Market Effect of Dividend Differentiated Tax Reduction Policy

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Abstract. In September 2015, China issued a differentiated tax reduction policy for corporate dividends. In this paper, we employ the Modified Event Study Methodology to study the response of China's capital market to the dividend differentiated tax reduction policy in 2015. The empirical results show that in the event window period, the cumulative raw return of the whole market is significantly positive, indicating that the differentiated tax reduction policy is regarded as good news by investors. We further find that compared with companies with weak dividend ability, low dividend level, and high stock liquidity, companies with solid dividend ability, high dividend level and low stock liquidity have a better market response. The cumulative raw return is higher. By observing the market reaction to the policy release, this paper provides new empirical evidence for the effectiveness of China's dividend tax policy.

Keywords: Dividend · Individual Income Tax · Market Response

1 Introduction

According to China's tax system, individual investors should pay personal income tax on dividends but not on capital gains. The dividend distribution describes the tax differential between dividends and capital gains as a "tax penalty" [6]. The tax differential theory believes that capital gains have tax advantages, so the optimal dividend policy of a company is to distribute less or no dividends. In addition, listed companies have already paid corporate income tax on profits before distributing dividends; after rewards, shareholders are required to pay individual income tax on dividends again—double taxation drawback in collecting dividend tax [12]. For the above reasons, Chinese listed companies have tended to pay less or even no dividends for many years.

In 2015, the Ministry of Finance, the State Administration of Taxation, and the China Securities Regulatory Commission jointly issued the "Notice on Issues Concerning Differential Individual Income Tax Policies on Dividends of Listed Companies" (Finance and Tax [2015] No. 101 document). This tax policy adjustment was carried out based on Finance and Tax [2012] No. 85 document, which stipulated that the dividends of individual investors who hold shares for more than one year were exempt from personal income tax. That is, the tax rate was reduced to 0.

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Taxation on dividends increases financial revenue and guides the company's economic policy and investor behavior. The dividend differentiated tax reduction policy encourages listed companies to pay dividends and guide investors to make long-term investments actively. If investors recognize the policy intention, the promulgation of the policy will be regarded as good news, resulting in positive stock returns. Therefore, observing the market response to the policy release and analyzing various factors affecting the market response can provide empirical evidence for the implementation and improvement of the policy [13].

Since the adjustment in 2015 was smaller than before, the previous literature usually focused on the economic impact of the dividend tax policy in 2005 or 2012. This paper aims to make up for this gap, studying China's capital market response to the dividend differentiated tax reduction policy in 2015 to provide new empirical evidence for the effectiveness of China's dividend tax policy.

2 Theoretical Analysis and Research Assumptions

Nam et al. (2010) [7]. William and Moser (2007) [9] report that the reduction of dividend tax rate makes companies significantly increase dividends and are more inclined to formulate stable dividend policies. The dividend differentiated tax reduction policy reduces the tax rate of investors holding shares for more than one year to 0. We believe that the exemption of dividend tax for investors who hold shares for more than one year means the absolute elimination of the "tax penalty", which will directly increase investors' after-tax income [13]. In addition, executives who usually hold shares for more than one year have a solid motivation to formulate a dividend policy beneficial to their interests, which will lead to an increase in dividends [2–4]. Studies have found that dividends can reduce the cash flow held by managers, thereby preventing managers from wasting cash on low-yield projects, which could alleviate agency conflict between managers and shareholders [5]. Therefore, companies with higher dividends usually have a higher return on investment. After the promulgation of the dividend differentiated tax reduction policy, investors will react to the company's value based on the policy that may lead to changes in the company's dividend policy. That is, the policy will increase the company's dividends to increase the company's stock price, resulting in a significant positive market reaction during the promulgation of the policy. This lead to the first hypothesis:

H1: During the promulgation of the dividend differential tax reduction policy, China's stock market has a significant positive market reaction.

For the dividend differential tax reduction policy, the market responses of listed companies with different characteristics will be different. Xie Deren (2013) [11] argues that the essence of corporate dividends is shareholders legally exercising the right of residual claim to distribute corporate cash. He adds that the necessary and sufficient condition for a company to have the ability to distribute dividends is to have both positive retained earnings and free cash origin. Therefore, listed companies with positive retained earnings and abundant internal free cash flow can be defined as companies with solid

dividend ability, which are more likely to distribute dividends or increase the level of dividends payment following the tax reduction policy. In addition, companies that have paid more dividends in previous years can be defined as companies with high dividend levels. Investors will have higher expectations for the dividends of these companies following the policy so that these companies have a more favorable market response [10]. These lead to the second and the third hypotheses:

H2: During the promulgation of the dividend differentiated tax reduction policy, compared with companies with weak dividend ability, companies with solid dividend ability have a better market response.

H3: During the promulgation of the dividend differentiated tax reduction policy, compared with companies with low dividend levels, companies with high dividend levels have a better market response.

Capital gains refer to the income balance from selling stocks, bonds or real estate after deducting their book value. Brave et al. (2005) [1] report that when the dividend tax rate is higher than the capital gains tax rate, the company is more inclined to distribute profits through stock repurchase. The tax differential between capital gains and dividends in China has existed for a long time, which may be one of the reasons why china's stock market is dominated by short-term and medium-term investors and why listed companies in China have tended to pay less or even no dividends for many years. The dividend differential tax reduction policy exempts the dividend tax of individual investors who have held shares for more than one year, eliminating the tax differential between capital gains and dividends faced by long-term investors. The companies with lower stock liquidity have a higher proportion of long-term investors, so they are more likely to improve the dividend payment level under the tax reduction policy. Therefore, investors will prefer companies with low stock liquidity. This leads to the fourth hypothesis:

H4: During the promulgation of the dividend differentiated tax reduction policy, compared with companies with high stock liquidity, companies with low stock liquidity have a better market response.

3 Research Design

3.1 Sample Selection

Our sample is all A-share listed companies in China. Stock returns and financial data are from the CSMAR database. Since the event occurred in September 2015, investors may judge the company's situation based on the financial data in 2014. Therefore, the data of independent variables and control variables we use are all in 2014, and the dividends data span from 2012 to 2014. The following firms are excluded: (1) financial listed firms; (2) firms with missing data. (3) S, ST, $*$ ST, S $*$ ST, PT, etc.; (4) firms with material, corporate events, such as additional share allotment, major asset restructuring, financial statements announcements, in the eleven-day event window surrounding the Sep. 7th 2015 event date. This leaves a final sample of 1,637 companies. All the continuous variables are winsorized with the upper and lower 1 quartile.

3.2 Modified Event Study Methodology

The dividend differentiated tax reduction policy was designed to affect the entire economy, not specific firms, and to affect all firms at once. This motivates our first examining the stock market's raw return on and around the event date instead of subtracting it to form abnormal returns. Second, we expect different firms to be differently affected by the dividend differentiated tax reduction policy. We investigate this by comparing the returns of firms with different characteristics. These exercises use the tests Schwert (1981) [8] recommends for event studies of regulatory changes. We set September 7, 2015, as the event date, and five trading days before and after the event date are selected as the event window.

3.3 Model Setting and Variable Definition

We explore heterogeneity in the reactions of different firms to the announcement by running regressions explaining either firm-level cumulative raw returns. The following models are constructed to verify hypotheses H2, H3 and H4:

$$\mathrm{CRR_{i,t}} = \alpha_0 + \alpha_1\,\mathrm{Div\_ability_{i,t-1}} + \sum \mathrm{a_i\,Control_{i,t-1}} + \varepsilon_\mathrm{i} \tag{1}$$

$$CRR_{i,t} = \beta_0 + \beta_1 Div\_level_i + \sum \beta_i Control_{i,t-1} + \varepsilon_i \tag{2}$$

$$CRR_{i,t} = \gamma_0 + \gamma_1 Turnover_{i,t-1} + \sum \gamma_i\, Control_{i,t-1} + \varepsilon_i \tag{3}$$

Among them, the dependent variable CRR is the cumulative raw return of each company in the event window. Independent variable Div_ability represents the dividend ability of firms, which is measured by the retained earnings and free cash flow of the year before the announcement (2014). If the retained earnings are positive and the free cash flow per share is higher than the average of all companies, the company has a solid dividend ability, and Div_ability is 1; otherwise, it is 0. Independent variable Div_level represents the level of firms' dividends. If the sum of dividends per share in the three years before the announcement (2012. 2013. 2014) is higher than the average of all companies, the dividend level of the company is high, and Div_level is 1; otherwise, it is 0. The Independent variable Stock_liq represents the stock liquidity of listed companies, measured by the annual turnover rate of listed companies in 2014. If the annual turnover rate is lower than the average of all companies, the stock liquidity is low, and Stock_liq is 1; otherwise, it is 0. Controls represent a series of controlled variables, including Proportion of outstanding shares (OS), Return on equity (ROE), Asset-liability ratio (Lev), Book-to-market value ratio (BM), Proportion of managers holding shares(MS), Industry dummy variables. All variable definitions are detailed in Table 1.

Table 1. Variable Definition

Variable symbol	Description
CRR	Cumulative raw return: The sum of each company's raw return in the event window. The main event window in this paper is (−5, +5), so the cumulative raw return is recorded as CRR (−5, +5).
Div_ability	Dividend ability: If the retained earnings are positive and the free cash flow per share is higher than the average of all firms in the year before the announcement, the dividend ability is solid, and Div_ability is 1; otherwise, it is 0.
Div_level	Dividend level: If the sum of dividends per share in the three years before the announcement is higher than the average of all firms, the dividend level is high, and Div_level is 1; otherwise, it is 0.
Stock_liq	Stock liquidity: If the annual turnover rate in the year before the announcement is higher than the average of all firms, the stock liquidity is high, and Stock_liq is 1; otherwise, it is 0.
OS	The Proportion of outstanding shares: outstanding shares divided by total shares
R0E	Return on equity: Net profit divided by net assets
LEV	Asset-liability ratio: Total liabilities divided by total assets
BM	Book-to-market value ratio: Total assets divided by market value
MS	The Proportion of managers holding shares: Total shares held by managers divided by total shares
Ind	Industry dummy variables

4 Analysis of Empirical Results

4.1 The Reaction of the Market

Table 2 summarizes movement in the market in an eleven-day window [−5, +5], beginning five trading days before the announcement date and ending five trading days after it. The all-China market gains 1.4% in the eleven-day window [−5, +5], which is statistically significantly different from the baseline. Table 2 also shows the fraction of firms gaining versus losing value. 39.4% drop in the 11-day window means nearly 2/3 of the companies have obtained a positive cumulative raw return.

At the same time, to obtain a more intuitive impression, we draw the trend chart of cumulative raw return in the market in the 11-day window, as shown in Fig. 1. The CRR increases abruptly after the announcement. Five trading days after the announcement date (T1–T5), raw return is positive continuously, which are 5.519%, 10.295%, 8.357%, 9.824% and 1.389%, respectively. These results are consistent with investors viewing the dividend differentiated tax reduction policy as positive economic news. Therefore, hypothesis H1 is verified.

Table 2. Stock market reaction

	All firms	
	CRR (−5, +5)	%Negative
All China	1.377***	39.4%

Significance at the 10%, 5%, and 1% level is indicated by *, **, and ***, respectively.

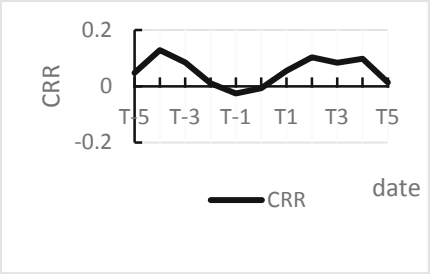

Fig. 1. Cumulative raw return

Table 3. Market Reaction Differentiate by Dividend Ability

	All firms	
	CRR (−5, + 5)	%Negative
Solid Div_ability	2.429***	38.3%
Weak Div_ability	0.369	46.1%

Significance at the 10%, 5%, and 1% level is indicated by *, **, and ***, respectively.

4.2 Comparison Between Firms with Solid Dividend Ability and Firms with Weak Dividend Ability

The firms are divided into solid dividend ability (810) and weak dividend ability (827). Table 3 shows the 11-day window cumulative raw return of firms with solid dividend ability is +2.4% and statistically significant, with only 38.3% of those firms declining. In contrast, the cumulative 11-day window return of firms with weak dividend ability is a statistically insignificant +0.4%, with 46.1% of their stocks dropping. So the dividend ability of listed companies is one of the main factors affecting the market response to the policy. The hypothesis H2 is preliminarily verified.

4.3 Comparison Between Firms with High Dividend Level and Firms with Low Dividend Level

The firms are divided into two groups: high dividend level (617) and low dividend level (1020). Table 4 reports that the high dividend level group rises by a statistically

Table 4. Market Reaction Differentiate by Dividend level

	All firms	
	CRR (−5, + 5)	%Negative
High Div_level	3.037***	34.5%
Low Div_level	0.391	47.1%

Significance at the 10%, 5%, and 1% level is indicated by *, **, and ***, respectively.

Table 5. Market Reaction Differentiate by stock liquidity

	All firms	
	CRR (−5, + 5)	%Negative
High Stock_liq	0.789*	43.6%
Low Stock_liq	1.803***	32.5%

Significance at the 10%, 5%, and 1% level is indicated by *, **, and ***, respectively.

significant 3.0%, with only 34.5% of its component stocks declining in the 11-day window. In contrast, the low dividend level group registers an insignificant 0.4% rise, with 47.1% of its component stocks falling.

Overall, these findings are consistent with the market response to the firms with high dividend level being more positive, which preliminarily verifies hypothesis H3.

Comparison between firms with low stock liquidity and firms with high stock liquidity.

The firms are divided into low stock liquidity (968) and high stock liquidity (669). Table 5 reports that the low stock liquidity group rises 1.8%, significant at a 1% level, with only 32.5% of its component stocks declining in the 11-day window. In contrast, the high stock liquidity group registers a 0.8% rise, with 43.6% of its component stocks dropping. These findings are consistent with the more favorable market response of firms with low stock liquidity, which preliminarily verifies hypothesis H4.

5 Firm-Level Regressions

A multivariate regression analysis explores the relationship between stock price reactions and firm characteristics in more excellent detail (Brown et al., 2007). We regress these firms' event window cumulative raw returns on firms' characteristics, including Dividend Ability, Dividend Level and Stock Liquidity.

Table 6 reports the regression results. In Col. 1, Div_ability attracts positive coefficients significant at 5%. Col. 2 shows the coefficient on Div_level is 0.018, and significant at 1%. In Col. 3, Stock_liq attracts negative coefficients significant at 10%. Col. 4 adds Div_ability, Div_level, and Stock_liq, whose results are similar to the separate regression results.

Overall, these findings further verify the hypotheses H2, H3 and H4.

Table 6. Regression Result on Firm-level

variable	(1)	(2)	(3)	(4)
	CRR (−5, +5)	CRR (−5, +5)	CRR (−5, +5)	CRR (−5, +5)
Div_ability	0.0100** (1.99)			0.0085* (1.69)
Div_level		0.0182*** (3.42)		0.0163** (3.03)
Stock_liq			−0.0085* (−1.74)	−0.0060 (−1.22)
Controls	Yes	Yes	Yes	Yes
_cons	−0.0363 (−1.54)	−0.0383 (−1.63)	−0.026 (−1.81)	−0.0311 (−1.58)
N	1637	1637	1637	1637
Adj R2	0.043	0.047	0.042	0.049
F-test	3.93	4.25	3.89	4.11

Significance at the 10%, 5%, and 1% level is indicated by *, **, and ***, respectively.

6 Conclusions

This paper employs the Modified Event Study Methodology to study the response of China's capital market to the dividend differentiated tax reduction policy in 2015. The empirical results show that during the promulgation of the policy, the cumulative raw return of the whole market is significantly positive, indicating that the differentiated tax reduction policy is regarded as good news by investors. We further find that compared with companies with weak dividend ability, low dividend level, and high stock liquidity, companies with solid dividend ability, high dividend level and low stock liquidity have a better market response. That is, the cumulative raw return is higher.

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