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The Announcement Effect of Cash Dividend Changes on Share Prices:

An Empirical Analysis of China

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Last Revised: November 12, 2007

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ABSTRACT

This paper adopts the sample of cash dividend changes from all listed A-share firms in China over the period 2000 to 2004 and applies an event study in order to investigate the announcement effect of cash dividend changes and to examine simultaneously if the dividend signaling hypothesis holds in China's stock markets. Empirical results indicate that the announcement of cash dividend changes has a positive influence on share prices, but such results only partly support the dividend signaling hypothesis. We also find that there is no great dissimilarity between the announcement effects of cash dividend changes for different stock markets in China. However, the announcement effect of cash dividend changes for different sample periods exhibits distinct differences which may have a close connection with the promulgation and execution of two administrative rules. The cross sectional analysis also shows that both cash dividend yield and the ratio of non-floating shares have explanatory power on the announcement effect of cash dividend changes.

The Announcement Effect of Cash Dividend Changes on Share Prices: An Empirical Analysis of China

1. Introduction

Dividend policy has been a puzzle in corporate finance for several decades. Among numerous research subjects about dividend policy, the most popular one is the relationship between the dividend level and the share price of a firm. According to the dividend discount model of Gordon (1959), it is feasible to derive that the dividend payment augmentation should be accompanied by the value increase in a firm. Miller and Modigliani (1961), however, point out that the value of a firm is not influenced by current and future dividend decisions, which was well recognized as the dividend irrelevance theory. Later on, several empirical studies were conducted, and the results were inconsistent nevertheless. Several hypotheses were developed sequentially to explain the relation between a firm's dividend policy and the price of its shares. Among those hypotheses, tax effect (tax clientele effect), information asymmetric/dividend signaling, and agency problems are the most famous ones. This paper focuses on the empirical analysis of the dividend signaling hypothesis and investigates the announcement effect of cash dividend changes. According to the dividend signaling hypothesis, cash dividends function as a good signaling vehicle of a firm's future cash flow, thus implying that unanticipated dividend changes should be accompanied by share price changes in the same direction. This paper tries to explore if this assumption holds in China.

This empirical analysis adopts the sample of cash dividend changes from China-listed A-share stocks. China is a good dividend policy research target at least for the following reasons. First, most of the dividend policy research studies are based on the samples of free economic markets, such as the United States; fewer

studies are conducted with a socialistic market sample. Different economic bodies may probably have dissimilar characteristics, and so it is alluring to have dividend policy studies made in a communistic country, such as China. Second, dividend policy is hardly related to compulsive cash dividend doctrines. Therefore, it will possibly be a breakthrough to perform dividend policy studies on the listed A-share stocks of China. Only just a few years ago did China set compulsive enactments having a great influence on the cash dividend policy discretion of listed firms. Next, compared to the capital markets of developed countries, China's markets are more fledgling in nature. Two stock exchanges, the Shanghai Stock Exchange and the Shenzhen Stock Exchange, initiated their trading in December 1990 and April 1991, respectively. Both of these two stock exchanges have a much shorter operation history than the major stock exchanges of developed countries.

Stock investors of China are less educated than those in developed countries. According to the 2005 Fact Book published by the Shanghai Stock Exchange, the percentage of investors with a bachelor diploma or above was only 13.03%. Because of the short trading history and the lower education level, Chinese stock investors may show virtually different attitudes and behaviors toward risk-taking, investment, and dividend policy. Lastly, China is showing a greater and greater economic influence in the integrating world nowadays. The economic growth rate, current account surplus, and stock market performance of China all show strong growth, and as such it is worth it to learn more about China's stock markets and the investor behaviors through dividend policy research studies.

According to the results of empirical analysis, for investors, the announcement of a cash dividend increase is an optimistic signal about a firm's future operation and cash flow, and thus a cash dividend increase is followed by positive abnormal returns. On the contrary, the announcement of a cash dividend decrease is a pessimistic signal,

and so a cash dividend decrease is followed by negative abnormal returns. Therefore, the dividend signaling hypothesis is well supported by these empirical studies, and investors do adjust their expectation on a firm's cash flow after cash dividend changes. In this paper, we wonder if the stock markets of China display the same feature and if any announcement effect of cash dividend changes exists.

The main objective of this paper is to investigate the announcement effect of cash dividend changes on share prices with a cash dividend change sample of A-share listed stocks in the Shanghai Stock Exchange and the Shenzhen Stock Exchange. Although we can obtain lots of research results from developed countries, the capital market of China exhibits different investor structures, regulations, and shareholder structures, etc. Thus, the announcement effect of cash dividend changes in China is truly an important research issue. The analysis results of this paper not only can provide the announcement effect of cash dividend changes from an emerging country, but can also serve as a good decision reference for investors and China's government.

The reminder of the paper is organized as follows. Section 2 introduces the dividend policy of listed firms in China. Section 3 reviews the theoretical issues concerning dividend policy and value of a firm. Section 4 describes data sources and research methodology. Section 5 presents the empirical findings. Section 6 summarizes the results of this study and offers some concluding thoughts.

2. Dividend Policy of Listed Firms in China

There are three kinds of dividend policy for listed firms in China to choose. The first one is "the bonus share" (hereinafter referred to as the "BS") that is generally known as stock dividends. In fact, the BS simply transfers a portion of retained earnings to contributed capital. The second one is "the transference of additional paid-in capital to contributed capital" (hereinafter referred to as the "TA").

As its name implies, the TA simply transfers a portion of additional paid-in capital to contributed capital.   The last one is cash dividends.   Both the BS and the TA simply affect the relative components of equity.   On the contrary, cash dividends have a direct and practical influence on a firm's long-run operation than the BS and the TA do.

Fama and French (2001) point out that, regardless of the earning level, the proportion of all listed firms in the U.S. that paid cash dividends has fallen dramatically from 80% to 20% during the period of the 1960s to 1990s.   Publicly traded firms in China echoed this "dividend-disappearing trend" mentioned in Fama and French (2001) over the 1990s.   The ratio of cash dividend paying firms fell from 97.3% in 1993 to 36.8% in 1999.   Nevertheless, the proportion of cash dividend paying firms rebounded greatly in 2000.

It would be intuitional to attribute this dramatic change to the announcement of two administrative rules about new share offerings on March 28 and May 11, 2001. First, "Administration Rules for New Shares Offering of the Listed Firms" were declared on March 28, 2001.   The rules require the lead underwriter to mark out in the underwriting investigation reports any firm that did not have any cash dividend in the past three years and any firm's board of directors who did not reasonably explain why they do not pay cash dividends.   Afterward, on May 11, 2001, "The Public Offering Review Committee of China Securities Regulatory Commission Concerning Guidance on New Shares Offering Check and Commission of Listed Firms" was declared and executed.   It demands the Public Offering Review Committee to concentrate on the circumstances of a firm's cash dividend payment in the past three years, and to decide independently if such a circumstance will affect the new share offering of a listed firm when the committee is checking and admitting the new share offering application from this listed firm.

Although both rules do not explicitly forbid those firms that do not pay cash dividends from offering new shares, its rational is for managers in publicly traded firms to figure out that these two rules are set up to implicitly require listed firms to pay cash back to shareholders so as to strengthen the shareholder protection. The Government hopes the listed firms retain less cash flow and to return the cash to their shareholders. Thus, managers in publicly traded firms should strike a balance between an absence of financial flexibility in raising funds by issuing new shares and a shortage of funds for further growth resulting from distributing cash out. Once the firms pay cash dividends to obtain long-run financial flexibility for issuing new shares, a short-run financial resource (cash dividend payment) is the sacrifice. These two rules are not really adequate, because the firms that pay cash dividends to get the chance of offering new shares to raise funds may possibly be the ones deficient in money. The long-term prospect of a firm may possibly be harmed if managers are obedient to these two regulatory rules. However, as the proportion of the firms paying cash dividends has sky-rocketed, most managers have chosen to resign themselves to these two rules.

Listed firms in China have a unique share structure. The share structure of a listed firm in China is divided into two parts: one is floating shares, and the other is non-floating shares. This separation of share structure is known as "the Split Share Structure". The Split Share Structure has several features. First, non-floating shares are non-tradable in capital markets, but floating shares are tradable. In other words, the incomes of non-floating shareholders come only from cash dividends, but floating shareholders can profit both through capital gains and cash dividends. Next, the non-floating shares are usually held by issuers of firms, the institutional investors, and the Chinese government, but the floating shares are held by the public.

The proportion of non-floating shares is much higher than that of floating

shares.   In fact, according to the share structure data from the website of China Securities Regulatory Commission, the average proportion of non-floating shares for all publicly traded firms is always higher than 60%.   Thus, the board of directors is usually dominated by non-floating shareholders.   Finally, the holding cost of non-floating shareholders approximates the par value (RMB 1) which is much lower than that of floating-share investors.

The existence of the Split Share Structure leads to severe corporate governance problems.   With a view to carrying out "the Guidelines on Promoting Reform, Opening-up and Steady Development of China's Capital Market", floating the non-floating shares of A-share listed companies, balancing the interests of shareholders, and addressing the problem of listed companies' split share structure, "the Pilot Reform of Listed Companies Split Share Structure" was formally initiated in 2005.   Before the reform of the share structure of listed firms is completed, the controlling non-floating shareholders may distribute cash dividends to themselves. The reason why they tend to do so is as follows.   First, because of the relatively lower holding costs, the cash dividend distribution will benefit the non-floating shareholders with a much higher cash dividend yield.   Second, the cash dividend payment is the only method for which non-floating shareholders can realize incomes. To sum up, we think that the controlling shareholders (usually non-floating shareholders) may make dividend policy decisions that hurt the maximum interest of floating shareholders.

3. Literature Review

Dividend policy has been a popular subject in financial studies, especially the relation between dividend policy and the value of a firm.   Gordon (1959) provides a valuation approach of firms which is to discount the dividend streams.   According to

his argument, we may easily derive that the more cash dividends a firm pays, the more valuable the firm should be.   Miller and Modigliani (1961) conclude that what really counts about the valuation of a firm are net profits and investments under ideal economic assumptions and the value of a firm is irrelevant with its dividend policy.

An ideal economy, however, hardly exists in the real world, and the market imperfections are just the normality.   The payout literature following that of Miller and Modigliani (1961) tries to justify the value premium relating to the dividend decision after dropping the ideal economic assumption with different perspectives. Among them, one of the theoretical assumptions is the most famous of all: information asymmetric/dividend signaling.

Information asymmetric and signaling hypotheses together explain the dividend policy rationally.   When asymmetric information exists between the insiders and outsiders of a firm - insiders know more information including future cash flow about the firm than outsiders - cash dividends might be a costly vehicle to convey a firm's future prospects that are unknown to the market and may alter market perceptions about the firm's future earnings.

Bhattacharya (1979) and Miller and Rock (1985) develop a two-period model. Both of their models conclude that it is unwise for bad-prospect firms to commit high level dividends, and only good-prospect firms can commit high level dividends without hurting long-term operations.   Asymmetric information and signaling hypotheses contain an important implication - that is, unanticipated dividend changes should be accompanied by stock price changes in the same direction.   This implication has been tested empirically.

The following research results support the assertion that dividend changes should be followed by stock price changes in the same direction.   Pettit (1972) finds that a significant price increase follows announcements of dividend increases, and a

significant price drop follows the announcement of cash dividend decreases whether the earnings performance was positive or negative.   Similarly, Aharony and Swary (1980) discover that shareholders of firms announcing cash dividend increases realize positive abnormal returns and shareholders of firms decreasing cash dividends sustained negative abnormal returns during the 20 days surrounding the announcement day.   Divecha and Morse (1983) show that the announcement effect of the cash dividend increases is positive.   Moreover, Grullon, Michaely, and Swaminathan (2002) summarize that the average 3-day abnormal return around a dividend-increase announcement is 1.34%, and the average 3-day abnormal return around a dividend-decrease announcement is –3.71%.   When it comes to the extreme dividend changes that are referred to as dividend initiations and dividend omissions, the research results of Asquith and Mullins (1983), Healy and Palepu (1988), and Michaely, Thaler and Womack (1995) indicate that stock prices react positively with dividend initiations and negatively with dividend decreases.

All of the findings of capital market reactions to dividend change announcements mentioned above do support the signaling hypothesis - namely, that unanticipated dividend changes provide information about shifts in management's assessment of a firm's future operational prospects, and unanticipated dividend changes are accompanied by stock price changes in the same direction.   Since the investors do not know the current and future levels of earnings, higher-than-anticipated earnings signaled by high dividends would lead to a positive stock price increase.

4. Data Sources and Methodology

4.1. Data

Our sample is drawn from all A-share firms listed on the Shanghai Stock Exchange and the Shenzhen Stock Exchange that have cash dividend announcements

over the period 2000 through 2004.   The sample firms' cash dividend announcement information, financial data, share structure data, and trading data are obtained from CSMAR (China Stock Market Accounting Research) which is provided by the GTA Information Technology Limited Company.   To be included in the sample, each observation must satisfy the following criteria.

a) The listed firms should not be financial firms.

b) The so-called cash dividend announcements should be purely annual cash dividend announcements.   In other words, firms with announcements of mid-term cash dividends and cash dividend announcements together with BS or TA are excluded. Thus, the price impact of purely annual cash dividend changes can be unambiguously examined.

c) The firm with a purely annual cash dividend announcement should also have a purely annual cash dividend announcement the previous year.

d) The firms should have trading data on the formal cash dividend declaration day.

e) The sample firms of cash dividend increases are firms with higher pure cash dividends per share comparing to those of the previous year.   The sample firms of cash dividend decreases are firms with lower pure cash dividends per share comparing to those of the previous year.

The final dataset contains 460 firms with announcements of cash dividend increases and 422 firms with announcements of cash dividend decreases.   For the 460 cash dividend increasing firms, 287 firms are drawn from the Shanghai Stock Exchange, and 173 firms are drawn from the Shenzhen Stock Exchange.   For 422 cash dividend decreasing firms, 253 firms are drawn from the Shanghai Stock Exchange, and 169 firms are from the Shenzhen Stock Exchange.

4.2. Research Methodology

An event study is adopted to investigate the announcement effect of cash

dividend changes on share prices.   The market model is then applied to estimate the abnormal returns of sample firms for different event windows.   The market model argues that a linear relationship holds between the return of the individual security and the return of the market, or:

$$R_{it} = \alpha_1 + \beta_1 R_{mt} + \varepsilon_{it}, \qquad t = \text{-120, -119, ..., -21,} \qquad (1)$$

where R_{it} is the daily return of the ith security at day t, R_{mt} is the daily return of the market at day t, and ε_{it} is a random error term incorporating the effect of factors that affect only the ith security.

In this paper, day 0 is selected as "the public declaration day of dividends distribution scheme".[1]   There are two main reasons why we define the event day in this way.   First, although in China the amount and type of dividends distribution as well as last year's earnings are declared on the shareholders' meeting which is always at least one day and even two months earlier than the public declaration day of dividends distribution scheme, the timing of actual dividend payment is still not decided on the shareholders' meeting.   "The public declaration of dividends distribution scheme" which is announced later gives the exact information on record day, ex-dividend day, and the actual dividend payment day and those days generally take place 7 to 10 days right after the public declaration of dividends distribution scheme.

Second, in China the public declaration days of dividends distribution scheme of publicly traded firms are usually concentrated on June and July.   However, the deadline for the announcement of last year's earnings is April 30.   The impact of earnings announcement should have already reflected on share prices by the end of April.   Therefore, the adoption of the public declaration day of dividends distribution

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[1] We have tried to employ the next day of shareholders' meeting day as the event day.   However, the results are not significant and so are not reported.

scheme as the event day can avoid the compounding interference of earnings announcement on the announcement effect of dividend changes.

For each security a maximum of 141 daily return observations for the period around its respective event is used, starting at day -120 and ending at day +20 relative to the event. The first 100 days in this period (-120 through -21) are designated the "estimation window", and the following 41 days (-20 through + 20) are designated the "event window".

The right-hand side of the first two terms of Equation (1) supplies a conditional expected return for the ith security. In other words, we may use the OLS value of $\hat{\alpha}$ and $\hat{\beta}$ in Equation (1) from the estimation window to estimate the conditional expected returns for the individual security in the event window. The difference between the real return in day t and the conditional expected return in day t is given by:

$$\delta_{it} = R_{it} - (\hat{\alpha}_1 + \hat{\beta}_1 R_{mt}), \qquad t = -20, -19, \ldots, 20. \qquad (2)$$

Here, δ_{it} serves as a measure of the risk-adjusted abnormal returns of the security in the event window. The cross-sectional average abnormal returns for day t are defined as:

$$AR_t = \left\{ \sum_{i=1}^{N} \delta_{it} \right\} / N, \qquad t = -20, -19, \ldots, 20, \qquad (3)$$

where N is the number of sample observations. The cumulative abnormal returns from day t_1 through day t_2, CAR_T, are:

$$CAR_T = \sum_{t=t_1}^{t_2} AR_t . \qquad (4)$$

As for the test of significance of average abnormal returns and cumulative abnormal returns, two methods are adopted. One is the ordinary cross-sectional method. The other is the standardized residual cross-sectional method which is

introduced by Boehmer, Musumeci and Poulsen (1991). The t-value formulae of the ordinary cross-sectional method and the standardized residual cross-sectional method to test the significance of average abnormal returns are illustrated as:

$$t_{OCSM}^{AR} = \frac{\frac{1}{N}\sum_{i=1}^{N} AR_{ie}}{\sqrt{\frac{1}{N(N-1)}\sum_{i=1}^{N}(AR_{ie} - \sum_{i=1}^{N}\frac{AR_{ie}}{N})}}, \tag{5}$$

where AR_{ie} is the average abnormal return of ith observation on one certain day in the event window, and:

$$t_{SRCSM}^{AR} = \frac{\frac{1}{N}\sum_{i=1}^{N} SAR_{ie}}{\sqrt{\frac{1}{N(N-1)}\sum_{i=1}^{N}(SAR_{ie} - \sum_{i=1}^{N}\frac{SAR_{ie}}{N})}}, \tag{6}$$

where SAR_{ie} is the standardized average abnormal return of ith observation on one certain day in the event window. Similarly, the t-value formulae of the ordinary cross-sectional method and the standardized residual cross-sectional method to test the significance of cumulative abnormal returns are done by substituting the AR_{ie} and SAR_{ie} with $CAR_{i(T1,T2)}$ and $SCAR_{i(T1,T2)}$ in Equation (5) and Equation (6), respectively.

5. Empirical Results

5.1. Announcement Effect of Cash Dividend Changes on Share Prices

To assess the effect of cash dividend changes on the share prices, we collect a sample consisting of firms that changed their cash dividends during the period 2000 to 2004. Each observation in the sample satisfies the criteria mentioned in Part 4. The resulting sample contains 422 announcements of cash dividend decreases and 460 announcements of cash dividend increases.

Table 1 presents the results of this analysis. For the cash dividend increase

sample, there are 16 negative-abnormal-return trading days and only 3 positive-abnormal-return trading days in the 20 days preceding the declaration of cash dividend increases.   For the cash dividend decrease sample, there are 13 negative-abnormal-return trading days and only 4 positive-abnormal-return trading days in the 20 days preceding the declaration of cash dividend decreases.   Thus, the stock prices tend to perform poorly before the announcement of cash dividend changes.   The 20-day cumulative abnormal return before the announcement of cash dividend changes is a negative 0.65% for cash dividend decreasing firms and is a significantly negative 0.75% for dividend increasing firms.

For the increasing cash dividend sample, the abnormal return is a significantly positive 0.23% at the day of a positive dividend change announcement.   The abnormal returns of the 8 days succeeding the announcement of cash dividend increases are all positive, and four of them are even significant.   Most of the abnormal returns of the 20 days after the cash dividend increase announcement are positive.   As a result, the cumulative abnormal return starts rebounding at the day of declaration.

For the decreasing cash dividend sample, the abnormal return is negative at the announcing date, but it is not significant.   There are 13 positive-abnormal-return trading days and 6 negative-abnormal-return trading days in the 20 days after the announcement of the cash dividend decreases.   Therefore, whether the cash dividend increases or decreases, the share prices are inclined to perform better after the announcement of dividend changes.   Cash dividend changes have a positive influence on the share prices.

Figure 1 provides the graph of cumulative abnormal returns on days surrounding the announcement of cash dividend changes.   Figure 1 shows that stock prices perform poorly before the announcement, but perform well after the

announcement.   Thus, Figure 1 echoes the viewpoints we have briefly concluded in the last paragraph.

In short, the empirical results only partly support the dividend signaling hypothesis.   The analysis results of the increasing cash dividend sample are consistent with the empirical implication of the signaling hypothesis, and the cash dividend increases are accompanied by the stock prices moving in the same direction. However, the empirical results of the decreasing cash dividend sample do not comply with the signaling hypothesis, and the cash dividend decreases are accompanied by the stock prices moving in the opposite direction.   Therefore, it is feasible to conclude that investors in China respond positively to the cash dividend announcement whether it is increasing or decreasing.   In other words, cash dividends are welcome in China nowadays according to the results of our analysis.

5.2. Price Impact of Cash Dividend Changes on Different Markets

After assessing the effect of cash dividend changes on the market price, we try to compare the price impact of cash dividend changes on different markets.   China has only two stock exchanges, one is the Shanghai Stock Exchange and the other is the Shenzhen Stock Exchange.   The sample firms are all collected from the listed firms of these two exchanges.   For the 460 increasing cash dividend firms, 287 firms are drawn from the Shanghai Stock Exchange and 173 firms are drawn from the Shenzhen Stock Exchange.   For the 422 decreasing cash dividend firms, 253 firms are drawn from the Shanghai Stock Exchange and 169 firms are from the Shenzhen Stock Exchange.   The results of this analysis are summarized in Table 2, and Table 3.

For the increasing cash dividend sample, most abnormal returns preceding the cash dividend change declaration are negative both for the Shanghai subsample and the Shenzhen subsample, but the negative abnormal returns of the Shenzhen

subsample are more intense than that of the Shanghai subsample. On the day of dividend increase announcement, significantly positive abnormal returns occur for both subsamples. After the cash dividend increase announcement, the cumulative abnormal returns of both markets exhibit upward-moving trends. On the other hand, the cumulative abnormal returns of the Shenzhen subsample increase more fiercely than that of the Shanghai subsample in a shorter time period, but the cumulative abnormal returns of the Shanghai subsample increase more steadily than that of the Shenzhen subsample in a longer time period. Generally speaking, although the overall abnormal return features of the Shanghai subsample and the Shenzhen subsample are slightly different, they are roughly the same with the pattern of full cash dividend increase sample as explained in Section 5.1.

For the cash dividend decrease case, the abnormal return pattern of the Shanghai subsample has a distinct difference from that of the Shenzhen subsample - that is, most of the abnormal returns of the Shenzhen subsample are negative before the announcement of the cash dividend decrease, but the abnormal returns of the Shanghai subsample show a comparatively positive performance before the announcement of cash dividend decrease. On the day of cash dividend decrease declaration, the abnormal return of the Shanghai subsample is negative, but that of the Shanghai subsample is zero. After the announcement of cash dividend decreases, the cumulative abnormal returns of both markets display upward-moving trends.

We thus conclude that, on the whole, the announcement effect of cash dividend changes is positive for both markets, and there is no great difference between the announcement effects of the two markets.

5.3. Announcement Effect of Different Sample Period

The empirical results from above are completely derived from the sample of the period 2000-04. We wonder whether the announcement effect of a dividend change

on share prices alters with time. Hence, we analyze the announcement effect with the sample year 1999 and cash dividend changes. The announcement effect of cash dividend changes in 1999 is quite important, because it provides the announcement effect of a quite different cash dividend distribution situation. We have pointed out that, in 1999, the ratio of cash-dividend-paying firms was low (36.78%) and the rules which severely influence the cash dividend payment decision were not promulgated then. Nevertheless, in 2001 the rules compelling listed firms to distribute cash dividends were announced and executed, and the ratio of cash-dividend-paying firms increased dramatically.

Figure 2 and Table 4 present the results of this analysis. Figure 2 and Table 4 clearly show the facts that the announcement effect of a cash dividend decrease is significantly positive, and the announcement effect of a cash dividend increase is insignificantly negative. The absolute value of cumulative abnormal returns for (0, 20) the event window of the 1999 sample is more than that of the 2000-04 sample. These empirical results are not only totally opposed to the dividend signaling hypothesis, but are also different from the analysis findings we got from 2000-04 dividend change sample.

The announcement effects of dividend changes before and after year 2000 present an immense variation. We think the promulgation and execution of two administrative rules may reasonably explain the variation. Before these two laws were declared, the ratio of cash-dividend-paying firms was lower, and capital gains were the main source of income for investors. Therefore, investors may look down upon cash dividends and react negatively to cash dividend increases and positively to cash dividend decreases. However, when the ratio of cash-dividend-paying firms increased sharply after these two rules were announced, except for capital gains, cash dividends became another major source of income. Thus, investors' attitudes

towards cash dividends may become positive, and react positively to all cash-dividend-paying firms.

5.4. Affecting Factors Analysis of the Announcement Effect

To further investigate factors that may affect the market reaction around the announcement of cash dividend changes, we estimate the following cross sectional regression using the OLS regression methodology:

$$CAR_{it} = \beta_0 + \beta_1 DC_{it} + \beta_2 DY_{it} + \beta_3 DP_{it} + \beta_4 ASSETS_{it} + \beta_5 PB_{it} + \beta_6 DEBT_{it} +$$

$$\beta_7 TATR_{it} + \beta_8 ROA_{it} + \beta_9 NF_{it} + \varepsilon_{it}, \tag{7}$$

where CAR is the cumulative abnormal returns for different event windows around the announcement of the dividend changes; DC is the percentage change in the cash dividend payment; DY is the dividend yield at the time of the announcement of the cash dividend changes; DP is the dividend payout ratio (cash dividend per share / earnings per share); ASSETS is the logarithm of the book value of the total assets at the time of the announcement of the cash dividend changes; P/B is the price-to-book ratio at the end of the year; DEBT is the debt ratio (book value of total liabilities / book value of total assets); TATR is the total assets turnover rate; ROA is the return on assets; NF is proportion of non-floating shares. Table 5 summarizes the investigation results.

Table 5 indicates that only four financial variables have a significant impact on the announcement effect of cash dividend changes. First, dividend yield has a significantly positive relation with CAR, but the significance disappears gradually with the time interval extension of event windows. In other words, the high dividend yield stocks are inclined to perform better than the low dividend yield ones. Next, for the event window of a longer time interval, P/B has a significantly negative impact on cumulative abnormal returns. In other words, value-oriented (low P/B) firms tend to have higher cumulative abnormal returns in a longer time interval, and the intrinsic

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value of a firm may be reflected on the longer cumulative abnormal returns.   Third, market investors react positively to the profit index ROA for the (0, 10) event window, but the significance of this positive connection disappears with the extension or curtailment of the event window.   Fourth, the ratio of non-floating shares has a negative impact on the cumulative abnormal returns of (0, 3), (0, 5) event windows. We have concluded that non-floating shareholders usually occupy the majority of the shareholder structure and dominate the board of directors.   Because the holding costs of non-floating shareholders are lower (dividend yields are higher), and the dividend distribution is the only mechanism they can realize incomes, the controlling shareholders (usually non-floating shareholders) may make an over-lavish cash dividend policy that hurts the interest of floating shareholders.   Therefore, the negative relation between the ratio of non-floating shares and cumulative abnormal returns does make great sense.

6. Conclusions and Summary

This paper adopts a sample of cash dividend changes from all listed A-share firms in China over the period 2000 to 2004 and applies an event study in order to investigate the impact of cash dividend changes on share prices and to examine simultaneously if the dividend signaling hypothesis holds in China's stock markets. We find that the cash dividend changes do have a considerable influence on share prices.   The share prices react significantly positive to both cash dividend increases and cash dividend decreases.   The result only half supports the signaling hypothesis. In fact, only the positive announcement effect for cash dividend increases fits the dividend signaling hypothesis.   Cash dividend decreases, on the other hand, also have a positive announcement effect.   Such a market reaction to dividend changes implies that cash dividends are welcome whether they are cash dividend increases or

cash dividend decreases.

The announcement effect of cash dividend changes is positive for the sample of different stock exchanges, but the significance alters with sources of the sample and the event window selection. Therefore, there is no great dissimilarity between the announcement effect of cash dividend changes for different markets in China. However, the empirical result of the 1999 cash dividend change sample reveals that the cash dividend changes are accompanied by stock price changes in the opposite direction. This analysis result is completely opposite to the dividend signaling hypothesis and also different from that of the 2000-2004 cash dividend change sample. Such result implies that investors react pessimistically to cash dividend increases and react optimistically to cash dividend decreases. Therefore, investors may have a negative point of view on cash dividends in 1999. However, when the ratio of cash-dividend-paying firms increased sharply after two rules we mention above were announced, cash dividends became a major source of income. Investors' attitudes towards cash dividends may turn positive, and react positively to all cash-dividend-paying firms. In short, the announcement effect of cash dividend changes and investors' attitude toward cash dividend changes may shift with time.

We further investigate factors which may probably have a close connection with the cumulative abnormal returns. We find that the dividend yield has a significantly positive relationship with short-term cumulative abnormal returns, but the significance disappears with the prolongation of event window for cumulative abnormal returns. Thus, high-dividend-yield stocks are inclined to experience higher positive abnormal returns. The ratio of non-floating shares, however, has a significantly negative connection with short-term cumulative abnormal returns. In other words, the existence of the Split Share Structure does have an undesirable influence on cash dividends. We expect that the implementation of "the Pilot Reform of Listed Companies Split Share Structure" not only can float the non-floating

shares of A-share listed firms, but can also partly eliminate the negative impact of non-floating shares on cash dividend declaration.

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Figure 1. Cumulative Abnormal Return on Days Surrounding the Announcement of Cash Dividend Changes

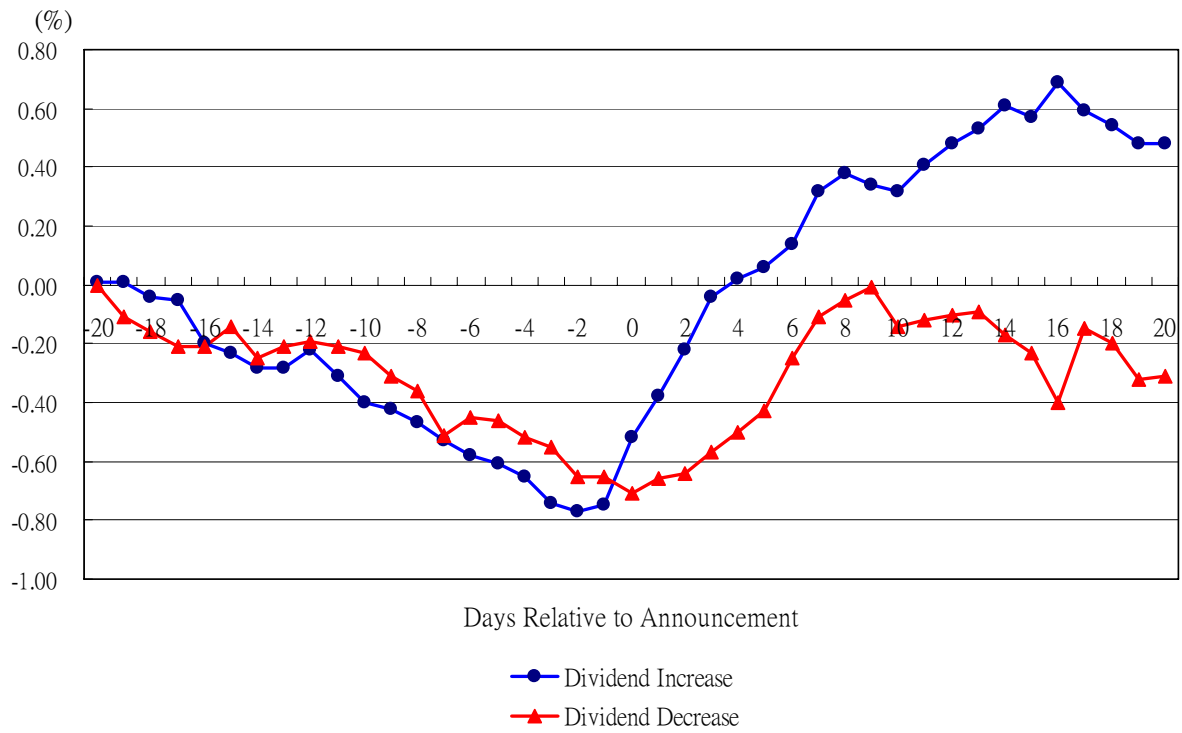Days Relative to Announcement

- ●— Dividend Increase
- ▲— Dividend Decrease

Figure 2. Cumulative Abnormal Return on Days Surrounding the Announcement of Cash Dividend Changes: Evidence of Year 1999

Days Relative to Announcement

- - - 2000-04 Cash Dividend Increase
- - - 2000-04 Cash Dividend Decrease
—▲— 1999 Cash Dividend Increase
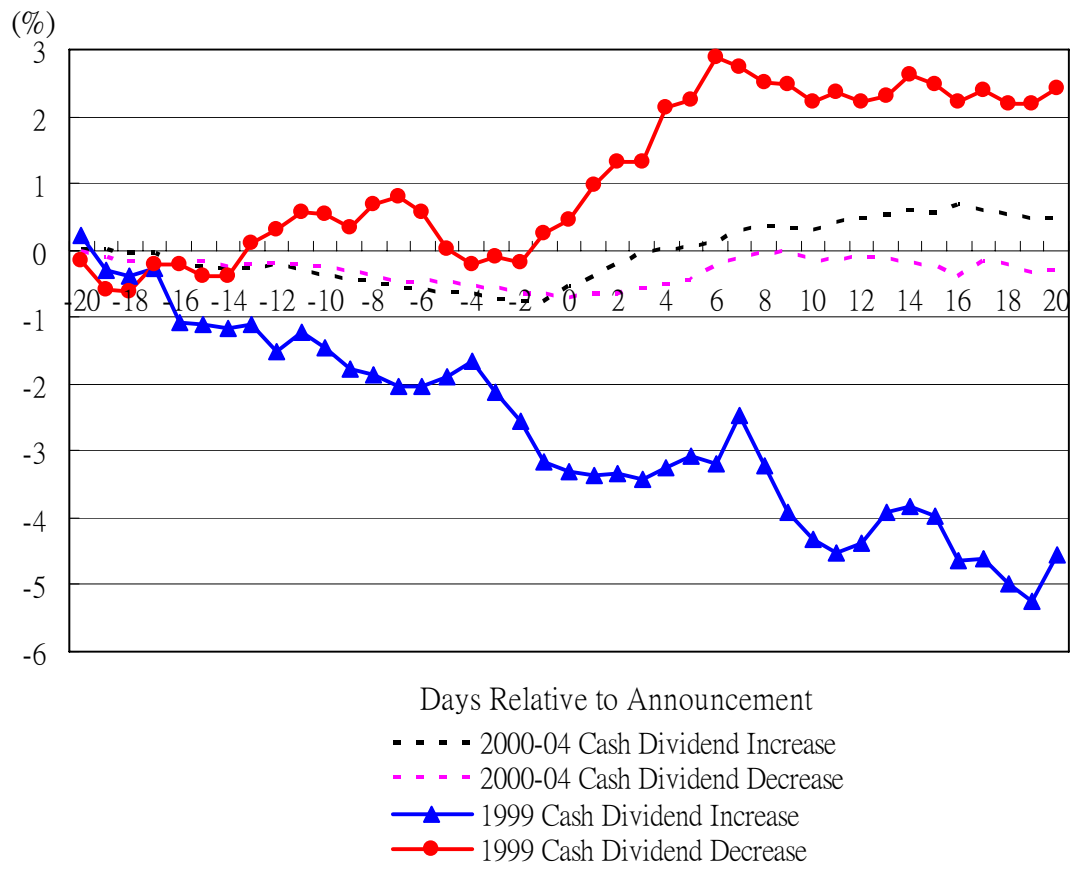—●— 1999 Cash Dividend Decrease

Table 1. Effect of Dividend Changes on the Market Price

This table examines the effect of dividend changes on the market price for stocks that change their dividends during the period 2000 to 2004. Each observation in the sample satisfies the criteria mentioned in Data Sources and Sample Selection. AR is the average abnormal return surrounding announcements of cash dividend changes. CAR is the cumulative abnormal return on days surrounding the announcement of cash dividend changes. T is the t-value of the ordinary cross-sectional method. Z is the t-value of standardized residual cross-sectional method.

Day	Panel A: Cash Dividend Increases						Panel B: Cash Dividend Decreases					
	AR (%)	T (AR)	Z (AR)	CAR (%)	T (CAR)	Z (CAR)	AR (%)	T (AR)	Z (AR)	CAR (%)	T (CAR)	Z (CAR)
-10	-0.09	-1.08	-0.81	-0.40	-1.52	-0.98	-0.02	-0.32	-0.12	-0.23	-0.70	-0.04
-9	-0.02	-0.22	0.05	-0.42	-1.52	-0.93	-0.08	-1.01	-0.72	-0.31	-0.89	-0.22
-8	-0.06	-0.76	-0.05	-0.47	-1.64	-0.89	-0.05	-0.70	-0.83	-0.36	-0.98	-0.41
-7	-0.05	-0.76	-0.57	-0.53	-1.74	-0.98	-0.15	-2.04*	-2.06*	-0.51	-1.30	-0.83
-6	-0.05	-0.70	-0.55	-0.58	-1.84	-1.09	0.06	0.66	0.66	-0.45	-1.09	-0.64
-5	-0.03	-0.42	-0.76	-0.61	-1.89	-1.25	-0.01	-0.21	0.01	-0.46	-1.08	-0.60
-4	-0.04	-0.50	-0.89	-0.65	-1.94	-1.43	-0.06	-0.70	-0.19	-0.52	-1.15	-0.61
-3	-0.09	-1.29	-1.22	-0.74	-2.13*	-1.64	-0.03	-0.47	-0.65	-0.55	-1.20	-0.69
-2	-0.03	-0.37	0.11	-0.77	-2.16*	-1.58	-0.09	-1.18	-1.17	-0.65	-1.34	-0.85
-1	0.01	0.16	-0.26	-0.75	-2.13*	-1.64	0.00	-0.06	-0.02	-0.65	-1.29	-0.80
0	0.23	3.05**	3.66***	-0.52	-1.46	-0.80	-0.06	-0.79	-0.39	-0.71	-1.36	-0.83
1	0.14	2.12*	2.22*	-0.38	-1.03	-0.38	0.04	0.51	1.15	-0.66	-1.27	-0.63
2	0.16	2.39*	2.80**	-0.22	-0.59	0.12	0.03	0.39	0.40	-0.64	-1.18	-0.57
3	0.19	2.77**	2.69**	-0.04	-0.09	0.57	0.06	0.84	1.25	-0.57	-1.02	-0.38
4	0.06	0.75	0.63	0.02	0.05	0.70	0.07	0.95	1.37	-0.50	-0.86	-0.19
5	0.04	0.50	0.28	0.06	0.14	0.72	0.07	0.88	1.21	-0.43	-0.72	-0.02
6	0.08	1.22	1.53	0.14	0.35	0.98	0.17	2.48*	2.23*	-0.25	-0.42	0.24
7	0.18	2.80**	2.87**	0.32	0.78	1.41	0.15	2.01*	2.08*	-0.11	-0.17	0.50
8	0.05	0.71	0.65	0.38	0.88	1.48	0.06	0.77	1.02	-0.05	-0.08	0.61
9	-0.04	-0.50	0.13	0.34	0.78	1.48	0.04	0.56	0.87	-0.01	-0.01	0.69
10	-0.02	-0.23	0.19	0.32	0.71	1.46	-0.14	-1.61	-1.10	-0.14	-0.22	0.54

The symbols *, **, and *** denote statistical significance at the 5%, 1% and 0.1% levels, respectively, using a 2-tail test.

Table 2. Effect of Dividend Changes on the Market Price for Different Markets

This table examines the effect of dividend changes on the market price for stocks listed on the Shanghai Stock Exchange and the Shenzhen Stock Exchange that change their dividends during the period 2000 to 2004. Each observation in the sample satisfies the criteria mentioned in Data Sources and Sample Selection. AR is the average abnormal return surrounding announcements of cash dividend changes. CAR is the cumulative abnormal return on days surrounding the announcement of cash dividend changes. T is the t-value of the ordinary cross-sectional method. Z is the t-value of standardized residual cross-sectional method.

| | Panel A: Cash Dividend Increase | | | | | | Panel B: Cash Dividend Decrease | | | | | |
| | Shanghai | | | Shenzhen | | | Shanghai | | | Shenzhen | | |
Day	AR (%)	T (AR)	Z (AR)	AR (%)	T (AR)	Z (AR)	AR (%)	T (AR)	Z (AR)	AR (%)	T (AR)	Z (AR)
-10	-0.06	-0.57	-0.24	-0.13	-1.10	-1.09	0.05	0.52	0.60	-0.13	-0.97	-0.75
-9	-0.09	-0.81	-0.34	0.10	0.89	0.63	-0.14	-1.55	-1.36	0.02	0.14	0.25
-8	-0.05	-0.56	-0.36	-0.07	-0.51	0.28	-0.05	-0.47	-0.55	-0.06	-0.53	-0.62
-7	-0.09	-1.06	-1.26	0.01	0.04	0.51	-0.05	-0.53	-0.74	-0.29	-2.49*	-2.26*
-6	-0.03	-0.28	-0.27	-0.09	-0.77	-0.54	0.11	0.97	0.74	-0.03	-0.22	0.12
-5	0.01	0.18	-0.18	-0.11	-0.78	-0.92	0.04	0.44	0.82	-0.09	-0.87	-0.90
-4	-0.01	-0.08	-0.41	-0.08	-0.71	-0.90	-0.11	-1.11	-0.67	0.03	0.23	0.45
-3	-0.04	-0.40	-0.42	-0.19	-1.71	-1.63	-0.03	-0.33	-0.33	-0.04	-0.34	-0.62
-2	0.02	0.22	0.92	-0.11	-1.02	-1.08	-0.04	-0.42	-0.51	-0.17	-1.30	-1.18
-1	-0.07	-0.78	-0.83	0.14	1.26	0.65	0.14	1.58	1.83	-0.22	-2.15*	-2.19*
0	0.25	2.80**	3.15**	0.21	1.48	1.99*	-0.09	-1.09	-0.67	0.00	-0.01	0.10
1	0.24	2.72**	2.59**	-0.01	-0.12	0.19	0.08	0.78	1.09	-0.02	-0.15	0.44
2	0.10	1.24	1.49	0.25	2.21*	2.55*	0.02	0.24	0.35	0.04	0.32	0.21
3	0.10	1.19	1.01	0.34	2.87**	2.97**	0.14	1.48	1.66	-0.05	-0.41	0.03
4	-0.06	-0.59	-0.75	0.24	1.88	2.00*	-0.08	-0.93	-0.93	0.30	2.27*	2.86**
5	-0.01	-0.07	-0.13	0.11	0.86	0.55	0.02	0.17	0.23	0.16	1.19	1.62
6	0.13	1.47	1.90	0.01	0.11	0.14	0.21	2.22*	1.92	0.12	1.16	1.17
7	0.32	3.69***	3.78***	-0.05	-0.56	-0.61	0.23	2.30*	2.27*	0.02	0.20	0.24
8	0.16	1.58	1.39	-0.12	-1.25	-1.06	0.12	1.09	1.36	-0.03	-0.31	-0.21
9	-0.03	-0.35	0.12	-0.04	-0.38	0.04	0.12	1.29	1.41	-0.08	-0.69	-0.30
10	-0.01	-0.10	0.13	-0.03	-0.26	0.14	-0.08	-0.74	-0.07	-0.22	-1.64	-1.75

The symbols *, **, and *** denote statistical significance at the 5%, 1% and 0.1% levels, respectively, using a 2-tail test.

Table 3. Cumulative Abnormal Returns of Different Event Windows for Different Markets

This table presents cumulative abnormal returns of different event windows for stocks listed on the Shanghai Stock Exchange and the Shenzhen Stock Exchange that change their dividends during the period 2000 to 2004. Each observation in the sample satisfies the criteria mentioned in Data Sources and Sample Selection. CAR is the cumulative abnormal return on days surrounding the announcement of cash dividend changes. T is the t-value of the ordinary cross-sectional method. Z is the t-value of standardized residual cross-sectional method.

Event Window	Shanghai Cash Dividend Increase			Shenzhen Cash Dividend Increase			Shanghai Cash Dividend Decrease			Shenzhen Cash Dividend Decrease		
	CAR (%)	T (CAR)	Z (CAR)	CAR (%)	T (CAR)	Z (CAR)	CAR (%)	T (CAR)	Z (CAR)	CAR (%)	T (CAR)	Z (CAR)
(-20,0)	-0.28	-0.62	-0.27	-0.93	-1.54	-0.93	0.26	0.53	0.96	-2.15	-2.03*	-1.64
(-10,0)	-0.14	-0.47	-0.09	-0.32	-0.83	-0.49	-0.17	-0.54	-0.33	-0.98	-1.33	-1.08
(-5,0)	0.17	0.83	0.98	-0.14	-0.48	-0.59	-0.10	-0.44	0.06	-0.49	-1.17	-1.04
(-3,0)	0.16	0.97	1.56	0.05	0.23	0.28	-0.03	-0.14	0.08	-0.42	-1.36	-1.33
(-1,0)	0.20	1.36	2.10*	0.24	1.17	1.06	0.05	0.36	0.81	-0.22	-1.22	-1.16
(-2,0)	0.18	1.57	1.93	0.35	1.93	1.91	0.01	0.04	0.31	-0.38	-1.54	-1.40
(0,+1)	0.49	3.98***	4.23***	0.19	1.12	1.81	-0.01	-0.09	0.51	-0.02	-0.13	0.47
(0,+2)	0.58	4.02***	4.34***	0.45	1.99*	2.75**	0.01	0.06	0.65	0.02	0.10	0.46
(0,+3)	0.68	3.97***	4.25***	0.78	2.75**	3.56***	0.15	0.85	1.41	-0.03	-0.12	0.35
(0,+5)	0.62	3.02**	3.07**	1.14	3.70***	4.40***	0.08	0.38	0.90	0.43	1.14	1.91
(0,+10)	1.18	3.81***	4.08***	0.90	2.28*	2.86**	0.68	2.04*	2.71**	0.25	0.50	1.20
(0,+20)	1.32	3.15**	3.77***	1.08	1.67	2.50*	0.25	0.52	1.31	0.47	0.73	1.52
(-1,+1)	0.42	2.88**	3.02**	0.33	1.66	1.87	0.13	0.76	1.30	-0.24	-1.32	-0.90
(-3,+3)	0.59	2.61**	3.11**	0.63	1.88	2.22*	0.21	0.90	1.31	-0.45	-1.08	-0.81
(-10,+10)	0.79	1.80	2.30*	0.38	0.64	1.08	0.60	1.28	1.77	-0.74	-0.71	-0.30
(-20,+20)	0.80	1.31	1.90	-0.05	-0.05	0.77	0.60	0.87	1.68	-1.69	-1.16	-0.59

The symbols *, **, and *** denote statistical significance at the 5%, 1% and 0.1% levels, respectively, using a 2-tail test.

Table 4. Cumulative Abnormal Returns for Different Event Windows: Evidence of Year 1999

Event Windows	Cash Dividend Increase			Cash Dividend Decrease		
	CAR	T(CAR)	Z(CAR)	CAR	T(CAR)	Z(CAR)
(-20,0)	-3.32%	-1.80	-1.38	0.44%	0.26	1.14
(-10,0)	-2.08%	-1.54	-1.32	-0.13%	-0.11	0.32
(-5,0)	-1.27%	-1.23	-1.02	-0.13%	-0.16	0.30
(-3,0)	-1.64%	-1.37	-1.40	0.65%	0.92	1.36
(-2,0)	-1.19%	-1.27	-1.20	0.55%	0.98	1.47
(-1,0)	-0.75%	-1.09	-1.00	0.62%	1.22	1.61
(0,+1)	-0.21%	-0.30	0.15	0.73%	1.35	1.80
(0,+2)	-0.18%	-0.22	0.22	1.06%	1.46	1.95
(0,+3)	-0.27%	-0.31	0.21	1.06%	1.41	1.79
(0,+5)	0.09%	0.10	0.75	1.99%	1.75	2.03*
(0,+10)	-1.15%	-0.84	-0.26	1.98%	1.31	1.83
(0,+20)	-1.40%	-0.67	0.04	2.16%	1.14	1.64
(-1,+1)	-0.81%	-0.95	-0.51	1.16%	1.81	2.40*
(-3,+3)	-1.75%	-1.19	-0.91	1.51%	1.50	2.07*
(-10,+10)	-3.08%	-1.51	-0.98	1.65%	0.84	1.56
(-20,+20)	-4.56%	-1.39	-0.69	2.40%	0.83	1.63

The symbols *, **, and *** denote statistical significance at the 10%, 5%, 1% and 0.1% levels, respectively, using a 2-tail test.

Table 5. Effect of Cash Dividend Changes on the Share Prices: A Multivariate Analysis

This table reports the average estimated coefficients of the following cross-sectional regression:

$$CAR_{it} = \beta_0 + \beta_1 DC_{it} + \beta_2 DY_{it} + \beta_3 DP_{it} + \beta_4 SIZE_{it} + \beta_5 PB_{it} + \beta_6 DEBT_{it} + \beta_7 TATR_{it} + \beta_8 ROA_{it} + \beta_9 NF_{it} + \varepsilon_{it} \, .$$

The sample consists of stocks that change their cash dividends during the period 2000 to 2004. Each observation in the sample satisfies the criteria mentioned in Data Sources and Sample Selection. CAR is the cumulative abnormal return for different event windows around the announcement of the dividend changes. DC is the percentage change in the cash dividend payment. DY is the dividend yield at the time of the announcement of the cash dividend changes. DP is the dividend payout ratio (cash dividend per share/ earnings per share). ASSETS is the logarithm of the book value of the total assets at the time of the announcement of the cash dividend changes. P/B is the price-to-book ratio at the end of the year. DEBT is the debt ratio (book value of total liabilities/ book value of total assets). TATR is the total assets turnover rate. ROA is the return on assets. NF is proportion of non-floating shares. The F-statistics test the joint hypotheses that both the intercept and the slope coefficients are insignificantly different from zero. Finally, t-statistics are in parentheses.

Variable	Dependent Variable= CAR					
	$CAR_{(-1,1)}$	$CAR_{(0,1)}$	$CAR_{(0,3)}$	$CAR_{(0,5)}$	$CAR_{(0,10)}$	$CAR_{(0,20)}$
Intercept	-0.0066	-0.0151	-0.0393	-0.0424	0.0081	-0.0383
	(-0.28)	(-0.78)	(-1.36)	(-1.18)	(0.16)	(-0.53)
DC	0.0005	0.0004	0.0014	0.0016	0.0016	-0.0020
	(0.55)	(0.54)	(1.29)	(1.24)	(0.87)	(-0.75)
DY	0.2657 **	0.3353 ***	0.3116 **	0.2195	0.1655	0.2487
	(3.15)	(4.79)	(2.98)	(1.70)	(0.91)	(0.96)
DP	0.0018	0.0019	0.0018	0.0030	0.0016	-0.0038
	(1.36)	(1.71)	(1.10)	(1.47)	(0.54)	(-0.92)
ASSETS	0.0003	0.0006	0.0022	0.0028	0.0003	0.0029
	(0.29)	(0.65)	(1.65)	(1.70)	(0.11)	(0.87)
PB	-0.0005	0.0002	-0.0004	-0.0006	-0.0022	-0.0037 *
	(-0.79)	(0.38)	(-0.58)	(-0.69)	(-1.72)	(-2.02)
DEBT	0.0056	0.0040	0.0025	0.0039	0.0129	0.0028
	(0.88)	(0.76)	(0.31)	(0.40)	(0.93)	(0.14)
TATR	-0.0003	-0.0013	-0.0001	0.0005	0.0019	0.0029
	(-0.16)	(-0.71)	(-0.04)	(0.16)	(0.41)	(0.44)
ROA	0.0415	-0.0004	0.0609	0.0755	0.2044 **	0.1636
	(1.19)	(-0.01)	(1.42)	(1.42)	(2.71)	(1.53)
NF	-0.0103	-0.0062	-0.0210 *	-0.0356 **	-0.0294	-0.0267
	(-1.33)	(-0.96)	(-2.20)	(-3.01)	(-1.76)	(-1.13)
F-Test	3.88 ***	5.62 ***	5.20 ***	3.96 ***	2.78 **	2.40 *
(P-Value)	(0.000)	(0.000)	(0.000)	(0.000)	(0.003)	(0.010)
Adj. R^2	2.86%	4.51%	4.12%	2.94%	1.79%	1.41%

The symbols *, **, and *** denote statistical significance at the 5%, 1% and 0.1% levels, respectively, using a 2-tail test.