Analysis of the Impact and Factors of Dividend Policy on the Achievement of Sustainable Growth of Companies in Different Industries

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Abstract
Adjusting dividend policies is an important method for companies to achieve sustainable growth. On the one hand, it is crucial for companies to achieve the corresponding sustainable growth rate, and on the other hand, it is necessary to make the actual growth rate as close as possible to the expected sustainable growth rate, i.e. to reduce the sustainable growth deviation. This paper conducts an empirical study on the data of A-share listed companies from 2014 to 2019 in the context of China, and examines the relationship between dividend policy and sustainable growth deviation through panel data regression. The results show that (i) the deviation from sustainable growth of listed companies is positively correlated with the dividend payout ratio and inversely correlated with the dividend payout ratio, and not significantly correlated with the transfer of capital from provident fund (ii) different industries have different realizations, and the deviation of public utilities is higher than that of medical services and higher than that of information technology when other conditions are certain. This paper provides some suggestions for listed companies to better achieve sustainable development.

Keywords-*Dividend policy; sustainable growth; industry; deviation*

1. INTRODUCTION

Dividend policy, the decision of a listed company on how to distribute its earnings (or profits) at the end of the period [1], incorporates the company's expectations of future profitability [2], and is usually explained through agency theory [3], which can lead to over-investment by management if the company has too much internal capital, thus harming the interests of shareholders and causing cash flow shortage problems that affects the sustainable development of the company [4].

According to the corporate value theory, the ultimate goal of a company's value expressed by the discounted value of cash flows is to maximize shareholder value, maintain consistent and stable cash flows and achieve sustainable growth of the company, which can be measured by the sustainable growth rate. According to Professor Robert. C. Higgins, the issue of sustainable growth has been studied from a static perspective and is defined as "sustainable growth rate is the maximum rate at which a company's sales can grow without running out of financial resources" [5]. There are two major influences on sustainable growth: operational efficiency,

which is reflected in net asset turnover and net profit margin, and financial policy, which includes earnings retention and equity multiplier [6]. Specifically, firstly, dividend policy affects the future cash flow of a company. Future cash flows are the cash flows excluding related investments from the retained earnings of a firm's main business. Secondly, dividend policy also affects the discount rate of future cash flows. In the capital asset pricing model, the discount rate is generally expressed in terms of the company's financing cost, which can be divided into internal cost and external cost, with internal cost being the company's financing cost and external cost being the company's external debt cost. Management policies affect the financing decisions and financing costs of listed companies, which in turn affects the sustainability of the company. Whether loose or tight dividend policy will affect the sustainable development of the company, but always, companies can not take extreme dividend policies, otherwise, the polices will appear too much, and will certainly affect the company's future development of sustainability.

To achieve sustainable development of the company, on the one hand, it is necessary to make the sustainable

growth rate of the company reach the predetermined target; on the other hand, in the market, the actual turnover growth rate of the company will often not be the same as the expected sustainable growth rate, the company needs to make the actual growth rate reach the expected level as far as possible, i.e. reduce the sustainable growth deviation. At the same time, the performance of different industries in the capital markets varies considerably, and the extent to which sustainable growth rates deviate from actual turnover growth rates varies considerably between traditional and emerging companies.

This paper examines measures to reduce sustainable growth deviations, i.e. how to better achieve sustainable growth, using a model to compare data from different industries and to provide recommendations to companies.

2. METHODOLOGY

2.1. Introduction to the DSG model

The SGR model is a guide for mature Western companies because of the relative stability of financial indicators. The assumption that financial indicators are stable is biased against Chinese companies and the model loses its rationality to some extent in China [7]. In mature markets, dividend policy is an important tool to address corporate agency problems, and the severe agency problems in China have an important impact on dividend policy. This model determines the degree of sustainable growth achieved by listed companies by measuring the deviation from sustainable growth. Drawing on the advantages of the simplicity of the Higgins model and the dynamic nature of the Van Horne model, the model reorganizes sustainable growth rates in the context of China, using the deviation from sustainable growth eliminate the deviation caused by the enterprise's own situation [8]:

$$(DSG) = \frac{(RGR - SGR)}{SGR} \qquad (1)$$

where real growth rate SGR = (current year's total main business income - previous year's total main business income) / previous year's total main business income. This is the growth rate of the company's turnover in the current year compared to the previous year's turnover. A high real growth rate indicates that the company's main business has a higher growth potential.

Drawing on Professor Higgins' static model and Professor Van Horn's dynamic model and taking into account the Chinese context, the SGR measure is derived [9].

$$SGR = \frac{TA}{BA \times [1 - TA \times TP \times TT \times TR]} \qquad (2)$$

In the formula (2): BA——base year asset turnover rate

TA——target asset turnover rate

TP——target net profit margin

TT——target rights multiple

TR——target retaintion rate

Dividend policy can be divided into stock dividends, which are an effective way to take free cash flow out of management's hands, and cash dividends, which can have an impact on the sustainable growth of a company [9], can pass on the company's future profit information by controlling shareholders [10]. Additionally, cash dividends can be divided into two forms: bonus shares and conversion of provident fund to capital stock, as shown in Table 1.

TABLE 1. VARIABLES' DEFINITION

Classific ation	Variable name	Sym bol	Description
Explaine d variable	Deviation from sustainable growth	DSG	Difference between real growth rate and sustainable growth rate
Explana tory variable	Share delivery	Pers pt	Share delivery ratio
	conversion of provident fund to capital stock	Pertr an	Conversion ratio
	Cash payout	Btpe rdiv	Cash payout ratio(before tax)
Control variable	Company size	Ln	Logarithm of total assets at the end of the year
	Ownership concentrati on	O/C	the sum of shares of the leading five share holders
	Industry	Ia, Ib, Ic, Id	Classification of industries

The model is constructed to test the effect of dividend policy on the deviation from sustainable growth by constructing a three-stage panel data model as follows.

$$DSG_{i,t} = \beta_0 + \beta_1 LnA_{i,t} + \beta_2 Perspti,t + \beta_3 Pertran_{i,t} + \beta_4 Btperdiv_{i,t} + \beta_5 o/c + \beta_6 Ia + \beta_7 Ib + \beta_8 Ic + \beta_9 Id + \varepsilon_{i,t} \qquad (3)$$

$$DSG_{i,t} = \beta_0 + \beta_1 LnA_{i,t} + \beta_2 Perspti,t + \beta_3 Pertran_{i,t} + \beta_4 Btperdiv_{i,t} + \beta_5 o/c + \beta_6 Ia + \beta_7 Ib + \beta_8 Ic + \beta_9 Id + \alpha_i + \varepsilon_{i,t} \qquad (4)$$

The meanings of the explanatory variable, explanatory variables and control variables are given above; $\varepsilon_{i,t}$ in Panel Data 2 denotes the fixed effect of firm i; $\varepsilon_{i,t}$ denotes the random error term.

2.2. Data collection and processing

In this study, all A-share companies listed on the two exchanges in Shanghai and Shenzhen are selected as the initial sample, and the sample is processed as follows: (1) exclude the ST sample; (2) exclude the financial sector sample; (3) exclude the sample with missing financial data; (4) Winsorize and apply a 1% tailing at the top and bottom of all continuous variables; (5) Since measuring the sustainable growth of firms in year t, the level of deviance requires the use of data from the previous year, i.e. t-1 versus year t. In order to exclude the impact of the new crown epidemic, this study uses annual data from 2013 to 2019, with years 2014-2019, and a sample of nearly 2,000 firms in four industries (manufacturing a, information technology b, health services c, and public utilities d - the control group) to focus on exploring the impact of different industry. The impact of corporate dividend policies on the degree of deviation from sustainable growth achievement.

2.3. Results

The results obtained are presented here in Table 2.

TABLE 2. RESULTS

Variables	(DGR)	(Perspt)	(Pertran)	(Btperdiv)	(Ln)	(OC)	(Ia)	(Ib)	(Ic)	(Id)
DGR	1.000									
Perspt	-0.039 ***	1.000								
Pertran	-0.008	0.086***	1.000							
Btperdiv	0.005	0.253***	0.101***	1.000						
Ln	-0.072 ***	0.103***	0.040***	0.204***	1.000					
OC	-0.011	-0.008	-0.011	-0.041***	-0.023**	1.000				
Ia	0.005	-0.011	-0.033***	-0.045***	-0.086***	-0.299 ***	1.000			
Ib	0.004	0.053***	0.019*	-0.023**	0.043***	-0.303 ***	-0.255 ***	1.000		
Ic	0.021* *	-0.013	0.026**	0.113***	-0.016	-0.322 ***	-0.270 ***	-0.274 ***	1.000	
Id	-0.024 **	-0.025**	-0.001	-0.006	0.110***	-0.206 ***	-0.173 ***	-0.175 ***	-0.18 6***	1.000
*** p<0.01, ** p<0.05, * p<0.1										

2.4. Discussion

The results generated above are compared and discussed to analyse the factors that influence sustainable growth.

Table 2 shows that the results of the sample are relatively impressive.

(1) The coefficients on the control variables for firm size (Ln) are all significant and negative at 0.01, i.e. the larger the total assets owned by the firm, the lower the deviation from sustainable growth and the more likely it is that sustainable growth will be achieved. That is, sustainable growth is more likely to be achieved by larger companies than by SMEs.

(2) The effect of the share delivery ratio and the cash payout ratio on the deviation from sustainable growth is significant at 0.01 and 0.05 respectively. The coefficient of the payout ratio is negative, i.e. the higher the payout ratio, the smaller the sustainable growth deviation, and

one share for every 10 shares will reduce the sustainable growth deviation by 1.23%.

In addition, the performance of different industries varies, with the healthcare and information technology industries being significant at the 0.05 and 0.1 levels respectively, while the manufacturing industry does not have a significant impact on sustainable growth deviation.

3. CONCLUSION

The panel data model was used to investigate the impact of dividend policy on the achievement of sustainable growth of enterprises in different industries. The results found that: (1) the higher the dividend payout ratio, the easier it is for enterprises to achieve sustainable growth; (2) the change in the capitalization ratio of capital reserves to share capital has no significant impact on the deviation from sustainable growth; (3) the higher the payout ratio, the greater the deviation from sustainable growth and the less likely the expected growth rate is to be achieved; (4) The performance of

firms in different industries also varies significantly. Compared to the utilities sector, the healthcare and information technology sectors have a relatively lower degree of sustainable growth achievement. When the size of the company, the share delivery ratio and the dividend payout ratio are certain, the degree of sustainable growth deviation is achieved in the following order: information technology, medical industry and public utilities.

At the same time, to study and provide plans for the development of listed companies and realize the sustainable development of the company, on the one hand, it is necessary to make the sustainable growth rate of the company reach the expected indicators, that is, to maintain the results of asset turnover rate, net sales interest rate, equity multiplier and retained earnings rate at the expected value; on the other hand, it is necessary to make the actual growth rate fit the sustainable growth rate as much as possible, that is, to reduce the deviation degree of sustainable growth. For small-scale enterprises, to achieve the goal of sustainable growth, compared with changing the dividend policy and the number of additional shares, they should first raise funds, issue additional shares, increase equity capital, reduce dividend distribution to maintain a high retained rate of return and provide sustained and stable cash flow. At the same time, they should appropriately expand financial leverage and increase the sustainable growth rate under the condition of reducing deviation. When the enterprise expands to a certain scale, the following measures can be taken to maintain sustainable development: ① appropriately increase the financial leverage to improve the sustainable growth rate; ② increase the stock transfer and reduce the cash distribution ratio to realize the sustainable development of the enterprise in the future. While adjusting the dividend policy, the change of dividend to share ratio and cash distribution ratio will have an impact on the company's retained earnings rate, and its effect on the deviation degree of sustainable growth is opposite. Listed companies can achieve the expected sustainable growth under the condition of controlling the retained earnings rate by adjusting the dividend to share ratio and cash distribution ratio.

There are still limitations in the paper at present: ① More industries are not covered and in the future more industry segments will be covered and individual companies of different sizes within the same industry will be analyzed in a vertical and horizontal comparison. ② In order to exclude the impact of the COVID-19 Pandemic, the sample data was selected from 2013 to 2019, and not from the recent period after 2020, which may make the conclusion a slight lag. The empirical results are influenced by changes in the environment and institutions related to the domestic stock market, as dividend policies vary significantly from year to year in China's booming listed companies, and some factors do not have a consistent impact. As the environment and institutions change, further research is needed on how the deviation and impact of dividend policy on sustainable growth changes.

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