

Analysis of the Correlation between Corporate Dividend Policy and Stock Price

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Abstract: Based on the basic premise and assumption of building a multiple linear regression model and the correlation theory between corporate dividend policy and stock price, this paper adopts the multiple linear regression method of cross-section data to analyze the correlation between corporate dividend policy and stock price of 1458 enterprises from Choice financial terminal after strictly eliminating outliers. It is concluded that the significant positive correlation between dividend per share and stock price is stronger than that between fundamental indicators such as company total market value, return on equity, turnover rate of trading indicators and dividend distribution ratio and stock price, respectively. It is concluded that dividend distribution ratio is helpful to stabilize stock price fluctuations and improve investor return mechanism is beneficial to the healthy development of A-share market.

Keywords: Stock Price; Dividend Policy; Dividend Distribution Ratio.

1. Introduction

Dividend distribution policy connects enterprise's production and operation with investment and financing activities, and becomes the last link of enterprise value distribution. For investors, dividend payment is a way to obtain stable income and a direct signal to obtain the fundamental information of the company. Analyzing the market's reception of dividend information and how stock prices will react to this information can provide a basis for judging whether the market is rational. This paper analyzes the correlation between dividend policy and stock price of listed companies, establishes a theoretical model, and analyzes the data of 1,458 enterprises in 2020 through multiple linear regression method. The results show that the dividend policy of listed companies, the total market value of the company, the return on equity, and the turnover rate of transaction indicators have a significant positive impact on stock price. The positive correlation between dividend per share and stock price is stronger than that between total market value, return on equity, turnover rate and stock price. Compared with previous studies, the innovation of this paper may lie in the following: In terms of research method, multiple linear regression of cross-section data is selected to study a single sample in 2020, so as to reduce the errors caused by changes in economic cycle and policy tightness. It is concluded that urging listed companies to further improve the investor return mechanism is beneficial to the development of A-share market.

2. Literature Review and Theoretical Basis

Gordon proposed the "one bird in the hand" theory: If an enterprise does not distribute dividends, but reinvests retained earnings, it will bring relatively large uncertainty to the earnings of the company's shareholders and investors, and the investment risk is unpredictable, and even the risk will gradually increase over time. Therefore, investors prefer cash dividends, that is, a company distributes more cash to investors. Investors think the company deserves a bigger

market cap. Miller and Franco's "MM theory" proposed that in a perfect market, dividend policy and stock prices would be independent, assuming no tax. The value of a company is ultimately determined by its operating efficiency. But in the real economic environment, the capital market is always imperfect, and the dividend distribution policy will always have an impact on the stock price. Baker and Wurgler proposed "dividend catering theory". Investors' demand for dividend payment is affected by institutional and psychological factors. The management of a company has the incentive to pay dividends to satisfy the psychological needs of investors and the institutional needs of regulators, so that investors are more willing to give a high market price to the company. Sudipto research found that cash dividends have certain information content, which can be used as a signal of future expected profit. There is an asymmetry of information between management and investors. The management has a large amount of internal information related to the company's prospects, and dividends are like a tool for the management to convey the internal information to the outside of the company, which will affect the company's stock price to some extent. If a company's dividend payout goes up, its stock price will go up; Dividend payments fell and stock prices fell. Based on the above theoretical analysis and empirical evidence, this paper proposes a hypothesis: pre-tax cash dividend per share has a significant positive impact on stock price.

3. Theoretical Model

3.1. Variable Selection

Stock price fluctuations reflect the market trading characteristics of stocks, which is not affected by a single factor, but the result of a variety of market behaviors and the characteristics of the company itself. According to the research on the factors affecting stock market volatility in literature, the fundamentals of listed companies and the time of investors' shareholding are mainly considered. In the empirical analysis, other factors affecting stock prices are controlled to identify the real factors affecting stock prices.

Control variables: 1) Fundamental indicators: The intrinsic

value of the enterprise can be estimated according to the fundamental indicators of the company, and the stock price of the enterprise is closely related to its intrinsic value. Here, the control variable is selected as the total market value of the company LNMV, and the return on equity ROE is selected as the control variable. 2) Trading indicators: stock price

volatility is directly related to the trading situation of the stock in the market, such as the turnover rate describing the degree of trading activity, generally speaking, the higher the turnover rate of the stock means that there is a higher topic degree, and the stock price volatility is greater. Therefore, the turnover rate HSL is chosen as the index here.

Table 1. Selection and definition of variables

Variable type	Variable name	Variable code	definition of a variable
Explained variable	Stock price	GPJG	Annual closing price
Explanatory variable	Pre-tax dividend per share	SQGL	pre-tax dividend per share
Control variable	Turnover rate	HSL	Annual total turnover rate (based on: Free circulation)
	Total market value of company	LNMV	The last trading day of the year
	Return on equity	ROE	Annual corporate return on equity

3.2. Model Construction

The models of stock price, pre-tax dividend per share, turnover rate of company market value and return on equity are as follows:

$$GPJG_i = \beta_0 + \beta_1 SQGL_i + \beta_2 HSL_i + \beta_3 LNMV_i + \beta_4 ROE_i + u_i \quad (1)$$

β_1 is the coefficient that this paper focuses on, and u_i is the random error term. The model satisfies seven assumptions: 1) The regression model is linear and correctly set; 2) SQGL, HSL, LNMV and ROE are not correlated with random error term u ; 3) The variance of u is a constant; 4) The error term has no autocorrelation; 5) There is no complete collinearity among SQGL, HSL, LNMV and ROE; 6) Assume that the random error u follows a normal distribution with zero mean and σ^2 variance.

4. Empirical Research

4.1. Data Selection

Select Shanghai and Shenzhen A-shares non-ST, that is, remove "special treatment" ST stocks, remove stocks with missing data, remove enterprises listed for less than three years, "Shanghai and Shenzhen A-shares non-ST" A total of 4379 enterprises to retain the relevant data of 1687 enterprises in 2020 after processing. Data source: Choice Financial Terminal. Spss software was used to make strict 11 case diagnoses for the 1687 enterprises, and no abnormal data samples were obtained after the abnormal data of 10 cases were eliminated. Multiple linear regression analysis was conducted for the data of the remaining 1458 enterprises.

4.2. Descriptive Statistics

Table 2. describes the statistics

	N	Minimum	Maximum	Mean value	Standard deviation
GPJG	1458	1.43000	48.51000	10.1586831	6.26119760
SQGL	1458	.00210	1.20000	.1555322	.16211994
HSL	1458	55.39700	3620.26060	809.5804503	499.96762869
LNMV	1458	14.28102	4575.66208	187.8503743	401.57512204
ROE	1458	.19157	80.16482	9.1245127	7.09314902

Table 2 shows the enterprise data after the outlier removal processing, and the total market value of the company is selected as one billion. It can be seen from the data in the table that the standard deviation of pre-tax dividend per share is about 0.1621, indicating that the deviation of pre-tax dividend per share is small in different companies, and the data volatility is small. The standard deviation of the turnover rate and the total market value of the company is about 499.9676 and 401.5751 respectively, which indicates that the stock turnover rate and the total market value of the company have great differences in different companies, and the data is relatively volatile.

4.3. Scatter Chart Test:

As can be seen from scatter Figure 1, there is a positive linear relationship in this study. The linear relationship between the dependent variable and the independent variable completes the test of hypothesis 1.

According to the results of correlation analysis in Table 3, it is concluded that there is a positive correlation between stock price and pre-tax dividend per share. In addition, the correlation coefficient between variables is small, and the regression basically does not have the problem of multicollinearity, so the analysis can continue.

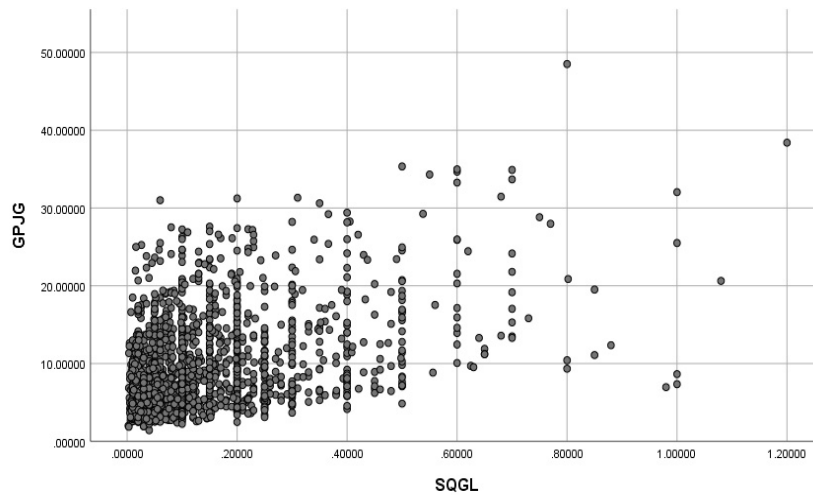


Figure 1. Scatter plot GPJG according to SQGL

4.4. Correlation Analysis

Table 3. Pearson correlation

	GPJG	SQGL	HSL	LNMV
SQGL	.403**		*	
HSL	.259**	-.146**		
LNMV	.305**	.332**	-.202**	
ROE	.396**	.494**	.099**	.158**

*At level 0.01 (two-tailed), the correlation was significant. **

Table 4. Coefficients

	B	SE	Beta	t	Floor	Ceiling	Rank 0	Partial	Section	Allowance	VIF
constant	2.913	.315		9.255	2.296	3.531					
SQGL	10.607	1.001	.275	10.596	8.643	12.570	.403	.268	.225	.669	1.495
HSL	.004	.000	.331	14.903	.004	.005	.259	.364	.316	.914	1.094
LNMV	.039	.004	.251	10.993	.032	.045	.305	.277	.233	.865	1.156
ROE	.166	.022	.188	7.551	.123	.209	.396	.194	.160	.725	1.379

*Dependent variable: GPJG

It can be seen from Table 4 that all VIF values are less than 3, and all tolerances are greater than 0.1. After testing, no collinearity conforms to hypothesis 5. It can also be seen that in the case of all significance probabilities $p < 0.001$ in Table 4, the intercept is 2.913, the coefficient β_1 of variable SQGL is 10.607, the coefficient of variable HSL is 0.004, the coefficient of variable LNMV is 0.039, and the coefficient of

variable ROE is 0.166. In order to avoid over-mining of data, Table 4 presents the possible results of the coefficients calculated between the observed maximum and minimum values of the relevant variables, resulting in the range of the coefficients of each variable in the 95% confidence interval.

Table 5. collinear diagnosis

d	Eigenvalue	Conditional index	Variance ratio				
			Constant	SQGL	HSL	LNMV	ROE
1	3.442	1.000	.01	.02	.01	.02	.02
2	.826	2.042	.01	.02	.06	.60	.00
3	.421	2.861	.02	.36	.13	.32	.07
4	.194	4.208	.04	.50	.03	.02	.91
5	.117	5.413	.91	.10	.76	.04	.00

*Dependent variable: GPJG

It can be seen from Table 5 that the conditional indices are all less than 10, and the multi-dimensional eigenvalues are not 0, so the model is further tested without collinearity, that is, 5 is assumed.

5. Conclusion and Enlightenments

According to the research results of correlation analysis between dividend policy and stock price in this paper, firstly, pre-tax dividend per share in dividend policy has a significant

positive correlation with stock price, and this positive correlation is greater than the significant positive correlation between total company market value, stock turnover rate, return on equity and stock price. Secondly, after controlling the influences of total market value, return on equity and turnover rate of listed companies, this paper finds that dividend distribution ratio has a significant negative correlation with stock price, indicating that under the significant positive impact of dividend per share on stock price, dividend distribution ratio helps to stabilize the volatility of stock price. It is concluded that promoting the implementation of cash dividends by listed companies is conducive to improving the investor return mechanism, and obtaining reasonable investment income from dividends is

conducive to the healthy development of the A-share market.

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