

The Effects of Deleveraging Policy on Cash Dividends

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Abstract: *This paper examines the effect of deleveraging policies on cash dividends by using the difference-in-difference (DID) model based on the panel data of Chinese A-share non-financial firms from the 2008-2020. The results indicates that the deleveraging policy can promote enterprise dividend, with a marginal utility of 0.06%.*

Keywords: *Deleveraging Policy; Cash Dividends; Difference-in-difference*

1. Introduction

Since the 1990s, China's economy has been in a highly leveraged level and many enterprises have fallen into the dilemma of technical bankruptcy. Too high leverage ratio may bring systemic debt default risk, which will make the financial market unable to operate normally. Bank runs and enterprise bankruptcies will also occur in a large number, which will spread to other social fields, causing financial crisis. The US subprime crisis in 2008, which started from the "high leverage" in the real estate industry and then spread to the world economy, is a typical example of the financial crisis caused by "high leverage". The harm of "high leverage" is so great that "deleveraging" becomes a response at the right time.

At present, China is in the critical period of "emerging plus transition". In view of the rapid rise of domestic macro and micro debt leverage, the central economic work conference at the end of 2015 proposed the policy guideline of "Three reductions and one reduction and one compensation", and took the deleveraging policy as an important grip to deepen the supply-side structural reform. The "deleveraging policy" is mainly carried out from the two dimensions of debt reduction and power increase. Under the above background, especially after 2015, the economic consequences of the "deleveraging policy" have become a hot topic of academic discussion, including factors that affect the leverage ratio of enterprises, such as margin trading system, corporate social responsibility, allocation period of financial assets, credit rating, industrial policy, equity incentives Monetary policy environment, etc. After the "deleveraging" policy was put forward, the off-balance-sheet financing shrank significantly, and the bank credit was tight, passing the impact to the financing of the real economy, and the financing difficulties of enterprises were further intensified. Companies facing financial constraints may require greater financial flexibility, and companies are becoming less willing to pay dividends. So in this study, we examine deleveraging policy on cash dividends in China from 2008-2020.

2. Sample Selection and Methodology

2.1 Data and sample selection

This paper takes A-share listed companies from 2008 to 2020 as the research sample. Among them, there are 1287 state-owned enterprises and 3428 non-state-owned enterprises. The financial data used in this paper are all from the WIND database. In order to make the research more accurate, the raw data shall be processed according to the following standards:

- (1) Eliminate financial enterprises
- (2) Eliminate enterprises with incomplete financial data disclosure
- (3) The profitability of enterprises is considered as the control variables, because enterprises with negative net profit and obviously abnormal financial data will be excluded.

In addition, in order to avoid the interference of outliers, this paper carries out Winsorize double-

tailed processing on all continuous variables at the level of 1% and 99%.\

We use the ratio of the total annual cumulative cash dividend to the net profit attributable to the shareholders of the parent company. On this basis, use the enterprise dividend to measure the dividend. In robustness testing, we use whether the enterprise dividend is a virtual variable, according to the dividend situation in the year, if there is a dividend, take 1, if there is no actual dividend behavior in the year, take 0.

Cornaggia et al. (2015)^[1] believes that bank competition can significantly improve the innovation ability of private enterprises that rely on external financing and have a single credit channel. Different from other countries, the main financing channel of Chinese enterprises is completed through bank lending. Braggion and Ongena (2019)^[2] believes that increased competition among banks can not only increase the total amount of credit, further improve the level of corporate debt, but also reduce the financing cost of enterprises.

Treat represents the number of bank ranches within the 10KM range of enterprises in 2015. The larger the value is, the more vulnerable to policy influence.

Post is also a virtual variable. The "deleveraging" policy has been implemented since 2016, with Post=1 set in 2016 and later, and Post=0 set before 2016.

Treat×Post is an interaction term between the time variable (Post) and the treatment variable (Treat) to examine the policy net effect of the deleveraging policy on the treatment group sample. Under the action of the "deleveraging" policy, the coefficient of the interaction item should be positive when the dividend ratio of the enterprise is increased. If the dividend ratio of the enterprise decreases under the "deleveraging" policy, the coefficient of the interaction item should be negative.

This paper mainly selects the economic characteristics of the enterprise level as the control variables. A series of characteristic variables (X) affecting the corporate dividend status: Size, Lev, Growth, ROA, Board_salary, TOP10, Age and Employee. Year and Industry represent year and industry fixed effects, respectively, to ensure that dividends are not affected by macroeconomic factors and policy changes that originate in a particular year and industry.

2.2 Regression models

In order to examine whether the "deleveraging" policy has affected the dividend ratio of enterprises, we use the following empirical model:

$$\text{Div_rate}_{it} = \delta + \beta \text{Post}_t \times \text{Treat}_i + \gamma X_{it} + \lambda_t + \mu_i + \varepsilon_{it} \quad (1)$$

DIV_{it} represents the dividend situation of enterprise i in year t, Post_t is the time variable, Treat_i is the processing variable, and Post_t × Treat_i is the interaction item between the time variable and the processing variable. X is a series of control variables. λ_t is the time fixed effect, μ_i is individual fixed effect. The core of our concern is β. If it is a positive number, it indicates that the "deleveraging" policy can promote the dividend distribution of enterprises.

3. Empirical Results

3.1 Descriptive statistics

Table 1: Descriptive statistics

Variable	Mean	Median	25%	75%	min	max
<i>if_Divide</i>	0.72	0.45	0.00	1.00	0.00	1.00
<i>DIV_rate</i>	0.27	0.30	0.00	0.37	0.00	1.73
<i>Size</i>	8.36	1.33	7.43	9.13	5.49	12.30
<i>Lev</i>	0.44	0.21	0.27	0.60	0.05	0.97
<i>Growth</i>	0.18	0.48	-0.03	0.27	-0.63	3.27
<i>ROA</i>	0.04	0.07	0.01	0.07	-0.28	0.24
<i>Salary</i>	0.34	0.81	-0.16	0.85	-1.90	2.45
<i>Top10</i>	0.58	0.15	0.47	0.69	0.23	0.96
<i>Employee</i>	7.69	1.29	6.84	8.49	4.17	11.07

Table 1 reports the descriptive statistics of this article. From the table, it can be seen that the average

value of the division of labor (*if_DIV*) of enterprises is 72%, indicating that most companies in China have paid dividends, with a standard deviation of 0.45, indicating that there is a large difference in the dividend distribution of companies. DIV is 27% which indicates the proportion of the dividend is low. The maximum value is 173%, indicating that the total cumulative cash dividends of the year is higher than the net profit of the year, and the average value is close to the median value, indicating that the distribution of cash dividends is relatively uniform.

Table 2: Effect of deleveraging policies on cash dividend

variable	(1) DIV_rate	(2) DIV_rate
DID	0.010*** (4.16)	0.006** (2.26)
Size		0.021*** (4.46)
Lev		-0.264*** (-16.32)
Growth		-0.024*** (-6.62)
ROA		0.194*** (5.83)
Salary		-0.001 (-0.25)
Top10		0.174*** (8.15)
Age		-0.158*** (-4.59)
Employee		0.009** (2.10)
Constant	0.244*** (37.71)	0.480*** (4.53)
Observations	26,863	26,863
R-squared	0.352	0.371

*, **, and *** represent significance at the 10%, 5%, and 1% levels, respectively.

Table 3: The Parallel Trend

Variable	DIV_rate
Before ⁻³	0.001 (0.26)
Before ⁻²	0.004 (0.98)
Before ⁻¹	0.004 (0.98)
current	0.008* (1.87)
After ¹	0.010*** (2.61)
After ²	0.004 (0.82)
After ³	0.007 (1.55)
Size	0.021*** (3.88)
Lev	-0.264*** (-13.06)
Growth	-0.024*** (-7.54)
ROA	0.191*** (5.85)
Board_sala	-0.001 (-0.21)
Top10	0.175*** (6.59)
Inagen	-0.160*** (-3.53)
Employee	0.009* (1.80)
Constant	0.479*** (3.48)
N	26,863
R ²	0.371

Table 2 presents the baseline difference-in-difference regression results of the effect of deleveraging policy on cash dividend. Column (1) is the benchmark regression result without control variables. Column (2) adds several firm-specific control variables. It can be seen from the table that the coefficient of Treatment is significantly positive at the level of 1% when adding and not adding control variables, indicating that the sample enterprises affected by the deleveraging policy can effectively promote the dividend situation of enterprises affected by the deleveraging policy compared with the sample enterprises not affected by the deleveraging policy. The main observation variable of this paper is DID (Treat \times Post). When there is no control variable, the coefficient is significantly positive at the level of 1%, which is 0.01, and the coefficient after adding the control variable is still significantly positive at the level of 5%, which is 0.006, indicating that the deleveraging policy has significantly promoted corporate dividend.

At the same time, we set an annual effect model to test the parallel trend hypothesis. If the experimental group and the control group have a common trend that changes with time before the implementation of the deleveraging policy, then the coefficient of the interaction item are not significant. Table 3 presents the parallel trend results. According to the regression results, the traffic items in the four years before the implementation of the policy were not significant, indicating that there was no significant difference between the experimental group and the control group before the implementation of the policy. The two groups of samples met the parallel trend assumption before 2016.

4. Robustness

4.1 Transform how the explanatory variable is measured

In order to eliminate the deviation of the empirical results caused by the difference in variable measures to some extent and ensure the unbiased of the empirical results, the explained measurement method is chosen to be changed. The proportion of dividend reflects the dividend willingness of the enterprise in the current year, so the enterprise dividend ratio is changed into whether the enterprise has dividend behavior in the same year. If the enterprise has dividends in the current year, *if_DIV* will take 1; if there is no dividend behavior in the current year, *if_DIV* will take 0. Table 4 shows the result of the robust test. The coefficient is significant.

4.2 Sub-sample test

Table 4: Robustness

	(1)	(2)
	Transform how the explanatory variable is measured	Sub-sample test
DID	0.006* (1.71)	0.009* (1.70)
Size	0.021*** (3.91)	0.058*** (4.38)
Lev	-0.003*** (-13.05)	-0.272*** (-6.56)
Growth	-0.024*** (-7.57)	-0.018** (-2.17)
ROA	0.194*** (5.94)	1.847*** (24.50)
Board_sala	-0.001 (-0.21)	0.034*** (3.72)
Top10	0.174*** (6.57)	0.213*** (4.00)
lnagen	-0.158*** (-3.50)	-0.320*** (-3.69)
Employee	0.009* (1.80)	0.014 (1.26)
Constant	0.480*** (3.48)	0.964*** (3.61)
N	26,863	14,125
R2	0.371	0.603

In the previous study, the years of 2016 and later were taken as the year of policy implementation. Considering that the effect of policy implementation may have lag effect and expected effect, the samples

of 2015 and 2016 were deleted, and only the data of each three years before and after the implementation of the policy were retained. The results are still significant, and the study conclusions are robust.

5. Heterogeneity

5.1 Scale

Larger companies tend to face less financial constraints and easier access to capital markets, further obtaining more stable and mature profits; instead, small companies may face more serious financial constraints due to their limited size. By contrast, big companies may be more willing to pay cash dividends. According to the WIND classification standard, according to the industry categories, categories, medium categories, combined categories, employees, operating income, total assets and other indicators or alternative indicators, China's enterprises are divided into four categories: large, medium, medium, small and micro. Based on this standard, this paper divides enterprises into large enterprises and small, medium and micro enterprises. From the regression results (1) and (2), the promotion effect of "deleveraging policy" on the dividend behavior of large enterprises is significant at the level of 10%, while the promotion effect on small, medium-sized enterprises is not obvious.

5.2 Regional

Unbalanced regional development is a common problem facing countries with large land areas. China has a vast territory, and different regions' economic development level and institutional environment are significantly different. Coastal cities have unique geographical advantages, which can not only improve the local economic conditions through domestic demand, but also increase their income through import and export. Not only that, the coastal cities still have some tax preferential policies. Based on the above background, the impact of the "deleveraging" policy on the cash dividends of enterprises in different regions may also be different. Therefore, this paper takes the dividend ratio of enterprises as the explanatory variable, and studies the regional heterogeneity of deleveraging policy on enterprise dividends. The results of columns (3) and (4) show that for enterprises located in coastal cities, the promotion effect of deleveraging policy on corporate dividends is significant at 1%, while not significant for non-coastal cities.

Table 5: Heterogeneity

	(1)	(2)	(3)	(4)
	Large	Small	Coastal	Outland
DID	0.009* (1.85)	0.014 (1.29)	0.014*** (2.60)	0.001 (0.17)
Size	0.097*** (9.27)	0.073*** (3.57)	0.098*** (8.85)	0.086*** (4.78)
Lev	-0.004*** (-10.74)	-0.003*** (-5.22)	-0.004*** (-10.02)	-0.003*** (-6.84)
Growth	-0.021*** (-3.20)	0.016 (1.40)	-0.009 (-1.23)	-0.020** (-1.99)
ROA	1.830*** (27.27)	1.346*** (12.29)	1.849*** (27.19)	1.401*** (13.50)
Board_sala	0.023*** (3.17)	0.031** (2.09)	0.014* (1.75)	0.048*** (4.46)
Top10	0.267*** (6.14)	0.315*** (3.23)	0.295*** (6.33)	0.254*** (3.42)
lnagen	-0.291*** (-4.39)	-0.488*** (-3.28)	-0.318*** (-4.44)	-0.252** (-2.23)
Employee	-0.000 (-0.05)	0.027 (1.57)	0.006 (0.67)	0.012 (0.78)
Constant	0.667*** (3.29)	1.147** (2.45)	0.668*** (3.03)	0.532 (1.60)
N	22,371	4,492	18,299	8,564
R ²	0.514	0.578	0.525	0.548

6. Conclusion

Based on the current high leverage ratio of state-owned enterprises, various policies have been issued since 2015 to reduce the leverage ratio of enterprises. We focus on the impact of "deleveraging policy" on corporate dividend behavior. Using the financial data of China's A-share non-financial listed companies from 2008 to 2020, this paper finally obtains 26863 observations of 2501 listed companies. The results show that the deleveraging policy can promote enterprise dividend, with a marginal utility of 0.06%. From the perspective of enterprise heterogeneity, large enterprises are more obvious than small enterprises, and more significant than western enterprises, while central enterprises are inhibitory.

References

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