The Influence of Macro Monetary Policy and Micro Financing Constraints on Cash Dividend Payment

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Keywords: Monetary Policy, Financing Constraint, Cash Dividend.

Abstract. Dividend distribution is the core of financial management of listed companies and an important way for investors to obtain returns. This paper examines the influence of macro monetary policy and micro financing constraints on cash dividend payment by taking a-share profit listed companies in Shanghai from 2008 to 2012 as samples. The findings are as follows: (1) tight monetary policy inhibits the payment of cash dividends; (2) Non-state and non-eastern companies pay fewer cash dividends under tighter monetary policy.

Introduction

The ability of listed companies to obtain external financing will be affected by many factors, not only on the financing constraints at the company level, but also on the macro policies at the national level. The tight monetary policy will directly reduce the loanable funds of Banks and affect the balance sheet, further reducing the lending capacity. [1] When money is tight, Banks are more likely to invest limited credit resources in state-owned listed companies, thus restricting the credit financing of private listed companies. [2] Yang Xuan and Zhongjun Yang found that the restraint of tight monetary policy on dividend distribution was more obvious in state-owned companies. [3] However, this paper finds the opposite result, which is more consistent with the previous conclusion that non-state-owned companies are prone to "credit discrimination".

This paper proposes and tries to explore the following questions: in the context of China, will the cash dividend distribution of companies at the micro level be affected by the monetary policy at the macro level? Under different macro policy background, is there any significant difference in cash dividend payment between companies with different degree of financing constraint?

The following structure is arranged as follows: the second part is the research background and hypothesis development, the third part is the research analysis, the fourth part is the empirical results and analysis, and the final part is the research conclusion.

Theoretical Analysis and Hypothesis Development

The tight monetary policy will directly reduce the loanable funds of Banks, leading to fierce credit competition. [1] At the same time, monetary policy changes will also have a fundamental impact on macroeconomic conditions and corporate conditions, Which will lead to a higher degree of constraint on the external financing of enterprises. Therefore, under the loose monetary policy, the debt financing cost of the company is relatively low and more cash dividends will be paid. On the contrary, under the tight monetary policy, the company needs to retain more internal funds and the payment of cash dividends will be correspondingly reduced. Based on this, the research hypothesis 1 of this paper is proposed:

Hypothesis 1: Cash dividends paid by firms under tight monetary policy are lower than under loose monetary policy.

According to the research of scholars, the change of monetary policy has a greater impact on small enterprises. [4] During the period of monetary tightening, state-owned enterprises and labor-intensive enterprises are favored by the Banks. Thus, companies with high degree of financing

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constraints are more sensitive to macro monetary policy.[5] Based on this, the research hypothesis 2 of this paper is proposed:

*Hypothesis 2:* The restraining effect of tight monetary policy on cash dividend payment is stronger in companies with higher degree of financing constraint.

**Research Design**

**Model Design and Variable Definition**

The regression model is designed as multiple linear regression to study the impact of tight monetary policy on cash dividend payment. The design regression model is tested as follows:

\[ C_{payout} = \alpha_0 + \alpha_1 MP_{\text{tight}} + \sum \text{Control} + \varepsilon \]

| Table 1. Variable Definitions. |
|---------------------------------|
| **Variable types** | **Variable name** | **Variable symbol** | **Calculation method** |
| Explained variable | Cash dividend payout rate | Cpayout | Cash dividend per share/net profit per share |
| Explanatory variable | Tight monetary policy | MP_tight | Take 1 when monetary policy is tight or 0 when it is not |
| Control variables | The company size | Size | The logarithm of total assets at the end of the year |
| Profitability | Croa | Operating profit/total assets at year end |
| Growth | Growth | Operating profit growth rate |
| Financial leverage | Lev | Total liabilities/total assets |
| Nature of property right | Soe | State-owned listed companies take 1, otherwise take 0 |
| Nature of the area | East | Listed companies in the eastern region take 1, otherwise take 0 |
| Nature of the industry | Pro | Listed companies in protected industries take 1, otherwise take 0 |
| Year variable | Y2008 | In 2008 I'm going to take 1, otherwise I'm going to take 0 |

If hypothesis 1 is true, \( \alpha_1 \) should be negative and significant. In this paper, three dimension variables are selected to describe the financing constraints faced by a company: Size, Soe and East. Previous literatures have pointed out that larger companies, state-owned companies, companies in regions with a higher level of financial development have relatively low financing constraints.[6,7,8] If hypothesis 2 is established, cash dividend payment is sensitive to monetary policy in companies with relatively high degree of financing constraint.

**Sample Selection**

This paper selected Shanghai a-share profit-making listed companies from 2008 to 2012 as the initial samples, eliminated delisted companies, financial companies and companies with missing variable data, and obtained 3,268 observed values for empirical analysis.
Empirical Results and Analysis

Descriptive Statistics and Correlation Analysis

Table 2 reports the descriptive statistics of this paper.

Table 2. Descriptive Statistics and Univariate Tests.

| Panel A: Full sample descriptive statistics |
| Variable        | symbol | Mean  | Median | Maximum | Minimum | Standard deviation |
|-----------------|--------|-------|--------|---------|---------|--------------------|
| Cpayout         |        | 0.250 | 0.163  | 12.447  | 0       | 0.472              |
| MP-tight        |        | 0.431 | 0      | 1       | 0       | 0.495              |
| Size            |        | 9.568 | 9.521  | 11.814  | 6.696   | 0.539              |
| Croa            |        | 0.048 | 0.040  | 0.695   | -1.495  | 0.084              |
| Growth          |        | 7.371 | 0.153  | 12151.66| -568.864| 257.943            |
| Lev             |        | 0.556 | 0.525  | 55.409  | 0.030   | 1.075              |
| Soe             |        | 0.613 | 1      | 1       | 0       | 0.487              |
| Pro             |        | 0.268 | 0      | 1       | 0       | 0.443              |
| East            |        | 0.610 | 1      | 1       | 0       | 0.488              |
| Y2008           |        | 0.18  | 0      | 1       | 0       | 0.381              |

Panel B: Sub-sample descriptive statistics at different stages of monetary policy

| Monetary policy | Number of observations | Mean  | Median | Maximum | Minimum | Standard deviation |
|-----------------|------------------------|-------|--------|---------|---------|--------------------|
| (1)Tight        | 1407                   | 0.211 | 0.121  | 12.447  | 0       | 0.460              |
| (2)Loose        | 1861                   | 0.280 | 0.203  | 6.603   | 0       | 0.478              |
| (1)-(2)         | 4.142*** (T value)     |       |        |         |         |                    |

Note: *** , **, *, respectively represent significant at the level of 1%, 5% and 10%.

The mean and median of Cpayout are respectively 25.02% and 16.34%, closing to the reference literature. The observation proportion of MP_tight is 43.06%. Panel B shows that the cash dividend payment rate in the tightening monetary policy stage is 21.10%, which is 28% in the loosening monetary policy stage. According to the correlation coefficient matrix, the correlation coefficient between Cpayout and MP_tight is negative and significant at the 1% level and there is no high correlation between explanatory variables and control variables.

Research Hypothesis 1 Test: Tightening Monetary Policy and Cash Dividend Payment Rate

Table 3 reports the test results of hypothesis 1.

Table 3. Tightening Monetary Policy and Cash Dividend Payment Rate.

|                   | (1)Full sample | (2)Full sample | (3)Full sample |
|-------------------|----------------|----------------|----------------|
| MP-tight          | -0.068826***   | -0.080***      |                |
|                   | (-4.14)        | (-4.40)        |                |
| Size              | 0.097***       | 0.097***       |                |
|                   | (6.02)         | (6.01)         |                |
| Croa              | -0.152         | -0.131         |                |
|                   | (-1.34)        | (-1.16)        |                |
| Lev               | -0.016*        | -0.016*        |                |

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In column (1) regression, the coefficient of size is positive and significant at the 1% level. Larger companies tend to pay more cash dividends. In column (2) regression, the coefficient of MP_tight is negative and significant at the 1% level. In column (3) regression, the coefficient of MP_tight remains negative and significant at the 1% level. The results in table 3 show that under the tight monetary policy, the cash dividend payout rate of the company is lower and support hypothesis 1.

Research Hypothesis 2 Test: Tightening Monetary Policy, Financing Constraints and Cash Dividend Payment Rate

In this paper, three variables, Size, Soe and East, are selected to describe the financing constraints faced by the company. The test results are reported in table 4.

Table 4. Tightening Monetary Policy, Financing Constraints and Cash Dividend Payment Rate.

|        | (1) Large Size | (2) Small Size | (3) State-owned | (4) Non-state-owned | (5) Eastern | (6) Non-eastern |
|--------|----------------|----------------|-----------------|---------------------|------------|----------------|
| MP_tight | -0.079*** | -0.070*** | -0.043* | -0.125*** | -0.067*** | -0.086** |
|        | (-2.97) | (-2.91) | (-1.70) | (-5.20) | (-3.20) | (-2.64) |
| Size   | 0.068** | 0.247*** | 0.132*** | 0.113** | 0.113*** | 0.136*** |
|        | (1.99) | (6.36) | (5.74) | (5.01) | (5.89) | (4.39) |
| Soe    | 0.016(0.552) | -0.139 | -0.013 | 0.025 | -0.017 | 0.009 |
|        | (-0.63) | (-1.01) | (-0.57) | (1.08) |
| East   | -0.010(-0.39) | 0.022 | 0.025 | -0.083 | 0.028 |
| Cons   | 0.017(0.05) | -1.969*** | -0.765*** | -0.769*** | -0.580*** | -1.014*** |
|        | (-5.69) | (-3.62) | (-3.60) | (-3.36) | (-3.51) |
| Obs    | 1634 | 1634 | 2004 | 1264 | 1994 | 1274 |
| R²     | 0.0412 | 0.0338 | 0.0313 | 0.0405 | 0.0328 | 0.0196 |
| F      | 7.76 | 6.32 | 8.05 | 7.66 | 9.45 | 4.19 |

Chow test | (1) vs (2) = 9.031*** | (3) vs (4) = 7.454*** | (5) vs (6) = 4.6912***

Note: ***, **, *, respectively represent significant at the level of 1%, 5% and 10%.

The results show that the scale financing constraint has little influence on the enterprise dividend policy under the tight monetary policy; the cash dividend payment of non-state-owned and the non-eastern enterprises is more inhibited under the tight monetary policy. The above experimental results can only partially prove hypothesis 2.
Summary

This paper examines the impact of macro monetary policy and micro financing constraints on cash dividend payment. It is found that the tight monetary policy inhibits the payment of cash dividends. The financing constraints faced by non-state-owned enterprises and non-eastern companies further strengthen the restraining effect of the tight monetary policy on cash dividends.

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