

# Study on the Impact of Government Subsidies on the Level of Corporate Cash Dividend Payments based on a Different Perspective

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**Abstract.** At this stage, China has entered a "new normal" period of economic development in which the government plays a key role in macro-control policies and resource allocation. The level of cash dividend payment is both a guarantee for enterprises to return the rights and interests earned from consumers' investment and to signal to the market that the enterprise is operating well, and a requirement to alleviate the enterprise agency problem and help the capital market operations in an orderly manner. By paying cash dividends, enterprises improve people's livelihood and achieve social equity by sounding the income distribution mechanism. In this paper, a-share listed enterprises from 2016 to 2020 were taken as the research object, the level of cash dividend payment as the explanatory variable, the government subsidy as the explanatory variable, and 9 control variables and 2 virtual variables were selected for probit regression analysis. The results show that government subsidies have a significant effect on the level of cash dividend payment, and there are significant differences in the degree of effect among different types of enterprises, and hypotheses 1 and 2 proposed in this paper are verified.

**Keywords:** Probit Model; Government Subsidies; Level of Corporate Cash Dividend Payments.

## 1. Introduction

At this stage, China has entered a "new normal" period of economic development, where the government plays a key role in macro-control policies and resource allocation. At the same time, government subsidies use signaling effects to enhance the external financing ability of enterprises, which can further increase the enterprise value effectively[1]. It allows for a reasonable redistribution of economic benefits, which can inhibit the trend of high financialization of enterprises, thus promoting the "de-funding" of enterprises and improving the efficiency of the allocation of key resources in society as a whole[2].

The level of cash dividend payment is not only a guarantee that the company will return to the consumers the rights and interests earned from their investments and help the capital market to operate in an orderly manner[3]. By paying cash dividends, enterprises improve their livelihood and achieve social equity by sounding the income distribution mechanism[4]. In recent years, China has attached great importance to the level of cash dividend payment by enterprises. However, since cash dividends are not mandatory, market regulation alone cannot fully play its role, and therefore government subsidies are needed for enterprises.

The effect of government subsidies on related firms has been studied by scholars in many fields. Zhang et al.[5] found a positive correlation between government subsidies and firms' R&D investment, and the greater the R&D support the greater the firms' innovation ability, while a high debt capital structure inhibits the promoting effect of government subsidies. Sinnadurai et al.[6] used OLS regression data by comparing 1732 government-invested listed companies in Malaysia and found that government subsidies are the threshold level at which firms' wealth increases and marginal returns exceed government ownership. Mahani et al.[7] studied the Indonesian government's provision of viability gap funding (VGF) to toll road investments through the form of construction subsidies to identify and analyze the possible risks in these investments. Stadler and Nobes[8] collected data from 559 firms in 15 countries/regions and found that government asset subsidies are economically important for certain firms and that the frequency of subsidies varies widely across

countries. It can be seen that previous studies mainly explored the effect of government subsidies on factors such as market share, cash flow, R&D investment, and consumer surplus, which are all related to the level of cash dividend payment of firms.

Meanwhile, some scholars have also studied the effect of government subsidies on the level of cash dividend payments of firms for one or several measures. Changhong Shi et al.[4] analyze the impact of tax incentives on the level of corporate cash dividend payments and the path of action, using a sample of Chinese A-share non-financial listed firms from 2007 to 2019, and find that tax incentives can alleviate the financing constraints faced by firms and increase the level of cash dividend payments. Liu[9] constructed a regression model using data from Chinese listed enterprises from 2006 to 2019 as a sample and found that the increase in government subsidies had no significant effect on the level of dividend payment. Zhang[10] used the two-stage least squares method, the propensity score matching method and the construction of an over-the-top two-period model to find a positive relationship between cash dividends and corporate innovation incentive policies, using A-share listed companies in Shanghai and Shenzhen from 2007 to 2018.

Previous studies on the impact mechanism of government subsidies have mostly considered the level of corporate innovation, sustainability or performance capability. However, most of the studies have only stayed in the technical analysis of a single indicator. This paper digs deeper into the different transmission mechanisms and influence relationships of government subsidies on different types of enterprises in paying cash dividends, so that the government can formulate incentive-based fiscal policies specifically for enterprises in different fields.

However, there are still some limitations in this paper, firstly, the research perspective of this paper is biased towards the positive impact of government subsidies without considering its potential negative impact (crowding out effect). At the same time, the paper only considers them from a broad perspective, without further refinement of the performance and characteristics of enterprises. In the future, the influence paths between government subsidies, enterprise types and cash dividend payment levels can be studied in depth based on the life cycle, internal management and regional differences of different enterprises.

## 2. Theoretical Analysis and Research Hypothesis

### 2.1 Theoretical Analysis

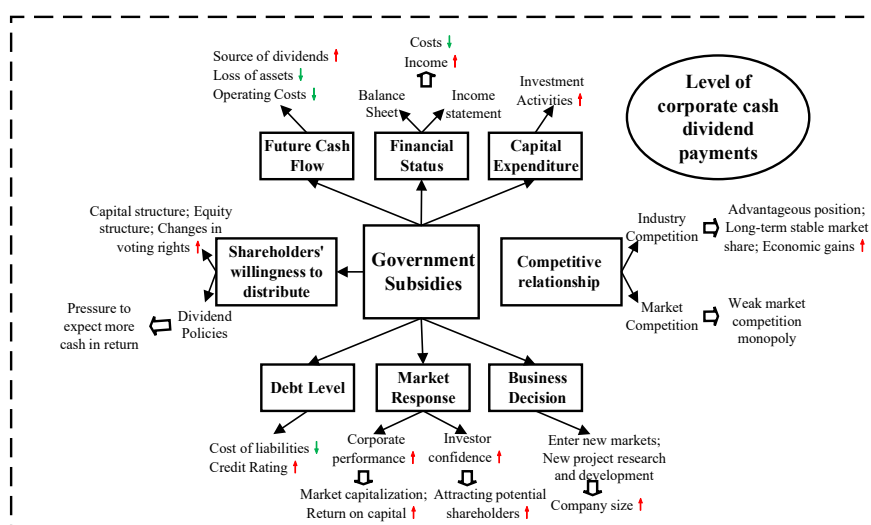


Figure 1. Neural network structure

China is now in a special stage of "emerging plus transition", where the government plays a key role in the allocation of market resources and economic regulation[11]. At the cash flow level, government subsidies may improve the financial position by offsetting some of the asset losses or operating costs. From a market perspective, government subsidies may be perceived as a recognition

of corporate performance[12], allowing for increased investor confidence and influencing stock prices.

And at the level of ongoing business operations, government subsidies can change a firm's business decisions to use this cash flow for research and development of new projects[13], equipment purchases, and employee bonuses. However, government subsidies run the risk of weakening market competition in some cases and may allow certain firms to develop monopolistic positions, thus resisting external, more favorable market habits. This market influence may make it difficult for firms to face market choices such as continuing to pay dividends to chase declines. The specific impact mechanism is shown in Figure 1.

## 2.2 Research Hypothesis

### (i) Government subsidies and the level of cash dividend payment of enterprises

Government subsidies are financial support to enterprises through direct subsidy funds, tax incentives, loan support, investment, assistance to enterprises to reduce their burden, and scientific and technological research and development support, which promote the development of enterprises. In this case, enterprises may be affected by government subsidies when paying cash dividends. Specifically, on the one hand, government subsidies make the financing constraints faced by firms lower[14], thus leading to more sources of funds for firms to pay dividends to shareholders. On the other hand, government subsidies may also lead to a different financial position on a firm's balance sheet and income statement, which in turn may affect the level of cash dividend payments by the firm. Based on this, this paper proposes hypothesis 1:

**Hypothesis 1: Government subsidies are significantly and positively correlated with the level of cash dividend payments by firms**

### (ii) Differential effects of different firms when facing government subsidies

As analyzed above, government subsidies help firms to increase the level of cash dividend payments, however, there are still great differences in the extent to which different types of firms respond to government subsidies[15]. Startups such as high-growth firms are prone to cash flow constraints and rely heavily on external financial support. Small and medium-sized enterprises (SMEs), on the other hand, have extremely limited access to financial support due to their smaller size and market share[16], and government subsidies enable them to reduce their financing costs. Large enterprises usually have more extensive financing channels and higher profitability and government subsidies can enable these enterprises to achieve long-term growth while maintaining stable dividend payouts[17]. Base on this, the paper proposes hypothesis 2:

**Hypothesis 2: There are differences in the sensitivity of different types of firms to the level of cash dividend payments generated by government subsidies**

## 3. Empirical Analysis

### 3.1 Sample Selection

This paper takes A-share listed enterprises from 2016 to 2020 as the research object, excludes ST and \*ST enterprises and listed companies with total asset size less than 0, and retains samples with no major data missing and outliers for all indicators. The original data are obtained from WIND and CSMAR databases, and the relevant enterprise annual report data are obtained from the official websites of Shenzhen Stock Exchange and Shanghai Stock Exchange. Considering that extreme values may cause bias to the multiple regressions, this paper uses StataSE17.0 to Winsorize all continuous variables at 1% and 99% levels, and a total of 9378 observations are obtained after screening.

### 3.2 Variable Settings

#### 3.2.1 Explained Variable

Level of cash dividend payout (*Div*) The level of cash dividend payout can be measured by various metrics: Zhang et al.[18] used cash dividend per share as a measure; Qin et al.[19] used the ratio of dividend per share to the year-end price per share as a variable to measure the level of cash dividend payout. To eliminate the differences in tax policies and different companies' financial status and profitability levels, this paper chooses after-tax cash dividends per share as a measure of cash dividend payout level.

#### 3.2.2 Explanatory Variable

Government subsidies (*Sub*) At present, the measurement of government subsidies are mainly divided into absolute and relative measures, with the absolute measure mainly using the amount of government subsidies received by enterprises directly and taking the logarithm[20], while the latter is mainly handled by the ratio of government subsidies to operating income in the current year. In this paper, the data of government subsidies are mainly obtained from the annual reports and periodic announcements released by enterprises, and the absolute measure is used to take the natural logarithm of the amount of government subsidies received by enterprises.

#### 3.2.3 Control Variables

Since the level of cash dividend payment is affected by various factors, the level of indebtedness and enterprise size (*Size*) are selected as control variables. The level of indebtedness is expressed as the asset-liability ratio (*Lev*), which reflects the debt-servicing ability of the enterprise; the size of the enterprise is expressed as the total assets/business revenue. In addition, this paper also draws on related research results and selects cash holding ratio (*Cash*), growth (*Growth*), equity concentration (*Shl*), board size (*Bdsize*), and equity checks and balances (*Cstr*) as control variables to eliminate the sensitive differences among firms. Dummy variables such as the nature of ownership (*Soe*) and dual position concurrently (*Dual*) are also constructed as supplementary variables. In addition, this study controls for year effects and industry fixed effects.

In summary, the variable system constructed in this paper is shown in Table.1:

**Table 1.** Definition of Control Variables

| Variable Type        | Variables Name                  | Variable Code            | Variable Descriptions  |
|----------------------|---------------------------------|--------------------------|--|
| Explained Variable   | Level of Cash Dividend Payments | <i>Div</i>               | Cash dividends per share after tax   |
| Explanatory Variable | Government Subsidies            | <i>Sub</i>               | Use the natural logarithm of the amount of government subsidies received by the enterprise |
| Control Variables    | Enterprise Size                 | <i>Size</i>              | Total corporate assets / Operating income  |
|                      | Gearing Ratio                   | <i>Lev</i>               | Total liabilities at the end of the period / Total assets at the end of the period         |
|                      | Cash Holding Ratio              | <i>Cash</i>              | Net operating cash flow/Total assets   |
|                      | Growth                          | <i>Growth</i>            | Operating income growth rate   |
|                      | Shareholding Concentration      | <i>Shl</i>               | Percentage of shareholding of the largest shareholder                                      |
|                      | Board Size                      | <i>Bdsize</i>            | Ln (number of board members)   |
|                      | Nature of Ownership             | <i>Soe</i>               | Dummy variable, 1 for state-owned enterprises, 0 otherwise                                 |
|                      | Double Duty                     | <i>Dual</i>              | Dummy variable, 1 for chairman and general manager, 0 otherwise                            |
|                      | Equity Checks and Balances      | <i>Cstr</i>              | The sum of the shareholdings of the 2nd to 10th largest shareholders                       |
|                      | Year                            | <i>Year</i>              | Annual dummy variables   |
| Industry             | <i>Ind</i>                      | Industry dummy variables |  |

### 3.3 Model Construction

The main models used in the study of cash dividend payment levels are mostly multiple linear regression and factor analysis. Based on this, this paper adopts the multiple linear regression method and uses the logic model to analyze multiple variables. The model was developed as follows:

$$Div_{it} = \beta_0 + \beta_1 \times Sub_{it} + \beta_2 \times Controls_{it} + \sum Ind_i + \sum Year_t + \varepsilon_{it} \tag{1}$$

## 4. Empirical Results and Analysis

### 4.1 Descriptive Analysis

A total of 2897 A-share listed enterprises were selected as the overall sample in this paper, and descriptive statistics were analyzed for each variable of 9378 sample individuals in the interval of 2016 to 2020, as detailed in Table.2.

**Table 2.** Descriptive Statistics

| Variable      | Obs  | Mean   | Std. Dev. | Min    | Max     |
|---------------|------|--------|-----------|--------|---------|
| <i>Div</i>    | 9378 | 0.203  | 0.449     | 0.001  | 19.293  |
| <i>Sub</i>    | 9377 | 17.253 | 1.602     | 8.294  | 23.558  |
| <i>Shl</i>    | 9378 | 35.177 | 14.456    | 4.08   | 88.24   |
| <i>Soe</i>    | 9378 | 0.312  | 0.463     | 0      | 1       |
| <i>Cstr</i>   | 9378 | 25.904 | 12.627    | 1.06   | 66.76   |
| <i>Dual</i>   | 9378 | 0.306  | 0.461     | 0      | 1       |
| <i>Cash</i>   | 9378 | 0.061  | 0.067     | -0.744 | 0.664   |
| <i>Growth</i> | 9378 | 0.56   | 6.904     | -3.027 | 434.593 |
| <i>Lev</i>    | 9378 | 0.396  | 0.186     | 0.014  | 0.925   |
| <i>Bdsize</i> | 9378 | 2.268  | 0.25      | 1.386  | 3.258   |
| <i>Size</i>   | 9296 | 2.407  | 2.667     | 0.088  | 79.627  |

As can be seen from Table.2, the maximum and minimum values of cash dividend payment level (*Div*) are 19.293 and 0.001 respectively, which indicates that there are still significant differences between different companies in terms of the strength and implementation of cash dividend payment. Some companies effectively promote the cash dividend payment method and devote more profits to shareholder benefit distribution, while others are less willing to use cash dividends for profit distribution due to company size and industry characteristics. At the same time, government subsidies (*Sub*) also have a large gap between different enterprises, with the maximum value of 23.558 and the minimum value of 8.294. It can be seen that the government will take certain subsidies to each enterprise, but there is still a large gap in the degree of subsidies.

### 4.2 Correlation Analysis

**Table 3.** Correlation analysis

| Variables          | (1)       | (2)       | (3)       | (4)       | (5)       | (6)       | (7)       | (8)      | (9)       | (10)     | (11)  |
|--------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|-----------|----------|-------|
| (1) <i>Div</i>     | 1.000     |           |           |           |           |           |           |          |           |          |       |
| (2) <i>Sub</i>     | 0.075***  | 1.000     |           |           |           |           |           |          |           |          |       |
| (3) <i>Shl</i>     | 0.109***  | 0.068***  | 1.000     |           |           |           |           |          |           |          |       |
| (4) <i>Soe</i>     | 0.011     | 0.160***  | 0.241***  | 1.000     |           |           |           |          |           |          |       |
| (5) <i>Cstr</i>    | 0.046***  | -0.025**  | -0.476*** | -0.277*** | 1.000     |           |           |          |           |          |       |
| (6) <i>Dual</i>    | 0.007     | -0.072*** | -0.030*** | -0.306*** | 0.090***  | 1.000     |           |          |           |          |       |
| (7) <i>Cash</i>    | 0.272***  | 0.083***  | 0.081***  | -0.036*** | 0.047***  | 0.006     | 1.000     |          |           |          |       |
| (8) <i>Growth</i>  | -0.010    | 0.005     | 0.007     | 0.024**   | 0.001     | 0.020*    | -0.019*   | 1.000    |           |          |       |
| (9) <i>Lev</i>     | -0.070*** | 0.281***  | 0.073***  | 0.257***  | -0.110*** | -0.108*** | -0.193*** | 0.058*** | 1.000     |          |       |
| (10) <i>Bdsize</i> | -0.020**  | 0.103***  | 0.030***  | 0.307***  | -0.054*** | -0.159*** | 0.009     | 0.035*** | 0.126***  | 1.000    |       |
| (11) <i>Size</i>   | -0.054*** | -0.119*** | 0.015     | 0.075***  | -0.013    | -0.031*** | -0.149*** | 0.013    | -0.029*** | 0.036*** | 1.000 |

Notes: \*\*\*p<1%, \*\*p<5%, \*p<10%

Table.3 demonstrates the correlation coefficients between all variables. Among them, the correlation coefficients between government subsidies (*Sub*) and the level of cash dividend payment

(*Div*) of enterprises are positive and significant at the 1% level, indicating that government subsidies can promote the level of cash dividend payment of listed enterprises in China to a certain extent, which tentatively verifies the hypothesis proposed in this paper.<sup>1</sup> In addition, the correlation coefficients between the level of cash dividend payment (*Div*) and equity concentration (*ShI*), equity checks and balances (*Cstr*) and cash holding ratio (*Cash*) are also positive and significant at the 1% level. There is also a significant positive relationship between government subsidies (*Sub*) and equity concentration (*ShI*), cash holding ratio (*Cash*), gearing ratio (*Lev*), and board size (*Bdsize*) at the 1% level, which can effectively improve the business situation and equity structure of firms.

### 4.3 Regressivity Analysis

Due to the use of discrete data and multiple-choice model, in order to test hypothesis 1, the probit model is chosen in this paper to explore the relationship between government subsidies and the level of corporate cash dividend payments, and the results of the benchmark regression are shown in Table.4. As can be seen from Table.4, the adjusted R<sup>2</sup> is 0.149 and the F-value is 27.95, both of which are significant at the 1% level, indicating that the fit of the model is high and the model is more significant. The regression coefficient of government subsidies is 0.021 and is significant at the 1% level, which indicates that the finding that government subsidies significantly contribute to the level of cash dividend payments by firms is more robust. The greater the government subsidies to the firms, the higher the level of cash dividend payout of the firms. This may be since government subsidy policy to enterprises can effectively alleviate the financing constraints of enterprises, expand their disposable cash flow and enhance their profitability. Based on this, enterprises have the ability and incentive to reward shareholders with certain cash dividends, thus increasing the level of cash dividend payments. Hypothesis 1 is verified.

**Table 4.** Regression results of government subsidies and the level of cash dividend payments by firms

| Variables     | <i>Div</i> | T-value | P-value |
|---------------|------------|---------|---------|
| <i>Sub</i>    | 0.021***   | 3.600   | 0.000   |
| <i>ShI</i>    | 0.004***   | 6.790   | 0.000   |
| <i>Soe</i>    | 0.025      | 0.900   | 0.367   |
| <i>Cstr</i>   | 0.003***   | 7.360   | 0.000   |
| <i>Dual</i>   | 0.000      | 0.050   | 0.963   |
| <i>Cash</i>   | 1.512***   | 5.690   | 0.000   |
| <i>Growth</i> | 0.000      | 0.250   | 0.806   |
| <i>Lev</i>    | -0.123***  | -4.320  | 0.000   |
| <i>Bdsize</i> | -0.058     | -1.410  | 0.158   |
| <i>Size</i>   | -0.001     | -0.630  | 0.526   |
| <i>_cons</i>  | -0.297*    | -1.930  | 0.054   |
| <i>Ind</i>    | Yes        | Yes     | Yes     |
| <i>Year</i>   | Yes        | Yes     | Yes     |
| Sample Size   | 9,295      | F-value | 27.95   |
| Adj R-squared | 0.149      | P-value | 0.000   |

### 4.4 Endogeneity Test

Considering that government subsidies are national macro policies and cash dividends are micro behaviors of enterprises, their influence on the formulation of national related adjustment policies is small, so the possibility of reverse causality in this paper is small, but there is still a possibility that omitted variables have an impact on the empirical results. Based on the instrumental variables approach and the main variables lagged by one period, this paper further explains the endogeneity issue. Specifically, in this paper, the variables other than the explanatory variables are lagged by one period and substituted into the above model (1) for regression, and the results are shown in Table.5.

**Table 5.** Endogeneity test

| Variables       | <i>Div</i> | T-value | P-value |
|-----------------|------------|---------|---------|
| <i>L.Sub</i>    | 0.018*     | 1.850   | 0.064   |
| <i>L.Sh1</i>    | 0.004***   | 5.100   | 0.000   |
| <i>L.Soe</i>    | 0.037      | 1.050   | 0.292   |
| <i>L.Cstr</i>   | 0.003***   | 5.930   | 0.000   |
| <i>L.Dual</i>   | 0.006      | 0.510   | 0.610   |
| <i>L.Cash</i>   | 1.367***   | 3.800   | 0.000   |
| <i>L.Growth</i> | 0.000      | 1.310   | 0.190   |
| <i>L.Lev</i>    | -0.078*    | -1.820  | 0.070   |
| <i>L.Bdsize</i> | -0.060     | -1.220  | 0.223   |
| <i>L.Size</i>   | -0.000     | -0.060  | 0.956   |
| <i>cons</i>     | -0.258     | -1.190  | 0.235   |

In Table.5, the coefficient of government subsidies is positive and significant at the 10% level, indicating that government subsidies still have a catalytic effect on the level of cash dividend payments by firms after adopting a lag period to mitigate the impact from endogenous problems.

#### 4.5 Robustness Test

**Table 6.** Regression results of total cash dividends/total shareholders' equity at year-end

| Variables        | <i>Div1</i> | T-value | P-value |
|------------------|-------------|---------|---------|
| <i>Sub</i>       | 0.0012***   | 3.3300  | 0.0010  |
| <i>Sh1</i>       | 0.0005***   | 11.0500 | 0.0000  |
| <i>Soe</i>       | -0.0070***  | -5.0500 | 0.0000  |
| <i>Cstr</i>      | 0.0004***   | 7.8300  | 0.0000  |
| <i>Dual</i>      | -0.0012     | -1.1100 | 0.2660  |
| <i>Cash</i>      | 0.1871***   | 15.1400 | 0.0000  |
| <i>Growth</i>    | -0.0000*    | -1.7800 | 0.0750  |
| <i>Lev</i>       | -0.0138***  | -3.8600 | 0.0000  |
| <i>Boardsize</i> | -0.0004     | -0.2000 | 0.8420  |
| <i>Size</i>      | -0.0007***  | -2.6100 | 0.0090  |
| <i>cons</i>      | -0.0167**   | -2.2200 | 0.0260  |

**Table 7.** Regression results of cash dividends/sales revenue

| Variables        | <i>Div2</i> | T-value  | P-value |
|------------------|-------------|----------|---------|
| <i>Sub</i>       | 0.0015***   | 2.6800   | 0.0070  |
| <i>Sh1</i>       | 0.0006***   | 7.9400   | 0.0000  |
| <i>Soe</i>       | -0.0047**   | -2.4200  | 0.0160  |
| <i>Cstr</i>      | 0.0005***   | 6.5000   | 0.0000  |
| <i>Dual</i>      | -0.0000     | -0.0200  | 0.9870  |
| <i>Cash</i>      | 0.1931***   | 11.4000  | 0.0000  |
| <i>Growth</i>    | -0.0000     | -0.1600  | 0.8750  |
| <i>Lev</i>       | -0.0900***  | -17.2200 | 0.0000  |
| <i>Boardsize</i> | 0.0007      | 0.2700   | 0.7880  |
| <i>Size</i>      | 0.0123***   | 3.2400   | 0.0010  |
| <i>cons</i>      | -0.0237     | -1.2300  | 0.2200  |

To further examine whether the regression results of hypothesis 1 are affected by the dependent variable measures, this paper uses the alternative variables approach and model change form to test the robustness of the relationship between government subsidies and the level of corporate cash dividend payments. (1) Substitution of the explanatory variable: total cash dividends/total shareholders' equity at the end of the year (*Div1*). The measure of cash dividend payment level is replaced with the ratio of total cash dividends to total shareholders' equity at year-end. As can be seen from Table.6, the regression coefficient of government subsidies is 0.0012 and significant at the 1% level, indicating that the greater the degree of government subsidies, the more cash dividends are paid

out by enterprises, further verifying the inference of hypothesis 1. (2) Replace the explanatory variable: cash dividends/sales revenue (*Div2*). In this paper, the measure of cash dividends is replaced with the ratio of cash dividends to sales revenue. As can be seen from Table.7, the regression coefficient of government subsidies is 0.0015 and is significant at the 1% level, further verifying hypothesis 1 and proving the robustness of the regression results.

#### 4.6 Industry Heterogeneity Analysis

In order to test hypothesis 2 proposed in this paper, this paper divides all enterprises into 13 major categories according to industry characteristics and groups the sample data for regression respectively. Combined with Table.8, it can be seen that for wholesale and retail and new manufacturing industries, the regression coefficients of government subsidies are 0.0268 and 0.0284 respectively, both of which are significantly positive at the 1% level, indicating that government subsidies have a significant positive contribution to the level of cash dividend payments in these two industries. For agriculture, forestry, animal husbandry and fishery and electricity, heat, gas and water production and supply industries, the regression coefficients of government subsidies are 0.0668 and 0.0111, respectively, both of which are significantly positive at the 10% level. Meanwhile, the regression coefficient of government subsidies for the real estate industry is 0.0368 and is significantly positive at the 5% level. On the contrary, for industries such as construction, transportation, warehousing and so on, the coefficients are relatively small or even negative in some cases and the results are not significant, which indicates that government subsidies do not bring significant promotion effect. Based on this result, hypothesis 2 holds.

**Table 8.** Heterogeneity analysis: based on industry heterogeneity perspective

| Variables  | Number of observations | Sub coefficient |
|--|------------------------|-----------------|
| Agriculture, forestry and fisheries                                    | 78                     | 0.0668**        |
| Electricity, heat, gas and water production and supply industry        | 306                    | 0.0111*         |
| Real estate  | 277                    | 0.0368**        |
| Building industry  | 264                    | 0.0074          |
| Transportation, storage and postal industry                            | 306                    | -0.0086         |
| Scientific research and technical services                             | 111                    | -0.0028         |
| Wholesale and retail   | 399                    | 0.0268***       |
| Water, environment and public facilities management industry           | 151                    | 0.0066          |
| Culture, sports and entertainment                                      | 123                    | 0.0111          |
| Information transmission, software and information technology services | 725                    | 0.0069          |
| Traditional manufacturing  | 1626                   | 0.0137          |
| New manufacturing  | 4698                   | 0.0284***       |
| Leasing and business services  | 126                    | 0.0020          |

## 5. Conclusion and Recommendations

### 5.1 Conclusion

Based on the disparity perspective, prospect theory, information asymmetry theory and financing preference theory, this paper investigates the relationship between government subsidies and the level of corporate cash dividend payments through benchmark regression as well as heterogeneity analysis using unbalanced panel data of A-share listed companies from 2016 to 2020. The empirical results of this paper find that:

- (1) Government subsidies can significantly increase the level of cash dividend payments of enterprises
- (2) Different types of enterprises have different sensitivities when facing government subsidies

(3) Enterprises in different regions behave differently when facing government subsidies

## 5.2 Policy Recommendations

First of all, the government should further expand the degree of government subsidies to relevant enterprises in order to achieve a perfect income distribution system and social equity. Second, the government should scientifically assess the overall business situation of the enterprise, and the amount and manner of the subsidy should be appropriate to the actual needs of the enterprise. In addition, the government can reduce its reliance on cash dividend payments by directing companies to spend more on investment, research and development, etc. through tax policies and other measures. Finally, by introducing regulatory measures, the government requires companies to disclose their distribution policies and set minimum distribution ratios to protect the rights and interests of minority shareholders.

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