

Empirical Analysis of Cash Dividend Payment in Chinese Listed Companies

Shulian Liu, Yanhong Hu

School of Accounting, Dongbei University of Finance and Economics, Dalian, Liaoning, China, 0086-411-8471-2716,
msy8895@sohu.com, 01186-411-82392135, sparrowhu@yahoo.com.cn

Abstract: This paper empirically analyzed the dividend policy of Chinese listed companies from the factors of the abilities in cash payout and investment opportunity of the companies, especially studied how cash flow (FCFE, ONCE, NCE) impacted on cash dividend. The study answered the following questions: (1) Why cash dividend and free cash flow to equity are not equal; (2) What is the relationship between cash dividend and ability of cash payout and also the opportunity of investment; (3) What are the features of cash dividend payout in different industries. [Nature and Science. 2005;3(1):65-70].

Key Words: cash dividend; free cash flow; investment opportunity

1 Research Background

Dividend policy, one of the three corporation financial decisions, has been concerned among theoreticians and practitioners. John Lintner (1956) brought forward a model of dividend adjustment.¹ According to the model, a firm that is currently paying dividends at the rate of DPS_t , and that has a target payout ratio of POR, will adjust (ADJ) its dividend rate, but less than fully, as its earnings per share (EPS) changes. Modigliani and Miller (1961) argued that dividend policy has no effect on either the price of a firm's stock or its cost of capital, in a perfect world, the dividend policy is irrelevant to shareholders wealth. This proposition has laid a solid theoretical foundation for the dividend policy. After that, economists have offered explanations in different ways about dividend payment, such as effect of taxes, dividend signaling, agency costs issues and transaction costs. Over decades, economists could not come to an agreement. Thus, Black, Fischer (1976) gave it a name "dividend puzzle".

In China, the dividend policy of listed companies has its unique characteristic in the strong emerging market economy if comparing the type of dividend payment in China with the type used in developed countries. In addition to cash dividend and stock dividend, several mixed types of dividend payment derive from cash dividend and stock dividend such as mix of bonus issues and dividend, mix of rights issues and dividend, According to China Securities Journal's relative statistical

data, there are more listed companies who adopted the pattern of stock dividend in 1993 which were 36%, and more listed companies adopted cash dividend policy during 1994 and 1995 which were 40% and 36% respectively. The companies that paid no dividends account for 35%, 54%, 59% and 62% respectively during the period of 1996 and 1999. The proportion of total listed companies that adopted cash dividend increased from 47% to 54% during 2000 and 2001.

In this situation, in order to resolve the "dividend puzzle", many Chinese scholars have done a number of empirical studies. Two main approaches were taken in these studies:

First, using event study method to analyze the influence of different dividend policy on share price and the value of a firm. Wei Chen et al (1999) empirical analyzed the dividend policy of Shanghai stock market by the method of Cumulative Abnormal Return (CAR) and study the existence and character of the signaling effect of dividend policy in this market. This study showed that the degree of CAR was very different from different dividend policy. The CAR of right issue was higher than cash dividend but lower than bonus. Yu Qiao et al (2001) found that there was evidential positive statistical relationship between the dividends and mix dividend policies of firms on the stock market. But their study showed that the market was not sensitive with cash dividends. This phenomenon is opposition with the result being observed in developed countries' mature markets. Gang Wei (2000) found that dividend policy often signal the information of

long-term earnings about a firm for investors.

Second, based on diversified dividend policy theories, analyzers analyzed dynamic reasons of dividend policy, and tried to find impact of dynamic factors (such as ownership structure, the size of assets, profitability, ability of growth, ability of repayment, consumer preference and agency problem, etc) and influencing extent on dividend policy of firms. Different point of view offered different significant conclusions. For example, cash dividend may be affected by currency balance and retained earnings, and has positive relationship with them (Yang, 2000); different size of firms choose different pattern of dividend: small firms tend to choose stock dividend, while large firms prefer cash dividend (Yan, 2001; Zhao, 2001). If the firms have lower proportion of holding state shares and corporative shares and the stronger self-growth and development of firms, the firms enjoy the higher stock dividend payment, and also the lower cash dividend payment (Lu, 1999).

Domestic theoretic and empirical researches based mostly on profit flow (net income, EPS or retained earnings) investigated the dividend policy, and ignored the effect on cash flow. In fact, cash dividend distribution not only depends on profitability of firms, but also depends on free cash flow to firm. Compare profit flow with cash flow, the latter not only express the value which has been created by firm, but also express how many value that has been realized. From the point of view of cash flow to analyze it, it can patch the faults of profit flow (accounting policy choice, earning management), and declare real relationship between cash flow and the ability of cash payout.

Recently, more and more investors prefer cash flow, because of the idea that “cash is king” which have become many managers’ conception. Therefore, this paper seeks to analyze the problem of cash dividend payment from the cash flow point of view, and three questions answered in this paper: (1) How much cash will be distributed to shareholders by paying a cash dividend after all expenses. What is the actual dividend? (2) Why is the cash dividend payment higher or lower than cash flow? What are the factors that affect cash dividend payment? (3) What are the features of cash dividend payment in different industries?

2 Assumptions

When we analyze dividend policy of listed companies, there are two key clues: whether the firm has sufficient cash to pay a dividend; whether the cash flow of firm has another way to enhance the value of firm. There are two assumptions in this paper:

Assumption 1: the ability of dividend payment. The dividend policy is measured by dividend payout ratio (dividend/EPS). This assumption suggests that dividend is a part of EPS, but EPS is not the only source of cash dividend. According to accounting standard, cash dividend is an item in the statement of cash flows, and a residue given back to shareholders. In this case, free cash flow to equity (FCFE) is the measure of the cash that is available to shareholders after the payment of business expensive, interest and tax, which is for distribution in the form of dividends or for reinvestment in our business. It is usually measured from earning, through a series of adjustment to cash flow, it can also be measured by equation, assets = debt + equity, directly get free cash flow to equity. Ordinarily, free cash flow is the source of cash dividend, and also the maximum of cash dividend. If the cash dividend is less than FCFE, it means a firm has residual cash or increase cash storage; if cash dividend is over FCFE, it means a firm needs financing by issuing new shares etc, in order to meet the requirement of the payment of cash dividend.

Assumption 2: the investment opportunities. Instead of the method of repaying back cash to shareholders is reinvestment. Thus, reinvestment opportunities become another analytic rule of dividend policy. We assume listed companies’ dividend policy accords with the model that dividend payout ratio depend on EPS. If there is good investment opportunity in future, listed companies will reduce the rate of dividend payment; oppositely, if the investment opportunities of the firm are lack in the future, they will raise the level of cash dividend payment.

3 Variables and sample

In this empirical study, we have designed 12 variables as seen below, in order to analyze the relationship between cash dividend of listed companies and other factors, relative variables and definitions (Table 1).

Table 1. Table of variables

Variable name	Measure of variables	Definition of variables
Earnings per share (EPS)	Net profit/ total shares	Profitability
Return on equity (ROE)	Net profit/ total equity	Investment opportunity
Operating net cash flow (ONCF)	Operating cash flow/ total shares	Ability to pay out of cash flow
Free cash flow to equity (FCFE)	Free cash flow to equity/ total shares	Ability to pay out of cash flow
Net cash flow (NCF)	Net cash flow/total shares	Ability to pay out of cash flow
Dividend per share (DPS)	Dividend/total shares	Ability to cash dividend payment
Cash dividend-to-EPS ratio (EPSR)	Cash dividend/EPS	Ability to cash dividend payment
Cash dividend-to-ONCF ratio (ONCFR)	Cash dividend/ONCF	Ability to cash dividend payment
Cash dividend-to-FCFE ratio (FCFER)	Cash dividend/FCFE	Ability to cash dividend payment
Debt-to-asset ratio (BAR)	Total debt/ total assets	Ability of financing
Non-outstanding stock proportion ratio (NPR)	Non-outstanding stock /total shares	Concentration of large shareholders
Total assets (TA)	Logarithm total assets	Size of assets

In order to estimate the ability of cash dividend payment, the variable we choose not only the index of profitability such as ROE, EPS but also the index of cash flow, such as FCFE, ONCF and NCF. The last two variables (ONCF, NCF) belong to real cash flow of a company during current period; they are additional remarks for the analytic results of FCFE. The net operating cash flow associated with the cash flow creates during current period. The higher of the ONCF, the stronger of the ability that firm creates the cash flow. Net operating cash flow is the total current ability of cash dividend payment when firms make cash dividend decision. The difference between FCFE and NCF is that the latter including the amount of current equity financing.

The sample was cross section data of companies listed on the China (Shanghai and Shenzhen) Stock Exchanges in the end of 2000. 299 listed companies were randomly chosen; Special Treatment (ST) and Particular Transfer (PT) companies were not included. The accounting data was obtained from listed companies' annual reports, which were published on the web site (<http://www.csrc.gov.cn>) of China's Securities Regulatory Commission (CSRC), others were obtained from the web site: <http://www.cninfo.com.cn>, and

Shenglong software.

4 Results

Our analysis is from three aspects:

1) Ability of cash dividend payment analysis. Sample descriptive statistics is presented in Table 2.

According to the EPSR and FCFER, the 209 firms were divided into 11 groups, the statistical analysis shows that cash dividend payout ratio of the most firms were between 20%~50%, this means cash dividend payment is lower than accounting profit or book value; there are 50 percent of sample firms that cash dividend payment are higher than the FCFE. This situation is revealed as figure follows (Figure 1).

2) Cash dividend payment on relative variables. From the relationship between the cash dividend payment and each variable, the relationship between cash dividend payment and EPS, However, the non-significant relationship between cash dividend payment and FCFE found in Table 3.

We chose various variable of EPS, ROE, ONCF, TA and NPR as independent variable, chose DPS as dependent variable, the results of regress analysis

(observation of 299 firms) that is the positive relationship between cash dividend and EPS, also between cash dividend and total assets; the negative relationship between cash dividend and debt-to-asset

ratio; the other variable which has not passed test were eliminated. Sample descriptive statistics is presented in Table 4.

Table 2. Statistics of dividend payment firms

		Non-dividend firms (90, 30%)		Dividend firms*(209, 70%)		Total	
		Number of firms	Proportion	Number of firms	Percent	Number of firms	Percent
EPS	Positive	86	95%	209	100%	295	98%
	Negative	4	5%	0	0	4	2%
FCFE	Positive	53	59%	117	55%	170	56%
	Negative	37	41%	92	45%	129	44%
ONCF	Positive	68	75%	170	83%	238	79%
	Negative	22	25%	39	17%	61	21%
NCF	Positive	56	62%	144	69%	200	67%
	Negative	34	38%	65	31%	99	33%

* including cash dividend and mix of cash dividend and bonus.

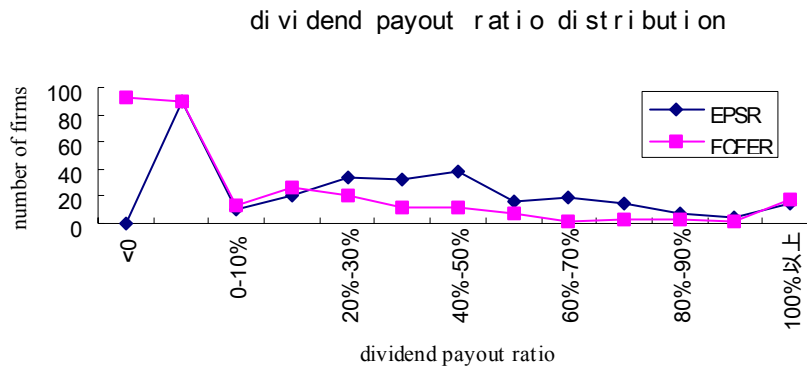


Figure 1. Dividend Payment Ratio

Table 3. Coefficients of variables for payment of cash dividend and test

	r	Sig. (2-tailed)
EPS	0.879	0.000
FCFE	-0.203	0.550
ONCF	0.671	0.024
NCF	0.181	0.594

Remarks: t values is at 5% level

Table 4. Statistic regress analysis

	Unstandardized Coefficients	Standardized Coefficients	t	Sig.	F	R ²
	B	Beta				
(Constant)	-.248		-4.080	.000		
Earnings per share	.155	.358	6.914	.000	29.567	0.231
Total Asset	6.498E-02	.287	5.133	.000		
Debt-to-assets ratio	-9.110E-02	-.168	-3.012	.003		

3) Industry and investment opportunity analysis. In this study, we found that listed companies involve in widespread industries. Different industries differ greatly in the size of assets, the character of operating, and the payment of cash dividend. If the market is regarded as a whole, it is possible to ignore the characters of industries and to affect the result of research. So, we consult the industry classification of listed companies that were reported by the Zixun web site. This paper divided the sample 299 companies into 16 industries according to the index of ROE and ONCF. The industries, such as Energy and Power, Beverages, Metallurgy and Utilities show higher ROE and ONCF; the Healthcare, Financial and Real Estate reveal higher ROE and lower ONCF; the Transportation display lower ROE and higher ONCF; and the Commerce, Tourist and Light Industry show lower ROE and ONCF.

5 Conclusions

Firstly, the payment of cash dividend is usually less than accounting profit in Chinese listed companies, but quite a number of listed companies which had more payment of cash dividend than free cash flow to equity, the gap between cash dividend and FCFE is right issue. By theory, the phenomenon of both cash dividend and right issue is contrary to basic regulation of corporate financial management. This phenomenon of self-contradiction² may be related to the rule by China security commission in 2000, which the listed companies must have cash dividend payment last three years while they finance by adding shares or right issue. In contrast, cash dividend payment in some listed companies were less than free cash flow to equity, which is result in forming cash storage in these firms. In China, dividend payment of firm can be described as: the firms have very few cash dividend payment and more stock dividend payment, while some firms have not paid any dividend. This is maybe one of the evidences that

Chinese stock market full of speculation and unfair financing from stock market.

Secondly, payment of cash dividend in Chinese listed companies is relevantly positive for current return per share and total assets but negative for debt to asset ratio. For the index of cash flow, it is closely related to the payment of cash dividend and net operating cash flow; the index of free cash flow to equity is irrelevant. This is because listed companies understand the index of free cash flow to equity in significant limit, they seldom use free cash flow. Additionally, the payment of cash dividend is irrelevant to non-outstanding shares.

Lastly, comparatively, the results indicate that firms with a higher ROE, ONCF and higher cash dividend payment belong to traditional industry; the firms with a higher ROE, lower ONCF and lower cash dividend payment belong to high-tech industry. We find there are quite many firms, which cannot make enough residual cash flow, but they still invest big projects. They return back cash dividend to shareholders by financing from stock market. Other firms with little investment opportunity have plenty of cash flow but no cash dividend payment, still finance too. These phenomena should be paid more attention to.

Correspondence to:

Shulian Liu, Yanhong Hu
 School of Accounting
 Dongbei University of Finance and Economics
 Dalian, Liaoning, China
 Telephone: 0086-411-8471-2716
 Email: msy8895@sohu.com

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¹ The following model describes this process in mathematical terms: $DPS_{t+1}-DPS_t=ADJ[POR(EPS_{t+1})-DPS_t]$, where DPS is the dividend per share, ADJ is the adjustment to dividends, POR is the payout ratio, and EPS is earnings per share.

² If cash dividend is really return to shareholders, right issue can be treated as negative cash dividend.