

An Empirical Research on the Impact of Dividend Policy Disclosure on Company Stock Price

Xiaochang Liu*

Accounting, Shanxi University of Finance and Economics, Shanxi, 030000, China

*Corresponding author. Email: vlopes@une.edu

Abstract. This thesis uses the event study method and takes the A and B shares of the manufacturing industry in Shanghai and Shenzhen stock markets in 2019 as the research samples, and uses the market model to study the impact of the disclosure of cash dividend, mixed dividend and non-dividend policy on the stock price of the company. Study found that the announcement of the cash dividend policy did not cause the significant increase or decrease of stock prices. China's unique "semi-mandatory dividend policy" makes information conveyed by the disclosure of domestic cash dividend policy is different from the western scholars research and have it's own new connotation. The "semi-mandatory dividend policy" makes it more difficult for investors to interpret the message of dividend policy and make rational decisions. At the same time, it also makes the market reaction of dividend policy more complicated in the further study. The announcement of mixed dividend policy and non-dividend policy caused a significant rise in stock prices. The CAR (-2, 2) of the companies' stock with non-dividend policy have the highest average. The results show that China's capital market is more keen on stock speculation. The "speculation" and "arbitrage" behavior of institutional or individual investors on stocks will have a certain impact on the stock price after the announcement of dividend policy. Based on the relevant conclusions of the empirical study and combined with China's relevant policies, his thesis makes an in-depth analysis of the reasons why the disclosure of cash dividend, mixed dividend and non-dividend policy affects the stock price.

Keywords: Dividend distribution, Dividend policy, Company stock price.

1. Introduction

1.1 Research Background and Motivation

The three major decisions of the company's financial management include investment decisions, financing decisions, and dividend distribution decisions, of which dividend distribution is of great significance to the company's future development and the improvement of its value. Scholars have conducted in-depth research on the issue of dividend distribution, and many scholars in China have shown that China's stock market is not mature enough compared with west developed capital markets, and traditional research theories cannot explain some of the problems of Dividend Distribution in China's stock market, and China's capital market has its own uniqueness. Therefore, with the continuous improvement of China's stock market in recent years, the market environment has been changing with the passage of time, and the empirical research on issues related to dividend distribution still has certain practical significance.

Dividends are the return of money a company gives to investors, and the dividend policy will send positive or negative signals to investors. Western scholars believe that when the managers are very confident in the future development of their company, they will decided to increase dividends, and vice versa, it will reduce dividends, but whether this "signal transmission method" is suitable for China's capital market still needs further research and discussion. Based on the event study method, this paper will study the impact of the publish of cash dividends, mixed dividends, and non-dividend policies on stock prices, and explore the information connotation of these dividend policies.

1.2 Literature Review

The company's dividend policy has always been a hot topic of discussion in the field of finance and economics. In 1961 Miller and Mogliani, in their book Dividend Policy, Growth, and the

valuation of shares, they argued that dividend publishment was that dividend policies did not affect corporate value.[1] Under the conditions of a Perfect Market, that is, there is no information asymmetry between managers and investors, no tax, no transaction costs, and the company's dividend policy has no impact on corporate value. However, Charest (1978) and James A. Brickley (1983) have conducted a large number of empirical studies showing that the company's dividend policy affects the stock price of the company, especially the cash dividend can send a signal to the market that the company is in good business, so the cash dividend is often accompanied by an increase in the stock price [2,3]. Brennan (1970) proposed a stock valuation model that states that companies send cash dividends must have higher pre-tax gains in order to offset the adverse effects of dividend payments. Thus, the best dividend policy for a company is not to pay dividends at all, the narrow theory of tax differences, which holds that investors can delay the payment of income tax by delaying the realization of capital gains [3]. Therefore, other conditions remain unchanged, investors tend to prefer capital gains over cash dividends [4].

Zhang Shuiquan and Han Dezong (1997) first paid attention to the dividend signaling effect in China. The study showed that companies tend to pay cash dividends in bearish market and stock dividends in bullish market. However, the relevant research conclusions are drawn when China has not yet implemented the price limit system, and the conclusions have great limitations [5]. Tian Baoxin and Wang Jianqiong (2016) used the questionnaire survey method to conduct research, and the results showed that under the condition of no refinancing, investors' preference for dividend policy from high to low is stock dividends, mixed dividends, and cash dividends [6]. Zhang Chen (2018) took 14,222 dividend distribution announcements of China's A shares from 2005 to 2017 as a sample, and used the propensity score matching method to study the short-term market reaction of dividend policy. The results show that the shareholder wealth of companies implementing cash dividends is significantly reduced [7]. Niu Qingying (2019) found that in the Chinese stock market, cash dividends are negatively correlated with stock price fluctuations, that is, dividends issued by listed companies can help stabilize stock price fluctuations [8]. The research of Zhao Feixue (2014) and Zhan Linghui (2016) shows that after the introduction of the "semi-mandatory dividend policy", the information content of cash dividends has changed. Companies with refinancing needs and poor performance will also pay dividend. The distribution of cash dividends did not change the company's dividend distribution situation and also did not enhance the company's awareness of cash distribution, and caused a significant "negative incentive" effect on companies that had previously paid high cash dividends, and the company's value was not greatly improved[9,10]. The research of Xie Zhifei (2019) shows that the implementation of the semi-mandatory dividend policy, as a new policy caterer, has significantly weakened the regulating effect of the law of market value, and the market mechanism has been difficult to play in state-owned company [11].

1.3 Research Contents

This paper will use the event study method and the market model to empirically analyze the impact of dividend policy disclosure on the company's stock price, calculate the cumulative excess return of the sample stocks and conduct a T test to test whether the dividend policy disclosure will have a significant impact on the stock price. That is, whether the disclosure of dividend policy will lead to a significant increase or decrease in stock price.

2. Methodology

2.1 Selection of Event Days and Research Samples

This paper studies the impact of the disclosure of cash dividends, mixed dividends and non-distributed dividend policies on the company's stock price. There are three time points for the disclosure date of the dividend policy, That is, the date of announcement of the Dividend distribution plan, the date of resolution of the shareholders' general meeting, and the implementation date of dividend distribution. This paper adopts the disclosure date of the first dividend announcement as the

event date of this study. According to the classification criteria of the 2012 edition of the CSRC Industry Classification, the manufacturing stocks of the Shanghai Stock Exchange and the Shenzhen Stock Exchange were selected as the analysis objects, and the samples were screened as follows:

For the sake of continuity of the sample data, only companies listed before 2018 were selected as samples. Since the stock price in 2020 and 2021 will be generally affected by factors such as the epidemic, in order to eliminate this unstable factor, this article only studies the impact of dividend distribution events before 2019 on the stock price. Some of the listed companies distribute dividends twice a year. This paper excludes the second dividend distribution event and only selects the first dividend distribution event as a sample. Excluding the stock samples that also disclosed other major matters in the event window, other major matters include: mergers and acquisitions, litigation and arbitration, irregularities, private placements, and changes in the chairman of the board. Stocks of ST listed companies are excluded, as the financial situation of companies warned of the risk of delisting is usually unstable, and the movement of their stock prices is susceptible to a variety of factors. The mixed dividends involved in this article are the combination of distribution of cash and stock dividend or the transfer of reserve to common shares, That is, distribution of cash and shares, distribution of cash and transfer of reserve to common shares, distribution of cash and distribution of shares and transfer of reserve to common shares.

Finally, a total of 94 stocks were obtained as research samples (42 stocks listed on the Shenzhen Stock Exchange and 52 stocks listed on the Shanghai Stock Exchange), of which the sample size used to study the impact of cash dividend announcement disclosure on stock prices was 30. The sample size used to study the impact of mixed dividend announcement disclosure on stock price is 35; the sample size used to study the impact of mixed dividend announcement disclosure on stock price is 29.

All the research data in this paper come from the RESSET financial database and the CSMAR database.

2.2 Selection of Event Window

This paper studies whether the occurrence of the event of dividend policy disclosure has an impact on the stock price on the day and the period before and after the day. The longer the event period, the more likely it is to be disturbed by other factors. The window period is selected two days before the announcement date, because the market is not completely efficient, there may be a situation where inside information is leaked, at which point investors will have positive or bearish expectations for the stock, and investors' decisions based on their expectations may be reflected in advance in the fluctuations in the stock price; the window period is two days after the announcement date, because the announcement date of the dividend policy will have a certain impact on the stock price on the day of announcement date and the days after it, and the announcement date of the dividend policy will affect the stock price. The effects can last a long time. Therefore, the event window of this article is set to 2 days before and after the event day.

2.3 Selection of Event Window

The model used in this paper is a one-factor market model for a single security in arbitrage pricing theory:

$$R_i = \alpha_i + \beta_i R_M + \varepsilon_i \quad (1)$$

In the formula, R_i represents the actual rate of return of the i stock; R_M represents the market rate of return, which is calculated by the weighted average market rate of return on the market capitalization in this paper; $\alpha_i + \beta_i R_M$ is the sum of the expected return of the stock and the market risk premium; ε_i Represents the benefits from non-systemic risks associated with event announcements, the non-systemic risk in this paper is the risk brought about by the company's

dividend announcement, so ε_i represent the risk premium arising from the company's dividend announcement.

$$\alpha_i = \bar{R}_i - \beta_i \bar{R}_M \quad (2)$$

β_i Beta coefficient, which refers to the degree of response of the i stock's return change to the market portfolio return change. The β value of the stock in this article is directly based on the RESSET financial database to provide the monthly return for the 12 months (Beta_12-month rolling) prior to the announcement ; $\bar{R}_i$ means the expected return of the i stock, this paper selects the monthly actual holding rate of the company's stocks in the 12 months before the dividend announcement of each sample company, and calculates the average value $\bar{R}_i$; $\bar{R}_M$ represents the expected return of the market portfolio. In this paper, the average monthly market value-weighted market return of each sample company in the 12 months prior to the dividend announcement is selected and the average value $\bar{R}_M$ is calculated.

3. Results and Discussion

3.1 Impact of Cash Dividend Announcements on Share Prices

After calculation, the calculation result of the standard deviation of the average Cumulative Abnormal Return of the sample stocks and the Cumulative Abnormal Return of the sample stocks in the 2 days before and after the cash dividend announcement date is as follows:

Table 1. Standard deviation and T-statistic calculation table for stocks paying cash dividends during the event window period

Stock code	Company name	Market model	ε_t					CAR
			-2	-1	0	+1	+2	
300439	Medicalsystem Biotechnology	$R = 0.0053 + 1.0094 R_M + \varepsilon$	0.0007	-0.0121	-0.0199	-0.0088	0.0165	-0.0236
600038	Avicopter Plc	$R = 0.0252 + 0.8647 R_M + \varepsilon$	-0.0092	-0.0379	-0.0152	0.0067	0.0172	-0.0385
000401	Tangshan Jidong Cement	$R = 0.0230 + 0.9381 R_M + \varepsilon$	-0.0359	-0.0172	-0.0179	-0.0103	-0.0536	-0.1349
000970	Beijing Zhong Ke San Huan High-Tech	$R = -0.0092 + 1.1661 R_M + \varepsilon$	-0.0050	-0.0061	0.0309	0.0021	0.0019	0.0239
000338	Weichai Power	$R = 0.0193 + 0.4502 R_M + \varepsilon$	-0.0338	-0.0457	-0.0078	0.0238	-0.0434	-0.1069
600056	China Meheco Group	$R = -0.0133 + 1.7378 R_M + \varepsilon$	0.0319	0.0272	-0.0303	-0.0252	0.0017	0.0054
000400	XJ Electric	$R = 0.0068 + 0.5563 R_M + \varepsilon$	-0.0272	0.0029	0.0040	0.0089	-0.0103	-0.0218
300437	Henan Qingshuiyuan Technology	$R = 0.0124 + 0.7328 R_M + \varepsilon$	-0.0443	0.0086	-0.0675	-0.1098	-0.0010	-0.2139
000977	Inspur Electronic Information Industry	$R = 0.0299 + 1.1393 R_M + \varepsilon$	-0.0873	-0.0209	-0.0159	0.0149	-0.0474	-0.1566
000988	Huagong Tech	$R = 0.0129 + 1.2846 R_M + \varepsilon$	-0.0327	-0.0108	-0.0647	-0.0158	-0.0028	-0.1268
600006	DongFeng Automobil	$R = -0.0012 + 1.3301 R_M + \varepsilon$	0.0171	-0.0293	0.0614	0.0210	-0.0293	0.0407
000157	Zoomlion Heavy Industry Science and Technology	$R = 0.0080 + 0.5928 R_M + \varepsilon$	0.0061	-0.0497	-0.0027	0.0247	-0.0062	-0.0278
600031	Sany Heavy Industry	$R = 0.0468 + 0.7499 R_M + \varepsilon$	-0.0599	-0.0117	-0.0557	-0.0726	-0.0324	-0.2323
600059	Zhejiang Guyuelongshan Shaoxing Wine	$R = 0.0018 + 1.1313 R_M + \varepsilon$	-0.0191	-0.0083	0.0012	0.0026	0.0423	0.0188
000301	Jiangsu Wujiang China Eastern Silk Market	$R = -0.0052 + 0.6094 R_M + \varepsilon$	0.0023	0.0028	-0.0050	0.0675	0.0337	0.1012
002004	Huapont Life Sciences	$R = -0.0017 + 0.8199 R_M + \varepsilon$	-0.0207	0.0263	-0.0202	-0.0142	-0.0095	-0.0384
002521	Qifeng New Material	$R = -0.0191 + 0.5324 R_M + \varepsilon$	0.0614	0.0322	0.0000	0.0034	0.0265	0.1235
000023	Shenzhen Universe (Group)	$R = 0.0028 + 1.7719 R_M + \varepsilon$	-0.0469	0.0134	-0.0084	-0.0118	-0.0096	-0.0634
600010	Inner Mongolia BaoTou Steel Union	$R = -0.0096 + 1.3054 R_M + \varepsilon$	0.0043	0.0055	0.0092	0.0154	0.0144	0.0488
000021	Shenzhen Kaifa Technology	$R = 0.0155 + 1.3961 R_M + \varepsilon$	-0.0280	-0.0297	-0.0010	-0.0394	0.0035	-0.0945
000333	Midea Group	$R = -0.0041 + 0.5919 R_M + \varepsilon$	0.0151	0.0301	-0.0275	-0.0011	0.0076	0.0241
600019	Baosteel stock	$R = -0.0062 + 0.5538 R_M + \varepsilon$	0.0066	0.0049	-0.0220	0.0075	0.0085	0.0054

002522	Zhejiang Zhongcheng Packing Material	$R = -0.0357 + 1.3311R_M + \varepsilon$	0.0447	0.0399	0.0413	0.0908	0.0945	0.3112
300438	Guangzhou Great Power Energy&Technology	$R = 0.1101 + 1.3009R_M + \varepsilon$	-0.0396	-0.0025	-0.0019	-0.0292	-0.0362	-0.1094
000153	Anhui Fengyuan Pharmaceutical	$R = -0.0118 + 1.1422R_M + \varepsilon$	0.0265	0.0014	-0.0050	-0.0113	0.0270	0.0385
600055	Beijing Wandong Medical Technology	$R = 0.0071 + 1.7037R_M + \varepsilon$	0.0095	0.0179	-0.0118	-0.0158	-0.0022	-0.0025
300434	Sichuan Goldstone Asia Pharmaceutical Inc.	$R = -0.0128 + 0.6621R_M + \varepsilon$	-0.0255	0.0301	-0.0301	-0.0020	-0.0455	-0.0729
600060	Hisense Visual Technology	$R = -0.0243 + 1.3071R_M + \varepsilon$	0.0365	0.0061	-0.0204	0.0361	0.0198	0.0781
000989	Jiuzhitang	$R = -0.0280 + 1.6417R_M + \varepsilon$	0.0402	0.0124	0.0319	0.0291	0.0264	0.1399
000990	ChengZhi	$R = -0.0010 + 2.4768R_M + \varepsilon$	-0.0301	0.0053	0.0155	-0.0011	-0.0116	-0.0220
The CAR of the sample stocks over the window period $\frac{\sum_{i=1}^N CAR(-2,2)}{N} = -0.017556$								
The standard deviation of the CAR of the sample stock over the window period $S = \sqrt{\frac{\sum_{i=1}^N (CAR_i - \overline{CAR})^2}{N-1}} = 0.110058$								

Since $t_{0.05}(29) = 1.699$, $T = -0.873694$, accept the null hypothesis of $u = 0$, the CAR caused by the announcement of the cash dividend policy in the sample is not significant at the significance level of 5%, that is, the release of the cash dividend policy did not cause a significant decline in the stock price

Table 2. Descriptive statistics of the main variables (cash dividends)

variable	sample	mean	σ	minimum	maximum	t
$CAR(-2, +2)$	30	-0.017556	0.110058	-0.232287	0.311216	-0.873694
$CAR(-1, +1)$	30	-0.009476	0.063001	-0.168633	0.172004	-0.823838
$CAR(-2, -1)$	30	-0.008585	0.048239	-0.108195	0.093524	-0.974793
$CAR(-1, 0)$	30	-0.009008	0.035655	-0.075444	0.081171	-1.383754
$CAR(0, +1)$	30	-0.008978	0.058406	-0.177274	0.132132	-0.841979
$CAR(+1, +2)$	30	-0.000461	0.057306	-0.110764	0.185369	-0.044034

Note: *** ** * indicates that it is significant at the significance levels of 1%, 5%, and 10% respectively

As can be seen from Table 2, the release of the cash dividend policy did not cause significant fluctuations in the stock price.

This may be due to the fact that investors prefer the "transfer" behavior of the company in anticipation of the company's good prospects, and they believe that holding more stocks during periods of relatively low stock prices can obtain capital gains by disposing of stocks after a sharp rise in stock prices in the next few years. Combined with the "semi-compulsory dividend policy" released by China in 2008, if a company wants to obtain refinancing qualifications, it must have accumulated profits distributed in cash in the past three years not less than 30% of the annual distributable profits realized in the past three years, which makes the issuance of "cash dividends" have its special connotation in China: It may indicate that the company lacks funds and hopes to raise funds through refinancing in the future, and the cash dividends issued at the moment are not to convey the signal of good company development, but only to "guarantee qualifications".

This makes the stocks that choose the cash dividend policy not send "positive" news to the market, so after the release of the policy, investors are not very optimistic about the future development prospects of the stock, and the stock price has not risen significantly.

3.2 Impact of Mixed Dividend Announcements on Share Prices

After calculation, the standard deviation of the average CAR of the sample stocks and the CAR of the sample stocks in the 2 days before and after the mixed dividend announcement date is calculated as follows:

Table 3. Standard deviation and T-statistic calculation table for stocks paying mixed dividends during the event window period

Stock code	Company name	Market model	ε_t					CAR
			-2	-1	0	+1	+2	
002117	Tungkong Inc.	$R = 0.0205 + 1.6152 R_M + \varepsilon$	-0.0034	-0.0116	0.0199	-0.0273	-0.0348	-0.0572
603019	Dawning Information Industry	$R = 0.0206 + 1.1200 R_M + \varepsilon$	-0.0151	-0.0278	-0.0245	0.0240	-0.0268	-0.0702
601515	DongFeng Automobile	$R = 0.0104 + 0.8420 R_M + \varepsilon$	-0.0077	-0.0363	0.0376	0.0897	-0.0094	0.0740
601015	Shaanxi Heimaocoking	$R = -0.0208 + 0.7560 R_M + \varepsilon$	0.0266	0.0133	0.0400	0.0091	0.0292	0.1181
002119	Ningbo Kangqiang Electronics	$R = -0.0110 + 0.8666 R_M + \varepsilon$	0.0216	-0.0012	0.0498	0.0670	-0.0314	0.1058
603038	Dongguan Huali Industries	$R = -0.0077 + 1.8795 R_M + \varepsilon$	0.0046	0.0037	-0.0496	0.0231	0.0214	0.0032
600801	Huaxin Cement	$R = 0.0397 + 0.6785 R_M + \varepsilon$	-0.0310	-0.0104	0.0078	-0.0065	0.0513	0.0111
600379	Shaanxi Baoguang Vacuum Electronic Apparatus	$R = -0.0059 + 1.6941 R_M + \varepsilon$	-0.0056	0.0306	0.0375	-0.0005	0.0537	0.1157
002287	Tibet Cheezheng Tibetan Medicine	$R = -0.0026 + 1.7457 R_M + \varepsilon$	-0.0143	-0.0020	0.0151	0.0170	0.0270	0.0428
600177	Youngor Group	$R = 0.0118 + 0.8550 R_M + \varepsilon$	-0.0039	0.0197	0.0227	-0.0007	-0.0117	0.0262
601689	Ningbo Tuopu Group	$R = -0.0128 + 0.9474 R_M + \varepsilon$	0.0017	-0.0072	0.0343	0.0048	-0.0103	0.0233
603225	Xinfengming Group	$R = -0.0376 + 0.1753 R_M + \varepsilon$	0.0412	0.0215	0.0730	0.0501	0.0399	0.2258
603156	Hebeiyangyuan Zhihui Beverage	$R = 0.0350 + 1.6140 R_M + \varepsilon$	-0.0186	0.0235	0.0534	0.0126	-0.0363	0.0345
603089	ADD Industry (Zhejiang)	$R = 0.0022 + 0.4196 R_M + \varepsilon$	-0.0130	-0.0494	0.0191	-0.0147	0.0011	-0.0569
603088	JDM JingDa Machine (Ningbo)	$R = -0.0166 + 1.2790 R_M + \varepsilon$	-0.0053	0.0768	0.0293	-0.0105	-0.0167	0.0737
603106	Cashway Fintech	$R = -0.0210 + 1.6533 R_M + \varepsilon$	0.0061	0.0406	0.0376	0.0072	0.0085	0.0999
603027	Qianhe Condiment And Food	$R = 0.0382 + 0.7525 R_M + \varepsilon$	-0.0544	-0.0300	-0.0280	0.0190	-0.0087	-0.1022
300272	Canature Health Technology Group	$R = 0.0156 + 1.7853 R_M + \varepsilon$	-0.0187	-0.0069	0.0157	-0.0402	-0.0052	-0.0552
600500	Sinochem International Corporation	$R = 0.0096 + 1.3162 R_M + \varepsilon$	0.0025	-0.0076	-0.0100	-0.0107	-0.0222	-0.0480
603638	Yantai Eddie Precision Machinery	$R = 0.0183 - 0.0324 R_M + \varepsilon$	0.0283	-0.0015	0.0244	-0.0331	-0.0184	-0.0003
603278	Shandong Daye	$R = -0.0031 + 0.8156 R_M + \varepsilon$	0.0189	-0.0086	0.0182	-0.0218	-0.0008	0.0059
603319	Hunan Oil Pump	$R = -0.0251 + 0.3039 R_M + \varepsilon$	0.0697	-0.0059	-0.0256	0.0169	0.0236	0.0787
603499	Shanghai Sunglow Packaging Technology	$R = -0.0036 + 0.4665 R_M + \varepsilon$	-0.0067	0.0467	-0.0258	0.0052	0.0090	0.0284
603660	Suzhou Keda Technology	$R = 0.0053 + 1.2901 R_M + \varepsilon$	-0.0128	0.0113	-0.0740	-0.0160	-0.0139	-0.1053
603595	Zhejiang Tony Electronic	$R = -0.0081 + 1.4214 R_M + \varepsilon$	0.0477	-0.0096	-0.0076	0.0248	-0.0053	0.0500
603336	Great-Sun Foods	$R = 0.0346 + 0.7391 R_M + \varepsilon$	-0.0582	0.0405	-0.0125	-0.0231	-0.0526	-0.1059
603313	Healthcare	$R = 0.0093 + 0.9087 R_M + \varepsilon$	0.0137	-0.0038	0.0684	-0.0107	-0.0310	0.0366
603580	AA Industrial Belting (Shanghai)	$R = 0.0019 + 0.4391 R_M + \varepsilon$	0.0152	-0.0008	0.0013	0.0350	-0.0061	0.0445
603518	Jinhong Fashion Group	$R = -0.0135 + 1.3338 R_M + \varepsilon$	0.0230	0.0033	0.0124	0.0277	0.0083	0.0747
603387	Getein Biotech, Inc.	$R = 0.0036 + 1.7734 R_M + \varepsilon$	-0.0323	0.0595	-0.0008	-0.0154	0.0706	0.0818
603601	Chongqing Zaisheng Technology Corp	$R = -0.0045 + 0.8542 R_M + \varepsilon$	0.0174	-0.0164	0.0037	0.0056	0.0076	0.0178
603260	Hoshine Silicon Industry	$R = 0.0066 + 1.5155 R_M + \varepsilon$	-0.0093	0.0327	-0.0111	-0.0063	0.0063	0.0123
603266	Ningbo Tianlong Electronics	$R = -0.0010 + 1.3572 R_M + \varepsilon$	-0.0470	0.0160	0.0008	-0.0118	-0.0053	-0.0472
603617	Junhe Pumps Holding	$R = -0.0026 + 0.8441 R_M + \varepsilon$	0.0227	0.0419	0.0182	0.0570	-0.0462	0.0935
603633	Shanghai Laimu Electronics	$R = 0.0047 + 1.3836 R_M + \varepsilon$	-0.0212	0.0050	-0.0247	0.0166	0.0097	-0.0146
The CAR of the sample stocks over the window period								
$\frac{\sum_{i=1}^N CAR(-2,2)}{N} = 0.023291$								
The standard deviation of the CAR of the sample stock over the window period								

$$S = \sqrt{\frac{\sum_{i=1}^N (CAR_i - \overline{CAR})^2}{N-1}} = 0.073180$$

Since $t_{0.05}(34) = 2.032$, $T = 1.882871$ accept the null hypothesis of $u = 0$, the CAR caused by the announcement of the mixed dividend policy in the sample is not significant at the significance level of 5%, that is, the release of the mixed dividend policy does not cause a significant increase in the stock price.

Table 4. Descriptive statistics of the main variables (mixed dividends)

variable	sample	mean	σ	minimum	maximum	t
$CAR(-2, +2)$	35	0.023291	0.073180	-0.105922	0.225773	1.882871*
$CAR(-1, +1)$	35	0.024539	0.052727	-0.078638	0.144641	2.753367***
$CAR(-2, -1)$	35	0.006630	0.036895	-0.084414	0.071562	1.063149
$CAR(-1, 0)$	35	0.017027	0.043400	-0.062641	0.106093	2.321011**
$CAR(0, +1)$	35	0.017399	0.046278	-0.089966	0.127306	2.224259**
$CAR(+1, +2)$	35	0.006774	0.039735	-0.075746	0.090026	1.008546

Note: *** ** * indicates that it is significant at the significance levels of 1%, 5%, and 10% respectively

As can be seen from Table 3, the stock price showed an upward trend at a significant level of 5% on the day before the release of the mixed dividend policy, and on the first day after the release of the mixed dividend policy, the stock price also rose significantly at the significant level of 5%. This suggests that the disclosure of the mixed dividend policy will increase stock prices, there is a "signaling effect" in China's capital market, and Chinese investors are optimistic about the message conveyed by the decision of companies to implement a mixed dividend policy. At present, China's capital market is more keen on stock speculation, investors will pay close attention to the dividend distribution announcement of high stock dividend, and buy before the record date or after the ex-dividend in order to earn excess returns when the stock price rises. This irrational phenomenon of "buying low and selling high" in order to obtain excess returns is very widespread in China, and some investors buy stocks not for value investment, but for short-term speculation.

At the same time, the stock price rose significantly the day before the release of the mixed dividend policy, which indicates that there is information leakage in China's capital market, that is, investors have this information and make corresponding decisions the day before the announcement date of the dividend plan, which shows that China's capital market is not a strong and effective capital market.

3.3 Impact of Non-dividend Announcements on Share Prices

After calculation, the standard deviation of the average CAR of the sample stocks and the CAR of the sample stocks in the 2 days before and after the non-dividend announcement date is calculated as follows:

Table 5. Standard deviation and T-statistic calculation table for stocks paying non-dividend during the event window period

Stock code	Company name	Market model	ε_t					CAR
			-2	-1	0	+1	+2	
600202	Harbin Air Conditioning	$R = -0.0228 + 1.5279 R_M + \varepsilon$	0.0582	0.0258	0.0699	-0.0090	0.0853	0.2303
600222	Henan Taloph Pharmaceutical	$R = 0.0167 + 1.7719 R_M + \varepsilon$	-0.0875	-0.0384	-0.0126	-0.0106	-0.0083	-0.1574
600203	FUJIAN FURI ELECTRONICS	$R = -0.0138 + 1.3868 R_M + \varepsilon$	-0.0168	-0.0471	0.0205	0.0779	0.0517	0.0861
600198	Datang Telecom Technology	$R = 0.0368 + 1.0085 R_M + \varepsilon$	-0.0111	0.0114	-0.0820	-0.0217	-0.0373	-0.1406
600213	Yangzhou Yaxing• Motor Coach	$R = -0.0192 + 1.4974 R_M + \varepsilon$	0.1268	0.1183	0.1030	0.0508	-0.0750	0.3239
600191	Baotou Huazi Industry	$R = -0.0131 + 1.9545 R_M + \varepsilon$	0.0269	-0.0345	0.0533	0.0577	0.1001	0.2035
000016	KONKA GROUP	$R = -0.0065 + 1.6755 R_M + \varepsilon$	-0.0078	0.0099	-0.0058	-0.0044	0.0053	-0.0028
600197	XINJIANG YILITE INDUSTRY	$R = -0.0243 + 2.2533 R_M + \varepsilon$	0.0737	0.0056	-0.0891	0.0224	0.0126	0.0251
000404	Changhong Huayi Compressor	$R = -0.0065 + 0.7708 R_M + \varepsilon$	0.0013	0.0062	0.0041	0.0072	0.0062	0.0250
000049	Shenzhen Desay Battery Technology	$R = 0.0175 + 0.8389 R_M + \varepsilon$	0.0869	0.0106	0.0704	-0.0264	-0.0055	0.1361
000100	Technology Group Corporation	$R = 0.0127 + 1.0711 R_M + \varepsilon$	-0.0114	-0.0119	0.0048	0.0261	-0.0004	0.0072
600211	Tibet Pharmaceuticals	$R = -0.0062 + 0.9922 R_M + \varepsilon$	0.0429	0.0542	0.1037	0.0203	0.0448	0.2660
000488	Shandong Chenming Paper	$R = -0.0338 + 1.0173 R_M + \varepsilon$	0.0287	0.0223	0.0217	0.0243	0.0241	0.1212
000521	Changhong Meiling	$R = -0.0070 + 1.1614 R_M + \varepsilon$	0.0050	0.0042	-0.0056	-0.0036	0.0085	0.0084
000513	Livzon Pharmaceutical Group	$R = -0.0198 + 1.3201 R_M + \varepsilon$	0.0139	0.0393	0.0032	0.0844	0.0265	0.1672
600192	Lanzhou Greatwall Electrical	$R = 0.0082 + 1.8764 R_M + \varepsilon$	-0.0148	-0.0035	-0.0151	0.0049	-0.0001	-0.0286
000055	China Fangda Group	$R = 0.0028 + 1.2400 R_M + \varepsilon$	-0.0031	0.0588	0.0076	0.0081	0.0035	0.0749
000050	Tianma Microelectronics	$R = 0.0094 + 2.1958 R_M + \varepsilon$	-0.0043	-0.0246	0.0027	-0.0157	-0.0242	-0.0660
000059	North Huajin Chemical Industries	$R = -0.0348 + 0.8905 R_M + \varepsilon$	0.0146	0.0183	-0.0198	0.0025	-0.0040	0.0116
000423	Dong-E-E-Jiao	$R = -0.0094 + 0.7888 R_M + \varepsilon$	0.0271	0.0233	0.0505	0.0392	0.0416	0.1816
600195	China Animal Husbandry Industry	$R = 0.0179 + 0.9569 R_M + \varepsilon$	-0.0503	-0.0508	0.0064	-0.0566	-0.0125	-0.1638
000012	CSG Holding	$R = -0.0084 + 1.0361 R_M + \varepsilon$	0.0310	0.0157	-0.0053	0.0483	-0.0180	0.0716
000070	Shenzhen SDG Information	$R = 0.0579 + 2.2837 R_M + \varepsilon$	-0.0744	0.0054	-0.0998	-0.0224	-0.0943	-0.2856
600201	Jinyu Bio-technology	$R = -0.0017 + 0.7334 R_M + \varepsilon$	0.0105	0.0207	0.0258	0.0016	-0.0026	0.0560
600216	Zhejiang Medicine	$R = -0.0053 + 1.2182 R_M + \varepsilon$	-0.0005	0.0370	0.0157	0.0925	0.0350	0.1797
000400	XJ Electric	$R = 0.0070 + 0.3511 R_M + \varepsilon$	-0.0086	-0.0156	0.0386	0.0284	-0.0224	0.0204
000403	Pacific Shuanglin Bio-pharmacy	$R = -0.0065 + 0.7335 R_M + \varepsilon$	0.0153	0.0279	0.0369	0.0403	-0.0081	0.1123
000519	North Industries Group Red Arrow	$R = -0.0002 + 1.1550 R_M + \varepsilon$	0.0955	0.0063	0.0684	-0.0056	0.0087	0.1733
000023	SHENZHEN UNIVERSE (GROUP)	$R = 0.0081 + 1.6600 R_M + \varepsilon$	-0.0525	0.0347	-0.0518	-0.0252	0.0181	-0.0768
The CAR of the sample stocks over the window period								
$\frac{\sum_{i=1}^N CAR(-2,2)}{N} = 0.053789$								
The standard deviation of the CAR of the sample stock over the window period								
$S = \sqrt{\frac{\sum_{i=1}^N (CAR_i - \overline{CAR})^2}{N-1}} = 0.134477$								

As can be seen from Table 5, on the first day after the release of the non-dividend policy, the stock price showed an upward trend at a significant level of 5%, which indicates that Chinese investors are optimistic about the future development prospects of non-dividend-paying companies. The retained earnings of companies generally meet the financing needs of companies first, and then distribute investors, and companies that implement the policy of non-distribution dividends will keep funds within the company and increase the available funds of companies, which is conducive to the subsequent development of companies. From another point of view, there is a financing demand for companies, indicating that companies may exist investment projects that will bring them huge profits in the future and the development of companies has a lot of room for growth. Especially in the context of the "semi-compulsory dividend" policy, it still insists on not issuing dividends and abandoning the

qualification of "refinancing", reflecting that except for some insolvent and financially troubled companies, most of these companies can maintain operations and reinvestment only by internal financing. They do not need to meet capital needs through stock market financing, and have strong economic strength.

Table 6. Descriptive statistics of the main variables (non-dividend)

variable	sample	mean	σ	minimum	maximum	t
CAR(-2, +2)	29	0.053789	0.134477	-0.285603	0.323907	2.227056**
CAR(-1, +1)	29	0.037428	0.084162	-0.116876	0.272022	2.476080**
CAR(-2, -1)	29	0.022242	0.072055	-0.125866	0.245098	1.718701
CAR(-1, 0)	29	0.022408	0.066288	-0.094455	0.221249	1.882093
CAR(0, +1)	29	0.026057	0.067015	-0.122267	0.153766	2.164848**
CAR(+1, +2)	29	0.020511	0.059635	-0.116714	0.157852	1.915005

Institutional investors or individuals engaged in arbitrage activities are more inclined to analyze the fundamental information of the companies, look for stocks that are seriously undervalued to buy in large quantities, and then sell them when the stock price rises to its normal or higher level, so as to make a profit, such investors are less concerned about whether their target companies pay dividends, and they pay more attention to the fundamentals and future development prospects of the companies (most companies that pay non-dividend policies have better future development prospects in china). With the purchase of the stock of its target company by institutional or individual investors who carry out arbitrage activities, according to supply and demand, the price of the stock in the market will inevitably rise or even exceed its actual value, so that the holder obtains excess returns.

Therefore, the signal that "companies do not distribute dividends" may convey to investors information such as strong financial strength, good investment opportunities and development prospects, and the value of stocks may be underestimated, thus prompting investors to buy stocks, resulting in a significant increase in the stock price of the company on the second day after the release of the non-distribution policy.

4. Conclusion

The relevant research on the impact of dividend distribution policy on stock price provides corresponding guidance for Chinese listed companies to formulate dividend policies that are conducive to their own development. With the continuous improvement and development of China's capital market and the release of corresponding national policies, the internal mechanism of dividend policy on stock prices is constantly changing. This paper explores the impact of cash dividends, mixed dividends, and non-dividend policies on the stock price of companies through the event research method (due to the small number of companies that simply issue stock dividends, this article will not discuss), The conclusion shows that the release of the cash dividend policy has not caused a significant increase or decrease in stock prices, and China's unique "semi-compulsory dividend policy" makes the information conveyed by the disclosure of China's cash dividend policy have a new connotation different from the conclusions of Western scholars. The release of the Mixed Dividend Policy and the Non-Dividend Policy caused a significant increase in the stock price, and the average CAR (-2,2) of the shares of companies that release the Non-Dividend Policy was the highest.

At the same time, there are some deficiencies in the research, because this paper only selects a total of 94 stocks in the Manufacturing industry of the Shanghai and Shenzhen markets as a research sample, due to the small sample and concentrated in one industry, the research conclusions have contingency, and this paper only explores the short-term impact of dividend policy disclosure on stock prices, and does not conduct relevant research on the long-term impact of events on stocks. It is hoped that the sample size will be increased in subsequent studies and the event window will be lengthened to explore the long-term reaction of the disclosure of dividend policies to the impact of

stock prices. At the same time, this paper ignores the measurement of the degree of fit of the linear regression line to the observed value, which may have impact on the research conclusions to some extent.

References

- [1] M. H. Miller, & F. Modigliani. Dividend policy, growth, and the valuation of shares. the Journal of Business, 1961, 34(4), 411-433.
- [2] G. Charest, Dividend information, stock returns and market efficiency-II. Journal of financial Economics, 1978, 6(2-3), 297-330. Doi: 10.1016/0304-405X(78)90033-8.
- [3] J. A. Brickley. Shareholder wealth, information signaling and the specially designated dividend: An empirical study. Journal of Financial Economics, 1983,12(2), 187-209.Doi: 10.1016/0304-405X(83)90035-1
- [4] M. J.Brennan. Taxes, market valuation and corporate financial policy. National tax journal, 1970, 23(4), 417-427. Doi: 10.1086/NTJ41792223
- [5] S.Q., Zhang, D.Z., Han. An Empirical Study on Dividends and Allotment Effects in Shanghai Stock Market.Prediction,1997(03):29-34+6.
- [6] B.X., Tian, J.Q., Wang. Market Response of Refinancing and Dividend Policy Based on Investor Perspective. China Circulation Economy,2016, 30(11):93-100.
- [7] C., Zhang. Investors' Dividend Preference: Cash or Stock ?——Based on the Empirical Test of China's A-share Listed Companies from 2005 to 2017[C].China Quantitative Economics Association, Yunnan University of Finance and Economics. Quantitative Economics in the 21st Century (Volume 19).China Quantitative Economics Society, Yunnan University of Finance and Economics: Chinese Society of Quantitative Economics, 2018:257-275.
- [8] Q.Y., Niu. Analysis of the influencing factors of dividend policy and its correlation with stock price volatility [D].Shandong University, 2019.
- [9] X.F., Zhao. Research on the Information Connotation of Increase in Cash Dividends of Listed Companies under Semi-Mandatory Dividend Policy [D].Xiamen University, 2014.
- [10]L.H., Zhan. Analysis on the impact of cash dividends on the value of listed companies [D].Southwestern University of Finance and Economics, 2016.
- [11]Z.F., Xie. Double Pandering and Cash Dividend Stability: An Empirical Study Based on China's A-share Listed Companies. Accounting Research, 2019(11):78-84.