trading activities as share prices become more attractive. Moreover, stock dividend payments can also provide investors in tradable shares with significant capital gains (Cheng et al., 2009; Anderson et al., 2011), which are tax free for mutual funds and individual investors. As such, mutual funds (regardless of type) may prefer to invest in the listed firms that pay stock dividends, particularly those that pay high stock dividends (Note 2). We 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 stock dividends.

Chinese listed firms overall have poor corporate governance that cannot provide minority shareholders with effective protection (Allen et al., 2005; Liu and Lu, 2007). La Porta et al. (2000) suggest that poor minority shareholder protection is significantly associated with low cash dividend payouts worldwide. Allen et al., (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 states 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, 2003). As such, long-term mutual funds may encourage listed firms to increase cash dividends payouts. We summarize this expectation in *H3a*:

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

On the other hand, institutional investors, including mutual funds, may align with the controlling or largest shareholders in China (e.g. Fu and Tan, 2008; Firth et al., 2010). When engaging in the non-tradable reform, mutual funds are found to agree with less compensation to tradable shareholders, because they are subject to political pressure or they can benefit from getting insider information from listed firms (Fu and Tan, 2008; Firth et al., 2010). Given that the controlling or the largest shareholders are eager to get cash dividends (Huang et al., 2011), transient mutual funds may support large shareholders and agree with high cash dividend payouts. As such, although transient mutual funds, which generally have high levels of portfolio turnover and diversification, cannot improve the corporate governance of listed firms (Porter, 1992; Koh, 2007), they may also push up listed firms' cash dividend payout rates through their shareholdings. Accordingly, we 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 tradable shareholders 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), which are important to rights issues and seasoned equity offerings in China (Anderson et al., 2011). Moreover, large stock dividend payments can significantly 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, and may pay more attention to the liquidity of the listed firms when selecting portfolio firms (Yang, Chi and Young, 2014). As such, although long-term mutual funds prefer to hold the shares of stock dividend paying firms, they may not necessarily increase listed firms' stock dividends payouts. Accordingly, we 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 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 and pay less attention to the listed firms' liquidity (Yang et al., 2014). 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. We summarize this expectation in *H4b*:

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

3. The relationship between listed firms' dividend policies and mutual funds' investment decisions

3.1 Sample selection

The Chinese Securities Regulatory Commission (CSRC) enacted the "Regulation of information disclosure of security investment funds" on 1st July 2004. The regulation requires security investment funds to announce the quarterly, semi-annual and annual results publicly (Act 5, Section 2). Mutual funds in China therefore started to disclose the details of their portfolios since the third quarter of 2004. Thus, the sample period of this research is from October 2004 to December 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). The sample includes 509 mutual funds (including both open-end and close-end funds) and 1576 listed firms. 176 listed firms are excluded from the sample due to the sample selection criteria.

3.2 Categorizing mutual funds

In order to examine the heterogeneity of Chinese mutual funds, we first categorize them into three groups based on their past investment behaviours. This methodology (Note 3) was developed by Bushee (2001), but is adapted for the unique characteristics of Chinese mutual funds. We use four variables to measure mutual funds' portfolio turnover and holding periods, and another four to estimate the block size of mutual funds' investment. We then employ factor analysis to identify the common factors from the variables, and employ the cluster analysis to identify three mutual funds types based on their factor scores: dedicated, transient and quasi-index mutual funds. We made the following two changes to the methodology of Bushee (2001): 1) we reduce the continuous holding benchmark from eight quarters to four quarters; 2) we use 5% of tradable shares instead of total shares as the criteria to construct the variables that measure the block size of mutual funds. This is because the holding periods of Chinese mutual funds are overall shorter than that of American mutual funds, and that Chinese mutual funds can only invest in tradable shares.

Table 1 shows the characteristics and distribution of three mutual fund types. Factors 1, 2, and 3 are three common factors identified by the factor analysis. Factor 1 (Note 4) measures the variables that describe the block size of the mutual funds' investment in their portfolio firms. Factor 2 (Note 5) measures the variables that measure the stability (the holding period) of the mutual funds' ownership in their portfolio firms. Factor 3 (Note 6) measures the variables that describe the portfolio turnover of the mutual funds. Dedicated, quasi-index, and transient mutual funds have the highest factor 1 score, the highest factor 2 score, and the highest factor 3 score, respectively. This indicates that dedicated mutual funds overall have the most concentrated portfolios and largest investment size; quasi-index funds generally have the longest holding periods (Note 7); and transient mutual funds overall buy and sell the shares of listed firms most frequently. Of all 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, quasi-index mutual funds are the dominant funds in China.

Table 1. Mutual fund classification

Mutual Fund Types	N	Proportion	Factor 1 (Block Size)		Factor 2 (Holding Period)		Factor 3 (Portfolio turnover)	
			Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Quasi-index funds	1004	58.58%	-0.182	0.586	0.245	1.120	-0.533	0.695
Transient funds	536	31.27%	-0.109	0.612	-0.451	0.645	1.035	0.769
Dedicated funds	58	3.38%	4.157	1.485	-0.07	1.048	-0.332	0.904

This table reports the results of the mutual fund classification. (1) Factor 1 refers to mutual fund's factor 1 score. (2) Factor 2 refers to mutual fund's factor 2 score. (3) Factor 3 refers to 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. (4) N is number of institution-year observations. (5) Proportion is the ratio of number of institution-year observations to total number of institution-year observations. There are 115 mutual funds which have not been classified (6.7% of total number of observations). It is because that these funds have not been operated for more than one year or they have missing data.

Compared with other types of mutual funds, dedicated mutual funds have more incentive to oversee the management, and can reduce listed firms' myopic behaviours in the US (Porter, 1992). However, dedicated mutual funds only account for a small percentage of all mutual funds in China. Since both dedicated and quasi-index mutual funds hold the shares of their portfolio firms longer than transient mutual funds, we group them together as long-term institutional investors, and regard transient mutual funds as short-term institutional investors as in Koh (2007).

3.3 Main variables

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

Two dummy 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. We use two variables to measure the level of listed firms' cash dividend payments. We 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.

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

Furthermore, when examining the impact of mutual fund holdings on dividend policies, we construct a series of variables to control for the effects of firm attributes on dividend policies. We 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 shareholders of non-tradable shares, and cannot benefit from share price appreciation in the secondary market. Cash dividends may be the only legal cash flow such shareholders can expect from listed firms (Huang et al., 2011). As such, the largest shareholders would prefer cash dividends to stock dividends (Wei and Xiao, 2009, Huang et al., 2011). We define MGN as the ownership of listed firm's executives. Wei et al., (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 et al., (2009) argue that state-controlled listed firms are usually cash-thirsty, and they require money to support social welfare, to finance the non-profitable divisions, or to fund public projects. As such, we 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. the government or state-owned enterprises).

In addition, we 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 or 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 et al., 2011). We include LEVERAGE, 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, we 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), we include ROA and Market-to-book ratio to control for listed firms' profitability and investment opportunities. ROA is a firm's return scaled by its total assets; while Market-to-book ratio 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.

3.4 Research models

The Ordinary Least Squares (OLS) regressions are used to test mutual funds' preferences for cash or stock dividends. The regressions are shown as follows:

$$MT_{i,t} = \alpha_0 + \alpha_1 CD_{i,t} + \alpha_2 DPA_{i,t} + \alpha_3 BETA_{i,t} + \alpha_4 CAR_{i,t} + \alpha_5 Market\text{-}to\text{-}book_{i,t} + \alpha_6 SALES_{i,t} + years + \epsilon_{i,t} \quad (1)$$

$$MT_{i,t} = \alpha_0 + \alpha_1 SD_{i,t} + \alpha_2 SPS_{i,t} + \alpha_3 BETA_{i,t} + \alpha_4 CAR_{i,t} + \alpha_5 Market\text{-}to\text{-}book_{i,t} + \alpha_6 SALES_{i,t} + years + \epsilon_{i,t} \quad (2)$$

$MT_{i,t}$ 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 $SD_{i,t}$ are 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 the end of April 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, we further repeat the regressions year by year.

Moreover, following Grinstein and Michaely (2005), we use another set of regressions to examine the effect of the changes in cash or stock dividend rates on the changes in mutual fund holdings to further test mutual funds' preference of high cash or stock dividends. This set of regressions can also effectively address the issue of endogeneity arising from mutual funds' preferences for cash or stock dividends. The four exogenous variables used in Equations 1 and 2 are used here as control variables.

$$\Delta MT_{i,t} = \alpha_0 + \alpha_1 \Delta CPS_{i,t} + \alpha_2 BETA_{i,t} + \alpha_3 CAR_{i,t} + \alpha_4 Market\text{-}to\text{-}book_{i,t} + \alpha_5 SALES_{i,t} + years + \epsilon_{i,t} \quad (3)$$

$$\Delta MT_{i,t} = \alpha_0 + \alpha_1 \Delta SPS_{i,t} + \alpha_2 BETA_{i,t} + \alpha_3 CAR_{i,t} + \alpha_4 Market\text{-}to\text{-}book_{i,t} + \alpha_5 SALES_{i,t} + years + \epsilon_{i,t} \quad (4)$$

$\Delta MT_{i,t}$ are the changes in different types of mutual funds' holdings ($ALLT_{i,t}$, $LT_{i,t}$, and $TT_{i,t}$) between the end of year t and $t-1$. Different from Equations 1, CPS is used to get the changes of cash dividend rates between current year and previous year in Equation 3. It is because that 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 $t-1$, which are distributed early of the year.

Furthermore, we use two sets of OLS regressions to investigate the impact of mutual fund holdings on dividend policies. First, we use cash or stock dividend rates as the dependent variables and mutual fund holdings as the main independent variables. The regressions are as follows:

$$CPS_{i,t+1} = \alpha_0 + \alpha_1 MT_{i,t} + \alpha_2 TOP_{i,t} + \alpha_3 MGN_{i,t} + \alpha_4 CTR_{i,t} + \alpha_5 UD_{i,t} + \alpha_6 LEVERAGE_{i,t} + \alpha_7 CA_{i,t} + \alpha_8 ROA_{i,t} + \alpha_9 Market\text{-}to\text{-}book_{i,t} + \alpha_{10} SIZE_{i,t} + years + \epsilon_{i,t} \quad (5)$$

$$SPS_{i,t+1} = \alpha_0 + \alpha_1 MT_{i,t} + \alpha_2 TOP_{i,t} + \alpha_3 MGN_{i,t} + \alpha_4 CTR_{i,t} + \alpha_5 UD_{i,t} + \alpha_6 LEVERAGE_{i,t} + \alpha_7 CA_{i,t} + \alpha_8 ROA_{i,t} + \alpha_9 Market\text{-}to\text{-}book_{i,t} + \alpha_{10} SIZE_{i,t} + years + \epsilon_{i,t} \quad (6)$$

$CPS_{i,t+1}$ 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 or stock dividend payout ratios. All other independent variables are measured at year-end t from 2005 to 2009.

Second, we use the changes in dividend rates as the dependent variables, and use the changes in mutual fund holdings as the main independent variables in the other set of regressions. 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 or stock dividends and the persistence of some mutual funds' holdings. The regressions are:

$$\Delta CPS_{i,t+1} = \alpha_0 + \alpha_1 \Delta MT_{i,t} + \alpha_2 TOP_{i,t} + \alpha_3 MGN_{i,t} + \alpha_4 CTR_{i,t} + \alpha_5 UD_{i,t} + \alpha_6 LEVERAGE_{i,t} + \alpha_7 CA_{i,t} + \alpha_8 ROA_{i,t} + \alpha_9 Market\text{-}to\text{-}book_{i,t} + \alpha_{10} SIZE_{i,t} + years + \epsilon_{i,t} \quad (7)$$

$$\Delta SPS_{i,t+1} = \alpha_0 + \alpha_1 \Delta MT_{i,t} + \alpha_2 TOP_{i,t} + \alpha_3 MGN_{i,t} + \alpha_4 CTR_{i,t} + \alpha_5 UD_{i,t} + \alpha_6 LEVERAGE_{i,t} + \alpha_7 CA_{i,t} + \alpha_8 ROA_{i,t} + \alpha_9 Market\text{-}to\text{-}book_{i,t} + \alpha_{10} SIZE_{i,t} + years + \epsilon_{i,t} \quad (8)$$

$\Delta CPS_{i,t+1}$ or $\Delta SPS_{i,t+1}$ is the changes in cash or stock dividend rates between year $t+1$ and t . $\Delta MT_{i,t}$ 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 $t-1$.

3.5 Empirical results

Figures 1-3 report the distributions of listed firms' DPA ratios (cash dividends scaled by the book value of assets), CPS ratios (cash dividends per share ratios), and DPE ratios (cash dividends scaled by earnings (Note 8)) during the sample period. Both the frequency and cumulative frequency of dividend payouts are reported. 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 of listed firms that have paid cash dividends are 2.14% and 1.45%, respectively. The majority of listed firms' DPA ratios are between 1% and 3%. The mean and median CPS of cash dividend paying firms are 0.15 and 0.1, respectively. Around 80% of listed firms' CPS ratios are between 0.05 and 0.3. The mean and median DPE of listed firms that have paid cash dividends 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) (Note 9), the cash dividend payout ratios in China are lower than that in the US. All three figures show that only a few listed firms have paid very high cash dividends to their shareholders in China.

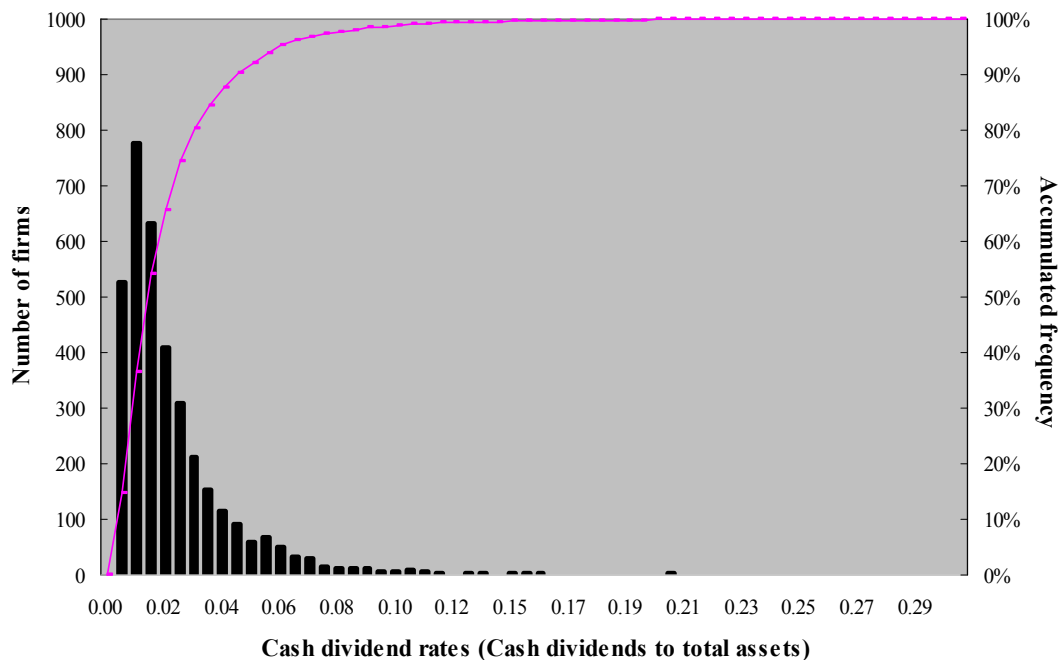


Figure 1. The distribution of listed firms' DPA ratios from 2005 to 2009

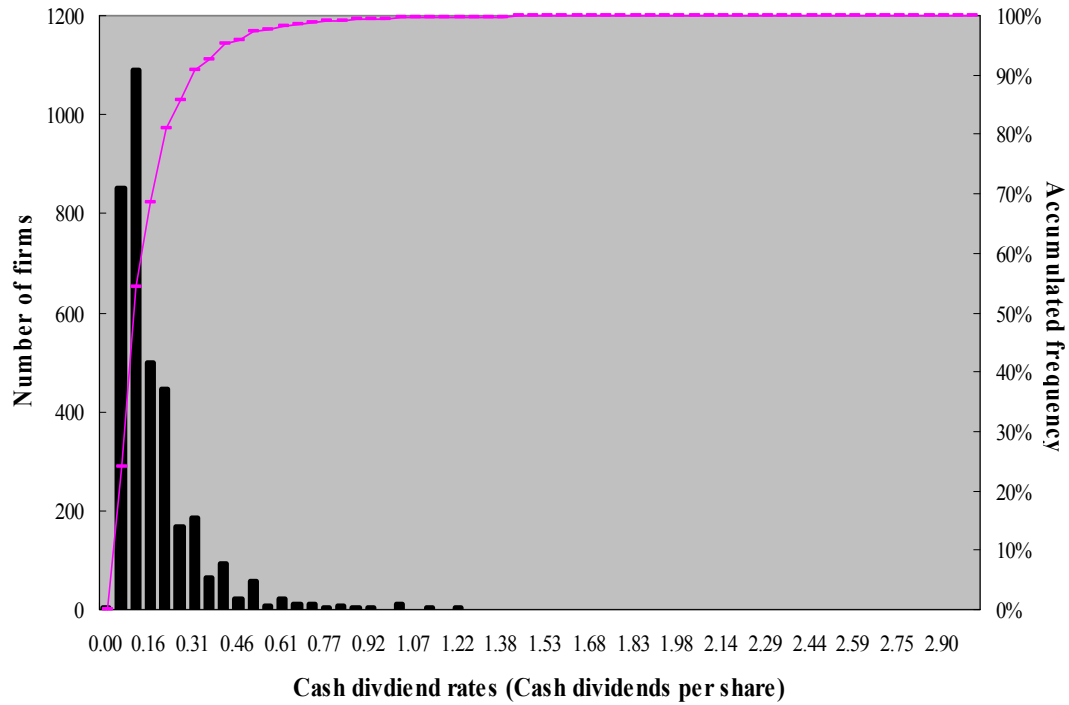


Figure 2. The distribution of listed firms' CPS ratios from 2005 to 2009

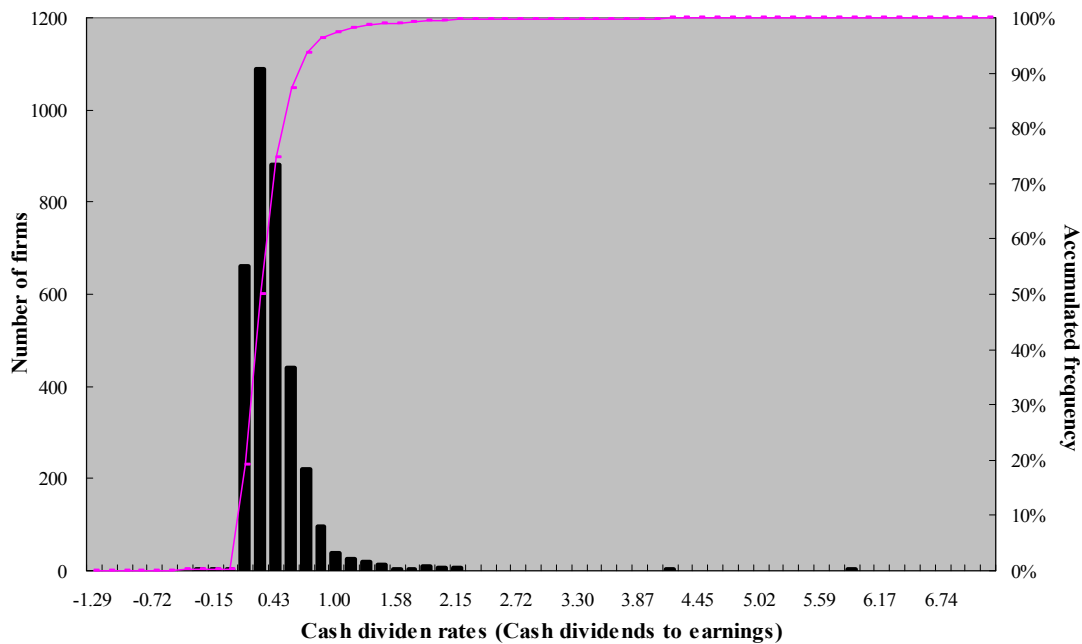


Figure 3. The distribution of listed firms' DPE ratios from 2005 to 2009

Figure 4 shows the distribution of listed firms SPS ratios (stock dividends per share ratios) during the sample period. This shows 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 of listed firms that have paid stock dividends are 0.51 and 0.50, respectively.

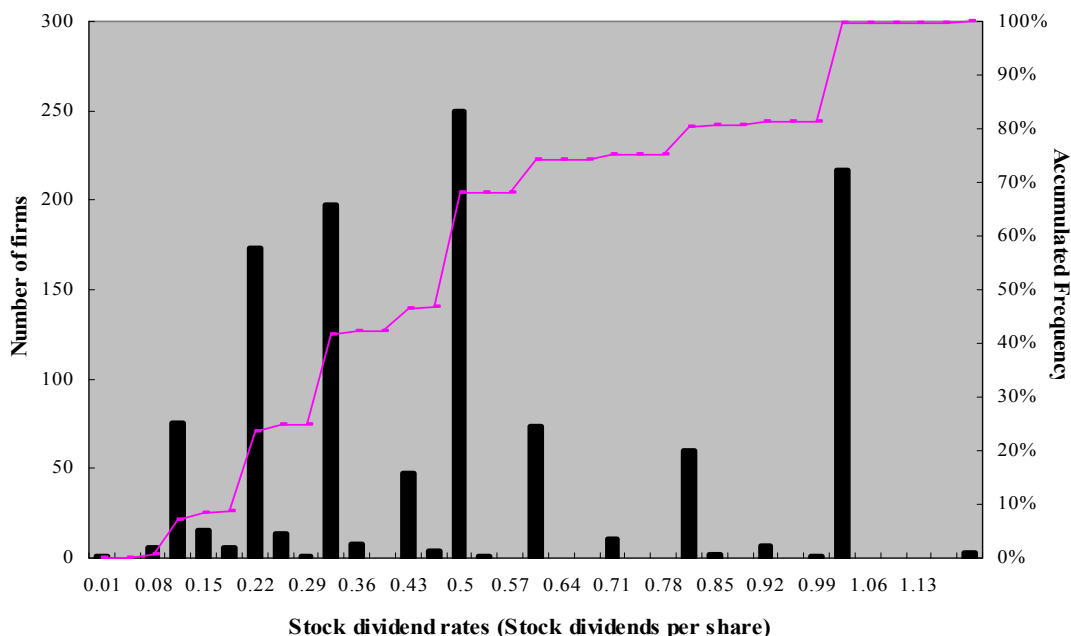


Figure 4. The distribution of listed firms' SPS ratios from 2005 to 2009

Table 2 provides the descriptive statistics of the variables used in regression analyses. 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 (Note 10). 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 net operating cash flow and earnings are 5.5% and 1.6% of its total assets, respectively.

Table 2. Descriptive statistics

Variable	N	Mean	STD	Min	Max
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	1.8
BETA	6964	1.062	0.391	-6.725	14.097
CAR	6964	-0.127	0.472	-1.75	10.662
SALES	6964	20.79	1.578	7.125	28.004
TOP	6964	0.369	0.15	0.1	0.8
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
LEVERAGE	6964	0.507	0.19	0	0.999
CA	6964	0.055	0.096	-1.674	1.069
ROA	6964	0.016	0.24	-8.753	6.109
Market-to-book	6964	1.873	2.79	0.056	63.942
SIZE	6964	9.303	0.524	6.756	11.938

Table 2 reports the descriptive statistics of the variables used in the regressions. The definition of variables can be found in the appendix.

Panel A of Table 3 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 mutual funds holdings. Panel B of Table 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 larger mutual fund holdings than firms that do not pay and the result is consistent in each year. Some firms that do not pay cash dividends may pay stock dividends in the meanwhile, and vice versa. As such, we 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 3. We 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 3. The un-tabulated results show that the differences are still statistically significant.

Table 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)
	ALL	3569	0.71%	0	3395	0.17%	0	0.54%*** <.0001
2005-2009	L	3569	0.49%	0	3395	0.11%	0	0.38%*** <.0001
	T	3569	0.22%	0	3395	0.06%	0	0.16%*** <.0001
	ALL	710	0.32%	0	596	0.10%	0	0.22%*** <.0001
2005	L	710	0.29%	0	596	0.10%	0	0.19%*** <.0001
	T	710	0.02%	0	596	0.01%	0	0.01%*** <.0001
	ALL	604	0.42%	0	693	0.10%	0	0.32%*** <.0001
2006	L	604	0.27%	0	693	0.07%	0	0.20%*** <.0001
	T	604	0.15%	0	693	0.03%	0	0.12%*** <.0001
	ALL	682	0.65%	0	680	0.14%	0	0.50%*** <.0001
2007	L	682	0.37%	0	680	0.07%	0	0.30%*** <.0001
	T	682	0.27%	0	680	0.07%	0	0.20%*** <.0001
	ALL	766	0.85%	0	714	0.25%	0	0.60%*** <.0001
2008	L	766	0.64%	0	714	0.19%	0	0.45%*** <.0001
	T	766	0.21%	0	714	0.07%	0	0.14%*** <.0001
	ALL	807	1.19%	0	712	0.29%	0	0.90%*** <.0001
2009	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 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 (<i>p-value</i>)
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 A/B shows the differences of mutual fund ownership between listed firms that do and do not pay cash/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 4 reports the differences in mutual fund holdings between firms that pay low and high cash or stock dividends. Panel A shows that firms that pay low cash dividends have lower mutual fund holdings than firms that pay high cash dividends. However, Panel B indicates firms that pay low stock dividends only have lower transient mutual fund holdings than firms that pay high stock dividends.

Table 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

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

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

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

Panel A/B shows the differences of mutual fund ownership between listed firms that pay low and high cash/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 listed firms' total tradable shares.

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

Table 5 reports the results on the preferences of mutual funds for cash or stock dividend-paying firms (Note 11). Dependent variables are the total or long-term or transient mutual funds' ownership measured by the number of listed firms' tradable shares. As shown in Table 5 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 (Note 12). 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 regression results year by year as a robustness check. Mutual funds' preference for firms that pay cash dividends is significant in all five years, except 2006. Mutual funds' preference for firms that 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 cash dividends is much stronger than that for stock dividends.

Table 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***
<i>P-value</i>	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
CD	0.007***		0.005***		0.002***	
<i>P-value</i>	<.0001		<.0001		<.0001	
DPA		0.323***		0.241***		0.081***
<i>P-value</i>		<.0001		<.0001		<.0001
BETA	-0.017***	-0.015***	-0.014***	-0.013***	-0.003***	-0.003***
<i>P-value</i>	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
CAR	0.005***	0.005***	0.003***	0.003***	0.002***	0.002***
<i>P-value</i>	0.002	0.002	0.027	0.025	<.0001	<.0001
Market-to-book	0.009***	0.008***	0.006***	0.006***	0.003***	0.003***
<i>P-value</i>	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
SALES	0.008***	0.008***	0.005***	0.005***	0.002***	0.002***
<i>P-value</i>	<.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 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***
<i>P-value</i>	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
SD	0.007***		0.006***		0.001***	
<i>P-value</i>	<.0001		<.0001		0.005	
SPS		0.011***		0.008***		0.003***
<i>P-value</i>		<.0001		0.001		0.004
BETA	-0.017***	-0.017***	-0.014***	-0.014***	-0.003***	-0.003***
<i>P-value</i>	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
CAR	0.005***	0.005***	0.003***	0.003***	0.002***	0.002***
<i>P-value</i>	0.003	0.003	0.032	0.034	<.0001	<.0001
Market-to-book	0.009***	0.009***	0.007***	0.007***	0.003***	0.003***
<i>P-value</i>	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
SALES	0.008***	0.008***	0.006***	0.006***	0.002***	0.002***
<i>P-value</i>	<.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 C: Regressions year by year

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

Panel A/B shows the results of the regressions that test the preferences of mutual funds for cash/stock dividend-paying stocks. Panel C reports the results of year by year regressions. Due to size limitation, we only report the results on the four major independent variables (CD, DPA, SD and SPS) in Panel C. The definition of variables can be found in the appendix. 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.

Table 6 presents the effect of changes in cash or 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 and ΔSPS are not statistically significant (Note 13). This suggests that the changes in cash or stock dividend rates do not influence mutual fund holdings. Following Grinstein and Michaely (2005)'s analysis and in conjunction with the results reported in Table 5 Panel C, we believe that, although mutual funds prefer to hold the shares of dividend-paying firms, increased cash or stock dividends do not necessarily attract more mutual funds' holdings and therefore mutual funds do not show strong preferences for firms that pay high cash or high stock dividends. Therefore, our results can only partially support *H1* and *H2*. The hypotheses on larger cash or stock dividends attract more mutual fund investments are not supported by the results reported in Table 6 (please see the coefficients of ΔCPS and ΔSPS).

Table 6. The effect of the changes in dividend rates on the changes in mutual funds' holdings (based on listed firms' tradable shares)

	$\Delta ALLT$		ΔLT		ΔTT	
Regression	1	2	3	4	5	6
Intercept	-0.006	-0.008	-0.003	-0.001	-0.004	-0.004
<i>P-value</i>	0.432	0.311	0.674	0.859	0.333	0.282
ΔCPS	-0.011*		-0.009*		-0.005*	
<i>P-value</i>	0.077		0.096		0.093	
ΔSPS		0.002		0.003*		-0.001
<i>P-value</i>		0.285		0.079		0.509
BETA	0.001	0.001	0.001	0.002	-0.002**	-0.001
<i>P-value</i>	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
<i>P-value</i>	0.013	0.015	0.001	0.001	0.915	0.888
Market-to-book	0.001	0.001	0.001	0.001	0.001	0.001
<i>P-value</i>	0.734	0.756	0.688	0.975	0.928	0.820
SALES	0.001	0.001	0.001	0.001	0.001	0.001
<i>P-value</i>	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 rate changes on mutual fund holding changes. We 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. The definition of other variables can be found in the appendix.

*, **, *** represent the statistical significance at the 0.1, 0.05, and 0.01 levels, respectively

Table 7 reports the results of the OLS regressions that test the impact of mutual fund holdings on cash or stock dividend rates (Note 14). All coefficients of mutual fund holdings are significantly positive at the 1% level, indicating that listed firms tend to pay more cash or stock dividends when mutual fund holdings are high. As for control variables, the results show that high cash or stock dividend per share is significantly related to high managerial ownership, low debt ratio, high profitability and large firm size. Moreover, high cash dividend per share is also significantly associated to high largest shareholder's ownership and high cash flow, and high stock dividend per share is related to private ownership rather than state ownership. However, due to the endogeneity issue arising from mutual funds' preferences, we cannot draw any conclusions on the effects of mutual funds on cash or stock

dividend rates so far.

Table 7. 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***
<i>P-value</i>	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
ALLT	0.663***			0.231***		
<i>P-value</i>	<.0001			0.002		
LT		0.740***			0.223***	
<i>P-value</i>		<.0001			0.010	
TT			1.583***			0.754***
<i>P-value</i>			<.0001			0.006
TOP	0.094***	0.096***	0.093***	-0.004	-0.004	-0.006
<i>P-value</i>	<.0001	<.0001	<.0001	0.822	0.853	0.776
MGN	0.174***	0.175***	0.176***	0.469***	0.470***	0.470***
<i>P-value</i>	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
CTR	0.004	0.004	0.003	0.058***	0.058***	0.057***
<i>P-value</i>	0.237	0.204	0.349	<.0001	<.0001	<.0001
UD	0.007	0.007	0.008	-0.013	-0.013	-0.013
<i>P-value</i>	0.165	0.194	0.122	0.130	0.126	0.143
LEVERAGE	-0.092***	-0.093***	-0.101***	-0.045***	-0.045***	-0.047***
<i>P-value</i>	<.0001	<.0001	<.0001	0.002	0.001	0.001
CA	0.187***	0.188***	0.203***	-0.072*	-0.071*	-0.067*
<i>P-value</i>	<.0001	<.0001	<.0001	0.058	0.063	0.075
ROA	0.205***	0.209***	0.214***	0.205***	0.207***	0.206***
<i>P-value</i>	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
Market-to-book	0.002	0.003	0.003	0.005	0.005*	0.005
<i>P-value</i>	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***
<i>P-value</i>	<.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 definition of variables can be found in the appendix. 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.

Table 8 presents the effect of the changes in mutual fund holdings on changes in cash or stock dividend rates. The total number of observations is reduced from 6964 to 5856. As reported in Table 8, there is a positive and significant relation between mutual fund holdings and cash dividends as a whole. Although long-term and short-term mutual funds may increase cash dividend payouts for different reasons, the results show that firms increase their cash dividend ratio when either long-term or short-term mutual fund holdings increase. As such, *H3a* and *H3b* are

supported by the results reported in Table 8 (please see the coefficients of ΔLT and ΔTT in regressions 2 and 3).

On the other hand, 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 variable. Although long-term mutual funds prefer to invest in stock dividend paying firms, they might not necessarily increase stock dividend payout ratios due to the concern of deterioration of some financial ratios following the high stock dividend payouts. Therefore, the empirical evidence (the coefficient of ΔLT in regression 5 in Table 8) supports *H4a*. Firms only increase their stock dividend rates after transient mutual fund holdings increase as we expected, as transient mutual funds could encourage listed firms to increase stock dividend payouts to take advantage of the positive abnormal returns around stock dividend announcements. As such, the empirical evidence (the coefficient of ΔTT in regression 6 in Table 8) also supports *H4b*. Given that the dependent variables are the changes in cash or stock dividend rates, most coefficients of control variables are not statistically significant.

Table 8. 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
<i>P-value</i>	0.786	0.910	0.753	0.304	0.335	0.294
$\Delta ALLT$	0.288***			0.289**		
<i>P-value</i>	<.0001			0.020		
ΔLT		0.245***			0.231	
<i>P-value</i>		0.001			0.117	
ΔTT			0.644***			0.702**
<i>P-value</i>			0.001			0.014
TOP	-0.003	-0.003	-0.005	0.026	0.026	0.024
<i>P-value</i>	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***
<i>P-value</i>	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
<i>P-value</i>	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
<i>P-value</i>	0.248	0.257	0.263	0.692	0.698	0.703
LEVERAGE	0.002	0.002	0.003	0.013	0.013	0.014
<i>P-value</i>	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
<i>P-value</i>	0.001	0.001	0.001	0.787	0.786	0.764
ROA	0.052**	0.055***	0.055***	0.086**	0.088**	0.088**
<i>P-value</i>	0.011	0.009	0.006	0.029	0.025	0.023
Market-to-book	0.001	0.001	0.001	-0.008*	-0.007*	-0.008*
<i>P-value</i>	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**
<i>P-value</i>	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 holding changes on cash and stock dividend rate changes. 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. $\Delta\text{ALLT}/\Delta\text{LT}/\Delta\text{TT}$ is the changes in total/long-term/short-term mutual fund holdings between year t and $t-1$, measured by listed firms' tradable shares. The other explanatory variables used in regressions are the same as those in Table 7.

*, **, *** represent the statistical significance at the 0.1, 0.05, and 0.01 levels, respectively.

4. Robustness tests

In robustness test, we first change the mutual funds ownership measure in listed firms from using the number of total tradable shares to using the number of total shares (including both tradable and non-tradable shares), and repeat the regressions of Equations 7 and 8. The only difference is that the main explanatory variables are now $(\text{ALL}_{i,t} - \text{ALL}_{i,t-1})$, $(\text{L}_{i,t} - \text{L}_{i,t-1})$ and $(\text{T}_{i,t} - \text{T}_{i,t-1})$. $\text{ALL}_{i,t}$, $\text{L}_{i,t}$, and $\text{T}_{i,t}$ are total, long-term and short-term mutual funds' ownership measured by the number of listed firms' total shares, respectively. The results (Note 15) remain unchanged.

Second, as mentioned earlier, there are some listed firms that have paid very high cash dividends during our sample period. We therefore 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.

Finally, we also do the following robustness tests: 1) we include both firm and year fixed effect in our regressions to control for the individual effects; and 2) we use only one major independent variable in each regression to ensure that our empirical results are not affected by the potential endogeneity given high number of variables used. The empirical results remain unchanged.

5. Conclusion

This paper investigates the relationship between mutual funds' holdings and dividend pay-outs in China. The empirical evidence suggests that mutual funds (including both short-term and long-term mutual funds) prefer to hold the shares of listed firms that pay cash or stock dividends, but they are not particularly attracted to high cash or high stock dividends. We also find that mutual funds prefer cash dividends to stock dividends. In the study of mutual funds' impact on dividend policies, evidence shows that both short-term and long-term funds encourage listed firms to pay higher cash dividends through their shareholdings. However, only short-term mutual funds encourage listed firms to distribute higher stock dividends to pursue the high stock returns around stock dividend announcements, while the long-term mutual funds do not.

One of the main aims of the Chinese government, when developing the mutual fund industry, is to improve corporate governance of Chinese listed firms and help mitigate the free-rider problems of individual investors by pooling diffused minority shareholders. Dividend payments (especially cash dividend payments) are regarded as a tool to reduce the agency conflicts between large shareholders and minority shareholders or managers (e.g., Jensen, 1986; Shleifer and Vishny, 1986). This paper sheds a light on how institutional investors help mitigate the agency problems of listed firms in China. Our evidence shows that both long-term and short-term mutual funds can increase cash dividend payouts, which has a positive impact on firm corporate governance overall.

Finally, the findings of this paper confirm the importance of distinguishing institutional ownership when investigating the relationship between institutional investors and major corporate activities, since long-term focused and short-term focused mutual funds have different goals and behave in different ways when trading or engaging in corporate events.

References

- Allen, F., Bernardo, A.E. & Welch, I. (2000). A theory of dividends based on tax clienteles. *The Journal of Finance*, 55(6), 2499-2536. <http://dx.doi.org/10.1111/0022-1082.00298>
- Allen, F., Qian, J. & Qian, M.J. (2005). Law, finance and economic growth in China. *Journal of Financial Economics*, 77, 57-116. <http://dx.doi.org/10.1016/j.jfineco.2004.06.010>
- Anderson, H.D., Chi, J., Ing-aram, C. & Liang, L. (2011). Stock dividend puzzles in China. *Journal of the Asia Pacific Economy*, 16(3), 422-447. <http://dx.doi.org/10.1080/13547860.2011.589630>
- Baker, H.K. & Phillips, A.L. (1993). Why companies issue stock dividends. *Financial Practice and Education*, 3(2), 29-37.
- Baker, H.K. & Gallagher, P.L. (1980). Management's view of stock splits. *Financial Management*, 9 (summer), 73-77.
- Bechmann, K.L. & Raaballe, J. (2007). The differences between stock splits and stock dividends: Evidence on the

- retained earnings hypothesis. *Journal of business finance and accounting*, 34(3-4), 574–604. <http://dx.doi.org/10.1111/j.1468-5957.2007.02041.x>
- Bushee, B.J., (2001). Do institutional investors prefer near-term earnings over long-run value? *Contemporary Accounting Research*, 18(2), 207-246. <http://dx.doi.org/10.1506/J4GU-BHWH-8HME-LE0X>
- Chen, G.M., Firth, M. & Gao, N. (2002). The information content of concurrently announced earnings, cash dividends, and stock dividends: an investigation of the Chinese stock market. *Journal of International Financial Management & Accounting*, 13(2), 101-124. <http://dx.doi.org/10.1111/1467-646X.00080>
- Chen, D.H., Jian, M. & Xu, M. (2009). Dividends for tunnelling in a regulated economy: The case of China. *Pacific-Basin Finance Journal*, 17(2), 209–223. <http://dx.doi.org/10.1016/j.pacfin.2008.05.002>
- Cheng, L.T.W., Fung, H.G. & Leung, T.Y. (2009). Dividend preference of tradable-share and non-tradable-share holders in Mainland China. *Accounting & Finance*, 49(2), 291-316. <http://dx.doi.org/10.1111/j.1467-629X.2008.00284.x>
- Easterbrook, F.H. (1984). Two agency cost explanations of dividends. *American Economic Review*, 74, 650–659.
- Eun, C.S. & Huang, W. (2007). Asset pricing in China's domestic stock markets: is there logic? *Pacific-Basin Finance Journal*, 15, 452–480. <http://dx.doi.org/10.1016/j.pacfin.2006.11.002>
- Fama, E.F. & French, K.R. (2001). Disappearing Dividends: Changing Firm Characteristics or Lower Propensity to Pay. *Journal of Financial Economics*, 60, 3-43. [http://dx.doi.org/10.1016/S0304-405X\(01\)00038-1](http://dx.doi.org/10.1016/S0304-405X(01)00038-1)
- Ferreira, M.A., Massa, M. & Matos, P. (2010). Dividend clienteles around the world: Evidence from institutional holdings. Marshall School of Business Working Paper No. FBE 35-09. Available at SSRN: <http://ssrn.com/abstract=1447573>
- Firth, M., Lin, C. & Zou, H. (2010). Friend or Foe? The role of state and mutual fund ownership in the split share structure reform in China. *Journal of Financial and Quantitative Analysis*, 45(3), 685-706. <http://dx.doi.org/10.1017/S0022109010000190>
- Fu, Y. & Tan, S.T. (2008). Institutional alignment and inside trading in share right merger reform. *Journal of Financial Research*, 3, 88-102. (Chinese Version)
- Gillan, S.L. & Starks, L.T. (2000). Corporate governance proposals and shareholder activism: the role of institutional investors. *Journal of Financial Economics*, 57, 275-305. [http://dx.doi.org/10.1016/S0304-405X\(00\)00058-1](http://dx.doi.org/10.1016/S0304-405X(00)00058-1)
- Grinblatt, M.S., Masulis, R.W. & Titman, S. (1984). The valuation effects of stock splits and stock dividends. *Journal of Financial Economics*, 13(4), 461–490. [http://dx.doi.org/10.1016/0304-405X\(84\)90011-4](http://dx.doi.org/10.1016/0304-405X(84)90011-4)
- Grinstein, Y. & Michaely, R. (2005). Institutional holdings and payout policy. *Journal of Finance*, 60(3), 1389-142. <http://dx.doi.org/10.1111/j.1540-6261.2005.00765.x>
- Guo, W.Y. & Ni, J. (2008). Institutional ownership and firms' dividend policy. *Corporate Ownership and Control*, 5(2), 128-136.
- Hankins, K.W., Flannery, M.J. & Nimalendran, M. (2008). The effect of fiduciary standards on institutions' preference for dividend-paying stocks. *Financial Management*, 37(4), 647–671. <http://dx.doi.org/10.1111/j.1755-053X.2008.00029.x>
- Hartzell, J.C. & Starks, L.T. (2003). Institutional Investors and Executive Compensation. *Journal of Finance*, 58(6), 2351–2374. <http://dx.doi.org/10.1046/j.1540-6261.2003.00608.x>
- Huang, J.J., Shen, Y. & Sun, Q. (2011). Nonnegotiable shares, controlling shareholders, and dividend payments in China. *Journal of Corporate Finance*, 17(1), 122-133. <http://dx.doi.org/10.1016/j.jcorpfin.2010.09.007>
- Jensen, M.C. (1986). Agency cost of free cash flow, corporate finance and takeovers. *American Economic Review*, 76(2), 323–329. <http://dx.doi.org/10.2139/ssrn.99580>
- John, K. & Williams, J. (1985). Dividends, dilution, and taxes: a signalling equilibrium. *Journal of Finance* 40(4), 1053–1070. <http://dx.doi.org/10.1111/j.1540-6261.1985.tb02363.x>
- Johnson, S., La Porta, R., Lopez-De-Silanes, F. & Shleifer, A. (2000). Tunneling. *American Economic Review*, 90(2), 22–27. <http://dx.doi.org/10.2139/ssrn.204868>
- Kalay, A. (1982). Stockholder-bondholder conflict and dividend constraints. *Journal of Financial Economics*, 10(2), 211–233. [http://dx.doi.org/10.1016/0304-405X\(82\)90014-9](http://dx.doi.org/10.1016/0304-405X(82)90014-9)

- Kalay, A. & Loewenstein, U. (1985). Predictable events and excess returns: the case of dividend announcements. *Journal of Financial Economics*, 14, 423-449. [http://dx.doi.org/10.1016/0304-405X\(85\)90007-8](http://dx.doi.org/10.1016/0304-405X(85)90007-8)
- Koh, P. (2007). Institutional investor type, earnings management and benchmark beaters. *Journal of Accounting and Public Policy*, 26(3), 267-299. <http://dx.doi.org/10.1016/j.jaccpubpol.2006.10.001>
- La Porta, R., Lopez-De-Silanes, F., Shleifer, A. & Vishny, R.W. (2000). Agency problems and dividend policies around the World. *Journal of Finance*, 55(1), 1-33. <http://dx.doi.org/10.1111/0022-1082.00199>
- Lakonishok, J. & Lev, B. (1987). Stock splits and stock dividends: why, who, and when. *Journal of Finance*, 42(4), 913-932. <http://dx.doi.org/10.1111/j.1540-6261.1987.tb03919.x>
- Leary, M.T. & Michaely, R. (2011). Determinants of dividend smoothing: empirical evidence. *Review of Financial Studies*, 24(10), 3197-3249. <http://dx.doi.org/10.1093/rfs/hhr072>
- Liu, Q. & Lu, Z. (2007). Corporate governance and earnings management in the Chinese listed companies: A tunneling perspective. *Journal of Corporate Finance*, 13(5), 881-906. <http://dx.doi.org/10.1016/j.jcorpfin.2007.07.003>
- Miller, M.H. & Modigliani, F. (1961). Dividend policy, growth and the valuation of shares. *Journal of Business*, 34(4), 411-433. <http://dx.doi.org/10.1086/294442>
- Miller, M.H. & Rock, K. (1985). Dividend policy under asymmetric information. *Journal of Finance*, 40(4), 1031-1051. <http://dx.doi.org/10.1111/j.1540-6261.1985.tb02362.x>
- Nissim, D. & Ziv, A. (2001). Dividend changes and future profitability. *Journal of Finance*, 56(6), 2111-2133. <http://dx.doi.org/10.1111/0022-1082.00400>
- Porter, M.E. (1992). Capital choices: changing the way America invests in industry. *Journal of Applied Corporate Finance*, 5(2), 4-16. <http://dx.doi.org/10.1111/j.1745-6622.1992.tb00485.x>
- Rankine, G. & Stice, E.K. (1997). The market reaction to the choice of accounting method for stock splits and large stock dividends. *Journal of Financial and Quantitative Analysis*, 32(2), 161-182. <http://dx.doi.org/10.2307/2331171>
- Shleifer, A. & Vishny, R.W. (1986). Large stockholders and corporate control. *Journal of Political Economy*, 95, 461-488. <http://dx.doi.org/10.1086/261385>
- Shleifer, A. & Vishny, R.W. (1997). A survey of corporate governance. *Journal of Finance*, 52(2), 737-783. <http://dx.doi.org/10.1111/j.1540-6261.1997.tb04820.x>
- Short, H., Zhang, H. & Keasey, K. (2002). The link between dividend policy and institutional ownership. *Journal of Corporate Finance*, 8(2), 105-122. [http://dx.doi.org/10.1016/S0929-1199\(01\)00030-X](http://dx.doi.org/10.1016/S0929-1199(01)00030-X)
- Wei, J.G., Zhang, W.G. & Xiao, J.Z.Z. (2004). Dividend payment and ownership structure in China. *Advances in Financial Economics* 9, 187-219. [http://dx.doi.org/10.1016/S1569-3732\(04\)09008-5#sthash.qeIpVyoJ.dpuf](http://dx.doi.org/10.1016/S1569-3732(04)09008-5#sthash.qeIpVyoJ.dpuf)
- Wei, J.G. & Xiao, J.Z.Z. (2009). Equity ownership segregation, shareholder preferences, and dividend policy in China. *The British Accounting Review*, 41(3), 169-183. <http://dx.doi.org/10.1016/j.bar.2009.07.001>
- Yang, J., Chi, J. & Young, M. (2014). Mutual funds' investment strategies and their preferences: Evidence from China. *Chinese Economy*, 47(1), 5-37. <http://dx.doi.org/10.2753/CES1097-1475470101>
- Zou, H., Wong, S., Shum, C., Xiong, J. & Yan, J. (2008). Controlling-minority shareholder incentive conflicts and directors' and officers' liability insurance: Evidence from China. *Journal of Banking and Finance*, 32(12), 2636-264. <http://dx.doi.org/10.1016/j.jbankfin.2008.05.015>

Notes

Note 1. In the Chinese stock markets, there are tradable and non-tradable shares. Non-tradable shares are mainly held by the state and legal persons and cannot be traded freely on the two stock exchanges in China. Tradable shares are held by individual shareholders and institutional shareholders such as mutual funds and pension funds, and can be traded on the China's two exchanges. After the non-tradable share reform in 2005, the proportion of non-tradable shares has declined and was approximately 26% at the end of 2012.

Note 2. Mutual funds' preferences for both cash and stock dividends do not conflict. In countries with poor corporate governance, investors seem to take whatever dividends they can get, no matter whether they are cash or stock dividends. (La Porta et al., 2000).

Note 3. For the details of this methodology, please see Bushee (2001) and Yang et al., (2014).

Note 4. There are four variables under factor 1. 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).

Note 5. There are two variables under factor 2. STAB1 = Percentage of the institution's total holdings held continuously for one year (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).

Note 6. There are two variables under factor 3. 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 scaled by its net value of assets.

Note 7. Although dedicated mutual funds' factor 2 scores are negative and lower than those of quasi-index funds, they are higher than those of transient mutual funds. This suggests that although dedicated mutual funds' do not hold the shares of listed firms as long as quasi-index funds, they do hold them much longer than transient mutual funds.

Note 8. Earnings are measured after tax and interest, but before extraordinary items.

Note 9. 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%.

Note 10. Since the sample includes all listed firms, some of which do not have mutual funds holdings, the average mutual funds holdings are very low in Table 2.

Note 11. The correlations between all pairs of independent variables are below 0.5. As such, the correlations are not high enough to cause multicollinearity in the regression analysis.

Note 12. To ensure the result is not driven by the scaling factor of dividends (the book value of total assets), we also repeat the regressions, using CPS as the independent variable. The un-tabulated results show that the coefficient of CPS is still significantly positive at the 1% level.

Note 13. Given that the sample size is above 5000, we mainly use the 1% and 5% confidence level to determine the significance of coefficients in this test.

Note 14. The correlations between all pairs of explanatory variables are below 0.5, and hence are not high enough to cause multicollinearity in the regression analysis.

Note 15. We do not provide a table for this result but they are available on request.

Appendix: Definitions of variables

Variable	Definition
DPA	The ratio of total amount of cash dividends to the book value of assets
CPS	Cash dividends per share
SPS	Stock dividends per share
ALLT	Total mutual funds' ownership in a listed firm measured by the number of listed firm's tradable shares
TT	Transient mutual funds' ownership measured by the number tradable shares
LT	Long-term focused (including dedicated and quasi-index) mutual funds' ownership measured by the number of tradable shares
ALL	Total mutual funds' ownership in a listed firm measured by the listed firm's total number of shares
L	Long-term focused (including dedicated and quasi-index) mutual funds' ownership measured by the listed firm's total number of shares
T	Transient mutual funds' ownership measured by the listed firm's total number of shares
TOP	The largest shareholder's ownership
BETA	The market beta coefficient
CAR	The past 12-month cumulative market adjusted abnormal returns
Market-to-book	Market capitalization over book value of total assets
MGN	Managerial ownership
CTR	A dummy variable, which takes the value of one if a firm is ultimately controlled by a private, or foreign entity, and is zero otherwise (e.g. the government or state-owned enterprises)
UD	The ratio of the number of directors not receiving any payment from the firm to the total number of directors
LEVERAGE	Debt to equity ratio
CA	Net operating cash flow to total assets ratio
ROA	Return on total assets
SALES	The log value of sales revenue
SIZE	The log value of total assets