

Discussion on Influence of Cash Dividend Policies on Stock Price by Taking MengDian HuaNeng Thermal Power Corporation Limited as an Example

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Abstract.As one of the important forms for dividend distribution, cash dividend is the main method for return to shareholders. China Securities Regulatory Commission has released a series of related measures since 2008 to encourage listed companies to adopt long-term dividend policies and guide listed companies to conduct cash dividend as far as possible. The No. 3 directive for supervision on listed companies by China Securities Regulatory Commission standardized cash dividend in 2013. By taking MengDian HuaNeng Thermal Power Corporation Limited stocks as the example, this article investigates the influence of different dividend policies of different years on stock price based on the signal transmission dividend theory by utilizing the event study analysis, in order to verify if the management layer utilizes dividend policy signal transmission to disclose information to investors, in order to illustrate that the cash dividend distributed by companies indeed affects investors' decision on investment.

Key Words: MengDian HuaNeng Thermal Power Corporation Limited; cash dividend; signal transmission theory

1 Overview on Dividend Distribution Policies

Dividend policies refer to the distribution selection on the use of the net profit after tax of companies, dividend payment to investors or retaining for investment in the next stage, with the mutual relation of waning and waxing. As one of the three main financial management pillars for companies, dividend policy keeps the logistic consistency between company financing and investment activities. As an essential process for company finance, reasonable dividend policy not only helps companies acquire capital source with relatively less capital, but also establishes preferable company image, to retain existing investors and attract potential investors and creditors who are holding a wait-and-see attitude. It helps companies seize long-term stable opportunities for growth by keeping investment enthusiasm of investors.

1.1 Contents of Dividend Distribution Policy

Dividend policies mainly include contents on the following five aspects: Firstly, the selection of dividend payment policy, mainly including: fixed dividend rate policy, residual dividend policy, constant dividend policy and normal dividend and extra dividend policy. Secondly, the selection on dividend payment rate level, i.e., the percentage of dividend per stock and net income per stock of ordinary shares. Thirdly, dividend payment rate growth mode, i.e., the determine on the growth speed of the dividend of companies in the future, which restrains the dividend payment rate level of enterprises in certain period in the future. Fourthly, dividend payment form,

mainly including stock dividend, cash dividend, property dividend, liability dividend, stock repurchase and stock split. Fifthly, dividend payment procedures, including the determination of the number of dividend payment within certain accounting period as well as dividend declaration date, recording date, ex-right date and payment date.

1.2 Dividend Payment Method

Dividend refers to the return on investment of investors acquired from company net profit by taking the proportion of the investment volume as the distribution scale. The concepts of bonus, stock dividend and dividend are often mixed in actual investment field. Actually, there are certain differences among them. Stock dividend involves in preferred stockholders, who acquire scheduled income from operation from enterprises according to the proportion agreed in advance. Bonus refers involves in the shareholders of ordinary stocks after deduction of stock dividend, who acquire unscheduled income from companies. Both stock dividend and bonus are income from investment acquired by shareholders from companies, which are called by a joint name of dividend

There are some differences on selection of dividend payment forms between China and western countries. In western countries, cash dividend and stock repurchase are the two most common payment methods, with abundant related theories and researches conducted by scholars. As an important reverse purchase method, stock repurchase can also be applied to company capital structure optimization. Because companies have to pay for relatively high cost for equity financing; moderate amount of stock repurchase in condition of sufficient capital can reduce financing cost and increase stock price. However, compared with western countries, listed companies in our country often adopt stock dividend and cash dividend as dividend payment methods, and other methods such as property dividend and liability dividend are seldom adopted by listed companies in practice; stock repurchase is prohibited in principle. The dividend payment forms in our country are generally divided into the following four methods: (1) cash dividend distribution only; (2) giving bonus stock only; (3) both cash dividend distribution and bonus stock; (4) no distribution. In which (2) giving bonus stock only includes “increase by transferring” and “giving bonus”.

2 Signal Transmission Theory

The signal transmission theory is also known as the dividend information connotation hypothesis. The theory broadens the hypothesis of the MM theory of the equivalent information owned by shareholders and managers; on this basis, the theory regards that there is information dissymmetry between external investors and administration authority in imperfect market, and the latter occupies more and more complete internal information about company development anticipation. Dividend policy is a type of means which is utilized by the managers to transmit the internal information mastered by them. In condition that they hold a positive attitude on the prospect of the company and anticipate a preferable increase in company performance, they tend to notify the information to shareholders and potential investors in a hidden way with extra dividend; on the contrary, they often maintain or even reduce existing dividend

payment level; i.e., sending bad signal to shareholders and potential investors. Therefore, dividend delivers the information related to the profit and loss conditions and levels of companies in the future to certain extent; therefore, the publishing of dividend policy inevitably gives rise to the fluctuation on stock price to certain extent. In condition of increasingly rise on company dividend payment level, the stock price will increase as well; on the contrary, in condition of the reduction on company dividend payment level, the stock price will be lowered correspondingly.

3 Current Situation of Cash Dividend Distribution of Listed Companies in Our Country

Western developed countries mainly adopt cash dividend and stock repurchase as the main dividend payment methods. However, in our country, in addition to cash dividend and stock dividend, dividend payment methods also include distribution, reversion, increase by transferring and distribution by transferring. It sufficiently reflects the diversification on profit distribution demand due to diversified equity structures in our country. This article intends to conduct analysis on dividend distribution policies of recent ten years in our country by adopting the data related to dividend distribution of listed companies in A stock market during 2004 – 2012. According to analysis result, the stock dividend has been on a drop in recent ten years, with grown cash dividend, showing the characteristics and development history of dividend distribution in our country. Please refer to Table 1 for details.

Table 1: Table of Dividend Distribution Policies of Listed Companies of A Stock Market during 2004-2012

Year Project	2004	2005	2006	2007	2008	2009	2010	2011	2012
Listed companies of A stock market	1349	1355	1398	1507	1581	1678	2041	2320	2472
Number of st companies	45	36	64	69	29	34	41	17	27
Number of effective listed companies in A stock market	1304	1319	1334	1438	1552	1644	2000	2303	2445
Companies with bonus distribution	691	587	684	759	800	959	1263	1559	1760
Proportion	52.99	44.50	51.27	52.78	51.55	58.33	63.15	67.69	71.98
Companies without bonus distribution	613	732	650	679	752	685	737	744	685
Proportion	47.01	55.50	48.73	47.22	48.45	41.67	36.85	32.31	28.02

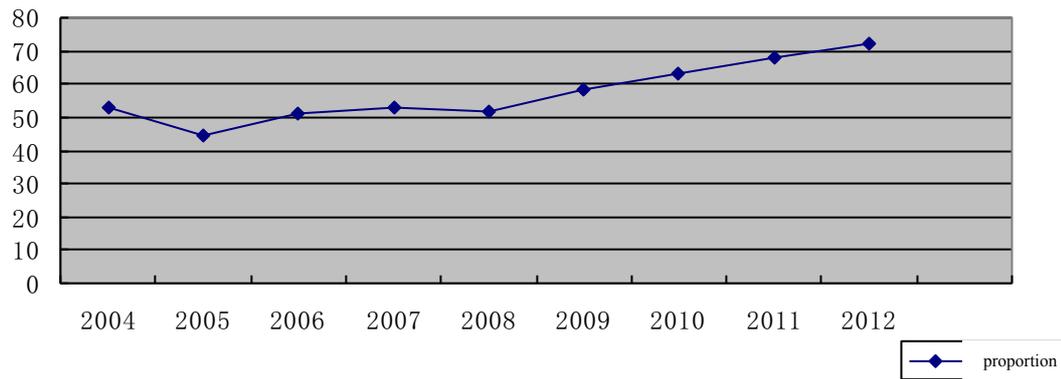


Figure 1: Proportion of Listed Companies in A Stock Market with Cash Dividend in Total Number of Listed Companies in A Stock Market during 2004-2012

4 Empirical Research

4.1 Sample Selection and Data Source

(1) Research on Sample Selection

By taking the data related to dividend distribution policies of MengDian HuaNeng Thermal Power Corporation Limited listed in Shanghai Stock Market during 2008 – 2012, this article selects “rate of return per day on reinvestment of cash bonus” and “market return rate per day on reinvestment of cash bonus (equal weight average method)” as the indexes for analysis, to conduct statistical test on if the distribution of cash dividend has influence on company stock price in accordance with the signal transmission theory by calculating the average daily return rates of MengDian HuaNeng Thermal Power Corporation Limited before and after the dividend declaration date and the difference.

(2) Data Source

The data of stock and market return rate indexes of MengDian HuaNeng Thermal Power Corporation Limited in the empirical analysis come from CSMAR database; the company stock price and data of dividend policy declaration come from China Securities Journal and Wind Database. The Stata/SE12.0 statistical analysis software is adopted for data analysis and processing.

4.2 Research Hypothesis

There is serious information asymmetry of listed companies in our country; the utilization of distribution of cash dividend can be utilized to deliver the internal information known by managers to external investors may reduce the information asymmetry to certain extent, in order to relieve the problem of adverse selection. According to dividend policy signal transmission theory, the changes on stock price reflect the influence of the information hidden behind the published dividend policy on stock price. Therefore, the following hypothesis is proposed in this article:

Hypothesis: the distribution of cash dividend is the important factor giving rise to changes in stock price before and after the event date, playing the role of signal transmission, which affects the accumulated excess return.

After the declaration of the dividend distribution scheme of listed companies, the

management authority of listed companies intends to deliver the signal on development information of companies in the future through the declaration, which leads to changes on stock price with the declaration of cash dividend distribution. This article embodies the signal transmission effect through the investigation on accumulated excess return.

4.3 Empirical Research Method

4.3.1 Event Research

This article verifies if the distribution of cash dividend leads to the change of excess abnormal rate of return; i.e., it verifies the conformity of abnormal rate of return caused by distribution of cash dividend by listed companies, in order to judge if the distribution of cash dividend can deliver the attitude on company growth in the future by management authorities to the market; i.e., if the distribution of cash dividend has signal transmission effect.

(1) Determination of Event Date and Selection of Event Window

The stock price of listed companies has certain fluctuation within a period after the dividend policy declaration date. However, the characteristics of the accumulated excess return of changes on stock price cannot be reflected in a real and overall way by only taking the change on stock price after the declaration date into consideration. Therefore, the dividend declaration date is defined as the date of company dividend distribution scheme published on China Securities Journal, i.e., the date for external information users to know the dividend policy for the first time. The change on stock price reflects the responding psychology on the distribution scheme as well as the confidence and anticipation on company development in the future of investors. In addition, due to the lack of standardization of the stock market and the financial information disclosure of listed companies in our country, the distribution scheme of listed companies may be disclosed to a few investors due to the disclosure of internal personnel before the declaration date. The market effect of the acquisition of dividend distribution policy in advance can be reflected by the fluctuation on the stock price several days before the declaration of the distribution scheme. On the other hand, there is generally an effect of market response delay caused by gradual release of the external declaration on stock price. In addition, according to current information release media and broadcasting speed, in general conditions, investors can acquire and master the declaration information on the declaration date and the following two trading days and give response and decision. According to domestic researches on the validity of Chinese stock market, it can be firmly believed that the stock market in our country is a weak efficient market, and the influence of distribution scheme on stock price is mainly embodied on three trading days before the declaration and the declaration date. This article takes the cash dividend distribution scheme declaration date as well as 3 days before and after the day (-3, 3) as the time period of excess abnormal return. The selection of 3 days before and after the declaration date may be not sufficient enough, which has influence on data representative, leading to influence on analysis result accuracy. However, on the other aspect, short period can avoid the influences of other events or declarations caused by changes of macroeconomic environments on changes of stock price, which ensures the cleanness of event window

to certain extent.

(2) Calculation of Accumulated Excess Return (CAR)

The so called accumulated excess return method means the direct calculation of the rate of return every day before and after the declaration date, and calculate the difference between the actual rate of return everyday and the normal rate of return of everyday predicted for individual stock within the declaration period, to judge if there is excess return, in order to determine if the cash dividend policy is beneficial to the increase of the shareholder wealth. In condition that there is excess return, it indicates that the declaration of the dividend policy gives rise to the signal transmission effect; on the contrary, it indicates that the market does not have sufficient response to the event.

The accumulated excess return method is the common method for calculation of excess return, which is utilized to research if the declaration of the dividend policy has signal transmission effect.

The calculation formula of rate of return of everyday is: $r_{st} = (p_{st} - p_{s,t-1}) / p_{s,t-1}$.

In which the r_{st} in the formula is the rate of return of stock s (stock) on the trading

day t; p_{st} is the closing price of stock s on the trading day t; $p_{s,t-1}$ is the closing price of stock s on the trading day of t-1. Replace the individual stock closing price in the formula with the closing index of A stock of Shenzhen Stock Exchange or Shanghai Stock Exchange (determined by the market of the stock) of that day when calculating market return.

Calculate the normal rate of return of each share. The market model is often utilized to calculate the system risk of the share, i.e., the β coefficient of the stock. The

market model of the stock rate of return is: $r_{st} = \alpha_s + \beta_s r_{mt} + \xi_{st}$, in which r_{st} is

the rate of return of the stock s on the trading day of t; r_{mt} is the rate of return of the

market on the trading day of t; β_s is the system risk of stock s; ξ_{st} is the random

error item. During the calculation of the β value of the stock, the data of “rate of return per day on reinvestment of cash bonus” and “market return rate per day on reinvestment of cash bonus” during 103 days to 3 days before the dividend policy declaration (totally 100 trading days, delayed in condition of suspending date) are taken as the normal market expression before the declaration event, in order to conduct regression prediction to the excess return on the date of the event as well as 3 days before and after the event.

The above calculation results can be utilized to acquire the excess return of everyday and accumulated excess return respectively. The excess return of everyday is AR_{st} ,

with the calculation formula of: $AR_{st} = r_{st} - E(r_{st})$.

Considering that there may be conditions for disclosure before declaration and lagging effect after declaration, in order to reflect the whole process of the influence of the event on stock price before and after the declaration date to measure the true response of the market, it is also needed to calculate the accumulated excess return, with the following calculation formula: $CAR_{st} = \sum_{t=k}^t AR_{st}$

In the formula, k and t are the starting day and the ending day respectively, in which $k = -3$ and $t \in [-3, 3]$

The article conducts analysis on various sample data by adopting the above research method, to research the average excess return on 3 trading days before and after the dividend distribution declaration and the accumulated average excess return in 2008, 2009, 2010 and 2011 of MengDian HuaNeng Thermal Power Corporation Limited. The results are as shown in Table 2:

Table 2 Accumulated Average Excess Return during 2008-2011

Year	Distribution of cash dividend or not	Accumulated average excess return CAR
2008	No	-0.003276
2009	No	-0.019703
2010	No	0.0018467
2011	Yes	0.0155337

China Securities Regulatory Commission started the experimental work of reform of non-tradable stocks in 2005 since the release of “Notice on Problems Related to Experimental Works of Reform of Non-tradable Stocks of Listed Companies” after the approval of the State Council. In August, China Securities Regulatory Commission, State-owned Assets Supervision and Administration Commission, Ministry of Finance, People’s Bank of China and Ministry of Commerce jointly released “Guiding Opinions on Reform of Non-tradable Stocks of Listed Companies”; in September, China Securities Regulatory Commission issued “Management Method for Reform of Non-tradable Stocks of Listed Companies”. The reform of non-tradable stocks in our country was developed in a comprehensive way. According to related declarations of MengDian HuaNeng Thermal Power Corporation Limited after 2005, the company still released related stock reform policies at the beginning of 2008 although the company almost finished the reform of non-tradable stocks in 2006. In the opinion of the author, the dividend distribution policy during that period did not play a leading role in the influence on stock price; i.e., the event window did not clean enough; therefore, the data during 2008-2011 are selected for analysis. There was no distribution of cash dividend in the first three years, and there was in 2011; in addition, the distribution of cash dividend is mainly investigated by taking the profitability of that year or if the profit can compensate for the loss of the previous year, in order to

make comparison. It is clear in Table 2 that the accumulated average excess return CAR on distribution of cash dividend in the first three years was negative; i.e., the acquisition of the information of no cash dividend distribution by investors had negative influence on the stock price. However, the accumulated average excess return CAR of MengDian HuaNeng Thermal Power Corporation Limited was positive in 2010, although the company did not distribute cash dividend. According to the author, on one hand, the investors anticipated that the company will gradually compensate for losses and realize benefit, because they understood the unique characteristics in electric power industry such as natural monopoly and little flexibility on electric power demand, which did happen since 2008. On the other hand, according to the stipulations of China Securities Regulatory Commission, the listed companies which do not distribute cash profit in recent three years are not allowed issue additional new stock to the public or issue convertible bonds or place stocks to original shareholders. Therefore, the investors expected that MengDian HuaNeng Thermal Power Corporation Limited will distribute dividend in the next year due to the pressure of China Securities Regulatory Commission; in addition, the relatively low accumulated average excess return CAR of 2010 was in accordance with the anticipation. The accumulated average excess return CAR after dividend distribution of 2011 turned to positive, and with a relatively high value.

The above tables and figures indicate that the distribution of the profit of that year by adopting cash dividend indeed has influence on decisions of investors and the company stock price through the signal transmission effect. The adoption of the cash dividend distribution indeed has positive influence on company stock price. The positive adoption of cash dividend policy not only establishes preferable company image, but also stabilizes existing investors and further attracts potential investors, which is beneficial to the financing and development of the company and is advocated by China Securities Regulatory Commission. Therefore, the adoption of cash dividend policy is helpful to the seizing of opportunities as well as the long-term development of the company.

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