Does Cost Stickiness Affect the Cash Dividend Policy: Empirical Evidence from China

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Abstract: The dividend policy has long been of interest among researchers that study financial management and corporate finance. Previous literatures mainly analyzed based on the agency theory, free cash flow theory, major shareholder benefit transfer channel or others, the impact of cost stickiness has not been considered in the framework. Using the data of listed companies in China from 2007 to 2017, this paper examines the effect of cost stickiness on cash dividend policy based on managers' self-interest. The result shows that firms with stickier cost pay lower cash dividends than their peers. Corporate governance will impact the relation between cost stickiness and cash dividend payouts: when corporate governance is worse, the impact of cost stickiness on cash dividend payouts is great as managers of firms with more cash holdings are willing to keep cash for self-use rather than pay dividends. Further, this paper provides evidence that cost stickiness affects cash dividends by worsening corporate governance. This paper not only contributes to accounting literature on cost stickiness, but also sheds new light on the determinants of cash dividends policy.

Keywords: Corporate Governance, Cash Dividend Policy, Cost Stickiness, Cash Holdings

1. Introduction

The agency problem between shareholders and managers caused by separation of ownership and management rights and the agency problem between major shareholders and minority shareholders due to the imperfect capital market and laws are very common for Chinese companies. Cash dividend policy, as an important financial decision of a company, can effectively alleviate the conflict of interest. Since Miller and Modigliani, the issue of cash dividend policy has been the focus of academic research [1]. The "mystery of dividends" has drawn great attention from academics and practitioners. Thereafter, scholars have mainly study cash dividend policy through the agency cost theory, free cash flow theory, the large shareholder interest transfer hypothesis and the enterprise life cycle theory, ignoring the impact of cost accounting on cash dividend policy. [2-5] DeAngelo et al. prove that "reported surplus" is a key driver of companies' dividend policy [6]. Costs are a fundamental determinant of surplus, and cost behavior will have a very important impact on a company's dividend policy. Therefore, from a new perspective, this paper examines whether cost stickiness, an important feature of cost behavior, will affect a company's cash dividend policy.

It is well documented that asymmetric cost behavior refers to a phenomenon: the cost decrement caused by the decrease of sales is less than the cost increment caused by the increase of sales [7]. In the presence of higher resource adjustment costs, managers retain slack resources and are less willing to cut resources when revenues fall, resulting in cost stickiness find that if a company cuts dividends, it will suffer greater losses, so managers will choose to pay a lower level dividends rather than choose not to pay dividends when resource adjustment costs increase. [6, 7] Building on above analysis, this paper suggests that cost stickiness may increase the adverse impact on firms' earnings, which in turn leads to a reduction in cash dividends. Existing literatures on cost stickiness mostly focus on its existence and influencing factors, and relatively few literatures study the economic consequences of cost stickiness. In addition, they more focus on the impact of cost stickiness on earnings forecast, earnings robustness, earnings management, analyst income forecast, analysts' earnings forecast, income smoothing and the value of

enterprise mergers and acquisitions, but do not focus on the relation between cost stickiness and corporate financial decisions. [8-10]

In order to study the relation between cost stickiness and corporate cash dividend payouts, this paper constructs a relation model between cash dividends payment and cost stickiness. The result shows that cost stickiness has an adverse effect on a company's cash dividend payouts. Thus, firms with higher cost stickiness are likely to choose a lower level of cash dividend payouts. Agency problem between shareholders and managers makes the interests of them inconsistent, and managers have the motivation to retain firms' internal resources to enjoy their private interests [3]. Managers' empire-building behavior leads to greater cost stickiness and lower level of cash dividend payouts [7, 11]. Since managers are self-interested, they will take advantage of all possible opportunities to increase their remuneration and wealth. Therefore, when a company has more cash holdings, managers prefer to keep cash in the company and increase the resources under their control, rather than pay cash dividends to shareholders. Based on the median value of cash holdings, this paper divides the sample into two sub-samples of high cash holdings and low cash holdings, and performs fixed-effect regression analysis on these two sub-samples. The result shows that the negative relation between cost stickiness and cash dividend payouts in high cash holdings group is greater than low cash holdings group, which proves our research hypothesis.

This paper mainly contributes to two strands of accounting literature. First, we add a new angle to the literature on the economic consequences of cost stickiness. Prior studies in this growing area have documented that cost stickiness can affect earnings forecast, earnings robustness, earnings management, and analysts' earnings forecast. This paper links the cost behavior to a company's cash dividend policy based on perspective of managers self-interested, verifying that cost behavior could have important effect on a company's financial decisions. Second, it contributes to the large researches on cash dividend policy by providing an economic explanation for cash dividend payouts. The result shows that cost stickiness has a negative impact on cash dividend payouts, which provides a new idea for enterprises to optimize cash dividend policy.

The rest of this paper is organized as follows. Section 1 reviews prior literature and develops the hypothesis. Section 2 describes research design, including data, variable measurement and model specification. Section 3 presents OLS results and analysis. Section 4 discusses robustness test. Section 5 reports the analysis of influence mechanism. Section 6 concludes.

2. Literature Review and Research Hypothesis

2.1. Literature Review on Cash Dividend Policy

Building on the agency cost theory that shows cash dividend payouts can effectively alleviate agency problems and reduce agency costs. Easterbrook applies agency theory to dividend policy [2]. He proposes that companies should not only continue to pay high level of dividends to shareholders, but also raise funds through external channels. In order to raise the required funds from the capital market, managers have to accept external supervision and operate the enterprise in a way that could increase the interests of shareholders, which helps reduce agency costs. This study helps to understand why and how cash dividends reduce agency costs, but the theory put forward by the author is difficult to empirically test. Jensen puts forward the hypothesis of "free cash flow", documenting that when an enterprise has abundant free cash flow, managers may blindly expand the scale of the company, increase the opportunities to invest in low-efficiency projects [3]. Cash dividend payouts can reduce the cash flow retained by the enterprise, and thus restraining managers from damaging the value of the company. This theory is same as Easterbrook [2]. Essentially, it is another aspect of agency cost theory, which reduces the difficulty of empirical testing of agency cost theory. Lang and Litzenberger test and analyze the relation between the market's response to dividends increment and whether a company overinvests, and the research results prove that the "free cash flow" theory was reasonable [4].

Small enterprises in the capital market with a high growth rate need more funds to promote their development and are willing to reduce cash dividend payouts and increase internal capital accumulation, leading to a decrease in the overall probability of cash dividend payouts [12]. DeAngelo et al. explain why firms will pay cash dividends from the perspective of the life cycle of companies, and point out that the level of cash dividend payouts varies according to the development stage of companies [5]. When a company is in the growth stage, there are many investment opportunities but insufficient funds. The company will choose to reduce the probability and level of cash dividend payouts, and tries to keep the funds inside the company as much as possible to promote development. When a company is in the mature stage, the business environment became stable, investment opportunities decrease, and the demand for internal financing decreases. The company will choose to pay cash dividends to build a good relationship with investors. Fairchild et al. had prove that this opinion is reasonable [13]. Life cycle theory is valid in China, and company maturity is positively correlated with cash dividend payouts. They also find that financial leverage has a negative regulating effect on the relation between them, and the positive correlation between them will be weakened by excessive financial leverage.

2.2. Cost Stickiness Literature Review

Prior studies on cost stickiness fall into three broad streams. The first stream of studies documents the existence of cost stickiness. Sticky cost behavior contradicts the traditional cost behavior model, which assumes that costs behave symmetrically for activity increment and decrement. Noreen and Soderstrom first raise the issue of cost disproportionate to their level of activity [14]. Noreen and Soderstrom first discover that as activities increase, cost changes are easier than

activities [15]. Anderson et al. define this cost behavior as "stickiness" and conduct a further investigation to find evidence of sticky cost. Many studies have documented the evidence of Anderson et al. on cost stickiness. [7] Cost stickiness of departments that are considered to be the core part of the business are highest [16]. It is documented that manufacturing industry is the most stickiness industry by comparing cost stickiness of different industries [17]. Calleja et al. compare the cost stickiness behavior of different countries [18].

The second stream of studies examines the impact of economic factors on cost stickiness. Anderson et al. argue that cost behavior is not mechanical and it is affected by the ability of managers to adjust resources [7]. Subramaniam and Weidenmier point out that cost stickiness is the result of an asymmetric response of managers to huge demand changes [17]. The agency problem is one of the mainstream views that affect cost stickiness. It is concluded that there is a significant positive correlation between management's "empire building" motivation and cost stickiness. Chen et al. use Free Cash Flow (FCF), CEO vision, tenure and compensation structure to describe the motivation of managers to establish an empire [11]. By measuring these four variables, they find that cost asymmetry has a positive impact on managers' motivation to build empires due to agency problem. The existing literature suggests that other factors can also contribute to cost stickiness, including resource adjustment costs, management expectations, management overconfidence, financing constraints, etc. [19-21].

The third stream of studies has focused on the economic consequences of cost stickiness. Banker and Chen prove that if the cost stickiness factor is added into the prediction model, the prediction accuracy can be improved [22]. Weiss conducts a sampling survey on the quarterly data of 44,931 industrial enterprises from 1986 to 2005, and the results show that cost stickiness reduces the accuracy of analyst's earnings forecast, and the average accuracy of analyst's earnings forecast for companies with sticky cost behavior was 25% lower than that of companies with anti-sticky cost behavior [20]. Dierynck et al. study the relation between cost stickiness and earnings management. The results show that companies with more symmetrical (and less sticky) cost behaviors are more likely to engage in earnings management [9]. Hartlieb et al., using cross-sectional models and enterprise-specific cost stickiness models, find that the asymmetric response of costs to changes in activity offset the ambition of companies to report smooth profits [23].

2.3. Proposal of Research Hypothesis

Banker et al. point out that the degree of cost stickiness reflects the joint effect of three main determinants of enterprise managers' cost management decisions, and its economic nature has different influences on the dividend policy of the company. The level of resource adjustment costs is a factor that affects cost stickiness [8]. When resource adjustment costs are high, managers are reluctant to cut resources. Therefore, companies with higher adjustment costs may exhibit higher cost stickiness. When sales fall, companies with higher adjustment costs cut fewer resources and their profits fall more than their peers. DeAngelo et al. find that, as

dividends reduction will lead to greater losses of the company, managers are generally unwilling not to pay dividends, but choose to pay lower dividends when the cost of resource adjustment rise [6]. Therefore, it can be expected that the company's cost stickiness is negatively correlated with current cash dividend payments. Based on the above analysis, this paper proposes the following hypothesis:

H1: After controlling for other factors, the stickier the company's cost, the lower its cash dividend payouts.

Corporate governance is also one of the determinants of enterprise cost management. The agency problem caused by the separation of management right and ownership makes the interests of shareholders and managers inconsistent. Driven by the self-interest motive, managers will seek all opportunities to increase income and wealth, thus they will harm the interests of the company and shareholders. When the company has more idle funds, the shareholders hope more dividend distribution, and driven by self-interested motives, managers hope to retain sufficient funds in their enterprises and increase their own discretionary funds in order to establish their own "corporate empire". It is documented that managers are motivated to retain the internal resources of the company to enjoy private interests instead of paying cash dividends to shareholders. When a company holds abundant idle cash and has good investment opportunities, managers tend to keep cash in the company, expands the size of the company and make excessive investment, instead of distributing it to shareholders in the form of dividends. Good corporate governance can supervise managers' behaviors more and reduce their self-interested behaviors, while poor corporate governance cannot effectively supervise managers and managers' self-interested behaviors are more obvious [3]. Firms with inefficient corporate governance often corresponds to higher cash holdings, and large shareholders and managers of large cash-holding companies are more motivated and willing to implement diversified mergers and acquisitions that will undermine shareholder wealth [24]. Therefore, it is predicted that the negative relation between cost stickiness and cash dividend payouts is more significant in the sub-samples of enterprises with more cash holdings. Based on the above analysis, this paper proposes the following hypothesis:

H2: From the perspective of corporate governance, the worse corporate governance, the managers of companies with more cash holdings are more willing to retain cash for their own use, rather than pay dividends, the negative correlation between cost stickiness and cash dividend payouts is more significant.

3. Research Design

3.1. Sample Selection and Data Sources

This article selects the listed companies in China's Shanghai and Shenzhen stock markets as sample. The sample period extends from 2007 through 2017. All sample is based on CSMAR database, and companies are screened according to the following criteria: First, this paper excludes companies with missing data in the sample interval; Second, this paper

excludes companies with obvious errors information, such as zero or negative sales or operating costs; Third, this paper excludes companies which sales is less than SG&A cost; Fourth, this paper excludes companies with negative sales revenue and positive cash dividends; Finally, this paper excludes the sample of financial and insurance companies. Following above criteria, a final sample of 4744 firm-year observations is obtained.

3.2. Variable Measurement

3.2.1. Cash Dividend Payouts

Chay and Suh propose four ways to measure cash dividend payouts: the ratio of cash dividends to profit, the ratio of cash dividends to sales revenue, the ratio of cash dividends plus stock buyback to profit, and the ratio of cash dividend plus stock buyback to sales revenue [25]. In this paper, we choose the ratio of cash dividends per share to stock price per share to measure cash dividend payouts, which accepted by many scholars. The calculation formula can be expressed as Div/MV.

3.2.2. Cost Stickiness

The ABJ model proposed by Anderson et al. has the highest recognition and is accepted by most scholars [7]. The ABJ model is mainly used to measure whether the cost of a firm as a whole is sticky. It also plays an important role in studying the influencing factors of cost stickiness. However, when studying the economic consequences of cost stickiness, this model has great limitations. The degree of cost stickiness of individual companies cannot be measured and the degree of cost stickiness cannot be quantified. This paper takes the difference between the ratio of operating cost to sales in the current period and the ratio of operating cost to sales in the previous period as the change rate of operating cost of an enterprise, and sets two conditions at the same time: First, whether the sales of an enterprise in the current period has declined (D^S); Second, whether the rate of change in operating costs (D^{TC}) is greater than zero, and to judge whether costs of an enterprise is sticky, enterprises with the level of cost stickiness less than or equal to zero have no cost stickiness. The measure of the degree of cost stickiness is as follows:

$$Operating\ Cost\_Ratio = \frac{Operating\ Cost_{i,t}}{SALE_{i,t}} - \frac{Operating\ Cost_{i,t-1}}{SALE_{i,t-1}} \tag{1}$$

$$CostStickiness_{i,t} = OperatingCost\_Ratio \times D^S \times D^{OC} \tag{2}$$

D^S and D^{OC} are both dummy variables, when $\frac{SALE_{i,t}}{SALE_{i,t-1}} < 1$, D^S is equal to 1, otherwise it is 0; when $OperatingCost\_Ratio > 0$, D^{OC} is equal to 1, otherwise it is 0.

3.2.3. Control Variables

Control variables are selected from four aspects: company characteristics, corporate governance, internal control, and profitability. The definitions of the main research variables and control variables in this paper are shown in Table 1:

Table 1. *Variable definition table.*

	Variable symbol	Definition
Dependent variables	Div/MV	cash dividends per share divided by market price per share
	Div/NA	cash dividends per share divided by net asset per share
	Ln(1+Div)	Ln(1+ cash dividends per share)
Independent variables	CostStickiness (OperatingCost)	using operating cost, see formula (1) and (2).
	Size	the natural logarithm of total assets
	Leverage	the ratio of long-term liabilities to total assets
Company characteristic control variables	M/B	equity market value divided by equity book value
	ROAVol	the standard deviation of quarterly ROA (t-3 to t)
	CashHoldings	the ratio of cash to total assets
	Tangibility	the ratio of fixed assets to total assets
	Growth	the growth rate of sales
	FHP	the proportion of fund holdings
Corporate governance control variables	Dual	dummy variable, when the chairman is also the general manager, the value is 1, otherwise it is 0
	Relevance	dummy variable, there is an association value of 1, otherwise it is 0
	Boardsize	natural logarithm of board number
	ES	natural logarithm of the number of executives
Internal control variables	ICdum	If a company has any of the following conditions (1) Internal control self-evaluation report reveals internal control deficiencies (2) Non-standard audit opinion is issued in annual internal control audit report (3) Non-standard audit opinion is issued in the annual financial statement audit report (4) There are irregularities in listed companies (5) There are financial restatements of a company (6) If a company has a loss in the current year, it indicates that there are defects in the internal control of the company, and the value of ICdum is 0
Profitability control variables	Rofa	the ratio of net profit to non-current asset
	Nop	The ratio of net profit to sales revenue

3.3. Model Specification

In this paper, the panel data fixed effects model is used to test the relation between cost stickiness and cash dividend payouts, which can well control the influence of fixed effects and time effects on the regression results, making the regression results more authentic and reliable.

According to the above, the specific model constructed in this paper is as follows:

$$
\begin{aligned}
Div\!\big/\!MV = {}& \alpha_0 + \alpha_1 * CostStickiness_{i,t} + \alpha_2 * Size_{i,t} + \alpha_3 * Leverage_{i,t} + \alpha_4 * M/B_{i,t} + \alpha_5 * ROAVol_{i,t} \\
& + \alpha_6 * CashHoldings_{i,t} + \alpha_7 * Tangibility_{i,t} + \alpha_9 * Growth_{i,t} + \alpha_8 * FHP_{i,t} + \alpha_9 * Dual_{i,t} \\
& + \alpha_{10} * Relevance_{i,t} + \alpha_{11} * Boardsize_{i,t} + \alpha_{12} * ES_{i,t} + \alpha_{13} * ICdum_{i,t} + \alpha_{14} * Rofa_{i,t} \\
& + \alpha_{15} * Nop_{i,t} + YearFE + IndustryFE + \varepsilon_{i,t}
\end{aligned}
\tag{3}
$$

In the model, if $\alpha_1 < 0$, it is proved that the existence of cost stickiness will reduce the cash dividend payouts. If $\alpha_1 > 0$, it is proved that the existence of cost stickiness will increase the cash dividend payouts of a company, and we expect test result is $\alpha_1 < 0$.

***Table 2.** Descriptive statistics of major variables.*

variable	N	Mean	Sd	P25	Median	P75	Min	Max
Div/MV	4744	0.011	0.010	0.004	0.008	0.014	0	0.144
Div/NA	4744	0.032	0.034	0.012	0.023	0.040	0	0.899
Ln(1+Div)	4744	0.138	0.135	0.049	0.095	0.182	0.001	1.386
CostStickiness	4744	0.004	0.018	0	0	0	0	0.265
Size	4744	21.960	1.107	21.180	21.790	22.590	19.290	27.140
Leverage	4744	0.043	0.078	0	0.001	0.055	0	0.674
M/B	4744	2.662	1.832	1.500	2.108	3.167	0.219	23.600
ROAVol	4744	0.028	0.129	0.015	0.022	0.032	0.001	8.613
CashHoldings	4744	0.208	0.143	0.105	0.167	0.273	0.007	0.928
Tangibility	4744	0.230	0.155	0.116	0.203	0.319	0	0.929
Growth	4744	6.230	8.001	0.660	3.160	8.772	0	75.500
FHP	4744	3.389	216.1	0.009	0.136	0.300	-0.797	15000
Dual	4744	0.265	0.442	0	0	1	0	1
Relevance	4744	0.541	0.498	0	1	1	0	1
Boardsize	4744	2.167	0.192	2.079	2.197	2.197	1.386	2.890
ES	4744	1.845	0.352	1.609	1.792	2.079	0	3.135
ICdum	4744	0.001	0.029	0	0	0	0	1
Rofa	4744	1.011	6.615	0.116	0.261	0.576	-88.450	255.600
Nop	4744	0.114	0.124	0.043	0.085	0.147	-0.297	2.100

4. Empirical Results

4.1. Descriptive Statistical Analysis

Table 2 is descriptive statistics of all variables used in the regressions. From the point of cash dividend payouts, the average value of cash dividend payouts (Div/MV) is 0.011, the standard deviation is 0.010, and the maximum value is 0.144, which indicates that different enterprises have different levels of cash dividend payouts, which is consistent with the status of cash dividend payouts of listed companies in China. The alternative variables of cash dividend payouts (Div/NA and Ln(1+Div)) mean values are 0.032 and 0.138 respectively. Regarding cost stickiness, the mean and standard deviation of CostStickiness are 0.004 and 0.018

respectively. From the point of control variables, the average size of enterprises is 2.196 billion yuan, and the average leverage ratio is 4.3%, the average mark-to-book ratio is 2.662, the average volatility of ROA is 2.8%, the average cash holdings is 20.8%, and the average tangibility of assets is 23%, the average sales growth rate of a company is 623%, the average shareholding ratio of institutional investors is 338.9%, the average of holding both positions is 0.265, the average of whether the top ten shareholders are connected is 0.541, the average of board size is 2.167, and the average of executive size is 1.845, the average of quality of internal control is 0.001, the average of the ratio of net profit to non-current asset is 101.1%, the average of the ratio of net profit to sales revenue is 11.4%.

Table 3. The regression result of cost stickiness on corporate cash dividend payouts.

Variables	Div/MV	Div/NA	Ln(1+Div)
	(1)	(2)	(3)
CostStickiness	-0.016**	-0.085***	-0.282***
	(-2.224)	(-3.557)	(-3.477)
Size	-0.001	-0.002	-0.009
	(-1.487)	(-0.894)	(-1.591)
Leverage	-0.005	-0.015	-0.111***
	(-1.383)	(-1.354)	(-3.013)
M/B	-0.001***	0.004***	-0.003
	(-7.643)	(9.075)	(-1.909)
ROAVol	-0.000	0.001	-0.000
	(-0.245)	(0.159)	(-0.018)
CashHoldings	0.000***	0.000***	0.000***
	(9.866)	(6.814)	(13.079)
Tangibility	-0.000	-0.001	-0.082***
	(-0.210)	(-0.157)	(-3.626)
Growth	-0.000	0.000	-0.000
	(-0.397)	(0.131)	(-0.160)
FHP	-0.000***	-0.000**	-0.000
	(-7.225)	(-2.982)	(-0.002)
Dual	-0.000	-0.001	-0.001
	(-0.085)	(-0.856)	(-0.186)
Relevance	-0.000	-0.001	-0.003
	(-1.327)	(-0.700)	(-0.800)
Boardsize	0.001	0.004	0.003
	(0.767)	(0.912)	(0.209)
ES	-0.000	0.001	0.002
	(-0.071)	(0.575)	(0.318)
ICdum	0.001	0.003	0.029
	(0.233)	(0.221)	(0.643)
Rofa	0.000	-0.000	-0.000
	(0.130)	(-0.269)	(-0.628)
Nop	0.019***	0.054***	0.343***
	(9.156)	(7.811)	(14.612)
_cons	0.029**	0.075*	0.399***
	(2.160)	(1.722)	(2.700)
Year fixed effects	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes
Observations	4744	4744	4744
R-squared	0.232	0.107	0.175
F	13.140	5.200	9.200

Note: * represents $p < 0.1$, ** represents $p < 0.05$, *** represents $p < 0.01$, and the values in parentheses are t values.

4.2. The Influence of Cost Stickiness on Cash Dividend Payouts

In order to test hypothesis 1 proposed above, this paper estimates the fixed effect model, considering the industry fixed effect to control the unobstructible time-invariant industry characteristics and the annual fixed effect, so as to reduce the impact of inter-period change on the relation between cost stickiness and cash dividend payouts. According to the calculation formula of dividend payouts proposed by Chay and Suh, the ratio of cash dividends per share to market price per share is used to measure dividend payouts [26]. This paper also uses the ratio of cash dividends per share to net assets per share and Ln (1 + Div) to replace the cash dividend payouts in the model and conducts regression analysis.

Table 3 shows the regression results of cost stickiness and different measures of corporate cash dividend payouts. Column (1) in Table 3 represents the regression test result of the ratio of cash dividends per share to market value per share

and cost stickiness, column (2) represents the regression test result of the ratio of cash dividends per share to net assets per share and cost stickiness, and column (3) represents the regression test result of Ln(1+ Div) and cost stickiness. As can be seen from column (1) of Table 3, the coefficient (t value) of CostStickiness is -0.016 (-2.224), and is significant at 5% statistical level. It can be seen that after controlling other factors, the cost stickiness is negatively correlated with the corporate cash dividend payouts, and the cost stickiness has an inhibitory effect on the company's cash dividend payouts, which means the research hypothesis 1 proposed above. From the column (2) and column (3) of Table 3, the coefficients (t value) of CostStickiness are -0.085 (-3.557) and -0.282 (-3.477) respectively, and both are significant at 1% statistical level, which indicates the results obtained by regression using the two cash dividend payouts alternatives are consistent with the hypothesis 1 presented above, namely cost stickiness is negatively related to the cash dividend payouts. This shows that the result is robust.

Table 4. *Cost stickiness, cash holding and cash dividend payouts.*

Variables	Div/MV		Div/NA		Ln(1+Div)	
	Cashholdings High (1)	Cashholdings Low (2)	Cashholdings High (3)	Cashholdings Low (4)	Cashholdings High (5)	Cashholdings Low (6)
CostStickiness	-0.023**	-0.001	-0.128***	-0.012	-0.417***	-0.029
	(-2.113)	(-0.107)	(-4.232)	(-0.379)	(-3.293)	(-0.273)
Size	0.000	-0.000	-0.001	-0.008***	0.005	-0.028***
	(0.026)	(-0.142)	(-0.406)	(-2.726)	(0.468)	(-2.839)
Leverage	-0.005	-0.005	-0.020	0.003	-0.158***	-0.032
	(-0.945)	(-0.925)	(-1.479)	(0.177)	(-2.782)	(-0.621)
M/B	-0.001***	-0.001***	0.005***	-0.000	0.003	-0.007***
	(-5.266)	(-4.787)	(6.932)	(-0.551)	(1.015)	(-3.851)
ROAVol	-0.000	0.034	-0.001	0.155**	-0.005	0.547**
	(-0.349)	(1.436)	(-0.289)	(2.254)	(-0.330)	(2.347)
CashHoldings	0.000***	0.000	0.000***	0.000**	0.000***	0.000***
	(8.578)	(1.648)	(7.829)	(2.292)	(10.753)	(4.153)
Tangibility	0.002	-0.000	0.004	0.002	-0.057	-0.047
	(0.414)	(-0.117)	(0.404)	(0.279)	(-1.335)	(-1.601)
Growth	-0.000	0.000	0.000	0.002*	-0.000	0.009**
	(-0.423)	(0.058)	(0.193)	(1.731)	(-0.082)	(2.218)
FHP	-0.000***	-0.000***	-0.000	-0.000	-0.000	-0.000
	(-5.309)	(-3.908)	(-1.463)	(-1.064)	(-0.324)	(-0.141)
Dual	-0.000	0.000	-0.005**	0.001	-0.008	0.004
	(-0.196)	(0.678)	(-2.178)	(0.730)	(-0.805)	(0.624)
Relevance	-0.001*	0.000	-0.001	0.001	-0.004	0.000
	(-1.693)	(0.454)	(-0.689)	(0.595)	(-0.625)	(0.084)
Boardsize	0.001	-0.001	0.004	-0.002	0.003	-0.007
	(0.654)	(-0.671)	(0.577)	(-0.361)	(0.105)	(-0.367)
ES	0.001	-0.002*	0.004	-0.004	0.018	-0.016
	(0.825)	(-1.861)	(1.415)	(-1.299)	(1.541)	(-1.577)
ICdum	-0.001	0.000	0.002	-0.006	0.047	-0.031
	(-0.240)	(0.029)	(0.127)	(-0.305)	(0.656)	(-0.451)
Rofa	0.000	-0.000	0.000**	-0.001**	0.001	-0.001
	(0.818)	(-0.723)	(2.278)	(-2.073)	(1.035)	(-0.829)
Nop	0.020***	0.018***	0.063***	0.072***	0.361***	0.311***
	(6.904)	(4.252)	(7.801)	(5.848)	(10.748)	(7.411)
_cons	0.007	0.037*	0.039	0.210***	0.096	0.848***
	(0.355)	(1.690)	(0.674)	(3.311)	(0.399)	(3.931)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2497	2247	2497	2247	2497	2247
R-squared	0.246	0.243	0.189	0.116	0.214	0.190
F	7.914	6.639	5.659	2.730	6.617	4.841

Note: * represents $p < 0.1$, ** represents $p < 0.05$, *** represents $p < 0.01$, and the values in parentheses are t values.

4.3. Cost Stickiness, Cash Holdings and Cash Dividend Payouts

The sample is divided into two groups, the high cash holdings group and the low cash holdings group, based on the median cash holdings, and fixed effect regressions are performed in the two subsamples. Column (1) (3) (5) in Table 4 represent the regression results of enterprises with cash holdings above the median, and column (2) (4) (6) in Table 4 represent the regression results of enterprises with cash holdings below the median. As can be seen from Table 4, in the subsample with high cash holdings, the coefficient (t value) of CostStickiness in column (1) is -0.023 (-2.113), and is significant at 5% statistical level. The coefficients (t value) of CostStickiness in column (3) (5) are -0.128 (-4.232) and -0.417 (-3.293), and are significant at 1% statistical level. While in the subsample of lower cash holdings, the coefficients (t value) of CostStickiness are -0.001 (-0.107), -0.012 (-0.379) and -0. 029 (-0.273) respectively, but all are not significant. And above test results support hypothesis 2 proposed in this paper, from the perspective of corporate governance, the worse corporate governance, the managers of companies with more cash holdings are more willing to retain cash for their own use, rather than pay cash dividends, the negative correlation between cost stickiness and cash dividend payouts is more significant.

Table 5. *Cost stickiness and cash dividend payouts (Robustness test).*

Variables	Div/MV		Div/NA		Ln(1+Div)	
	(1)	(2)	(3)	(4)	(5)	(6)
CostStickiness (TotalCost)	-0.013***		-0.066***		-0.217***	
	(-3.215)		(-5.092)		(-4.878)	
CostStickiness (SG&A)		-0.012***		-0.070***		-0.215***
		(-2.613)		(-4.747)		(-4.277)
Size	-0.001	-0.001	-0.002	-0.002	-0.010*	-0.010
	(-1.541)	(-1.530)	(-0.978)	(-0.985)	(-1.671)	(-1.666)
Leverage	-0.004	-0.004	-0.014	-0.014	-0.107***	-0.108**
	(-1.321)	(-1.328)	(-1.254)	(-1.263)	(-2.919)	(-2.927)
M/B	-0.001***	-0.001***	0.004***	0.004***	-0.003*	-0.003*
	(-7.656)	(-7.679)	(9.092)	(8.995)	(-1.914)	(-1.977)
ROAVol	-0.000	-0.000	0.001	0.001	-0.000	-0.001
	(-0.255)	(-0.261)	(0.144)	(0.135)	(-0.033)	(-0.042)
CashHoldings	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***
	(9.793)	(9.827)	(6.696)	(6.754)	(12.975)	(13.024)
Tangibility	-0.001	-0.001	-0.002	-0.002	-0.085***	-0.084***
	(-0.285)	(-0.267)	(-0.276)	(-0.260)	(-3.744)	(-3.721)
Growth	-0.000	-0.000	0.000	0.000	-0.000	-0.000
	(-0.392)	(-0.395)	(0.141)	(0.138)	(-0.152)	(-0.155)
FHP	-0.000***	-0.000***	-0.000***	-0.000***	-0.000	-0.000
	(-7.278)	(-7.235)	(-3.065)	(-3.007)	(-0.076)	(-0.018)
Dual	-0.000	-0.000	-0.001	-0.002	-0.001	-0.001
	(-0.111)	(-0.116)	(-0.899)	(-0.926)	(-0.224)	(-0.242)
Relevance	-0.000	-0.000	-0.001	-0.001	-0.003	-0.003
	(-1.362)	(-1.331)	(-0.755)	(-0.711)	(-0.852)	(-0.807)
Boardsize	0.001	0.001	0.004	0.004	0.003	0.004
	(0.776)	(0.794)	(0.927)	(0.975)	(0.220)	(0.257)
ES	-0.000	-0.000	0.001	0.001	0.002	0.003
	(-0.080)	(-0.062)	(0.561)	(0.602)	(0.303)	(0.336)
ICdum	0.001	0.001	0.004	0.004	0.033	0.032
	(0.289)	(0.275)	(0.310)	(0.299)	(0.729)	(0.713)
Rofa	0.000	0.000	-0.000	-0.000	-0.000	-0.000
	(0.071)	(0.098)	(-0.362)	(-0.342)	(-0.716)	(-0.686)
Nop	0.019***	0.019***	0.051***	0.052***	0.334***	0.340***
	(8.839)	(9.046)	(7.357)	(7.597)	(14.148)	(14.429)
_cons	0.029**	0.029**	0.079**	0.078*	0.412***	0.409***
	(2.217)	(2.199)	(1.812)	(1.804)	(2.787)	(2.769)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4744	4744	4744	4744	4744	4744
R-squared	0.233	0.233	0.110	0.109	0.177	0.176
F	13.225	13.170	5.379	5.333	9.370	9.290

Note: * represents $p < 0.1$, ** represents $p < 0.05$, *** represents $p < 0.01$, and the values in parentheses are t values.

5. Robustness Test

5.1. Substitution of Cost Stickiness Variable

Operating cost is a commonly used measure when studying cost stickiness [26]. In the robustness test part, we also use two other common cost definitions to measure cost stickiness, including the total cost and the SG&A cost. Table 5 shows the results of regression analysis of Hypothesis 1 using different cost stickiness. Column (1) (3) (5) show the results of stickiness of total cost and different cash dividend payouts indicators. Column (2) (4) (6) show the results of stickiness of SG&A cost and different cash dividend paynouts indicators. The results in Table 5 show that the test results of two alternative measures of cost stickiness and different cash dividend payouts indicators are consistent with hypothesis 1 mentioned above, that is, cost stickiness is negatively correlated with cash dividend payouts, which indicates that the results are robust.

Table 6 shows the results of regression analysis on hypothesis 2 with different cost stickiness measures. Column (1) (2) show the results of regression with operating cost and cash dividend payouts, and column (3) (4) show the results of regression with SG&A and cash dividend payouts. The results in Table 6 show that the results of two alternative measures of cost stickiness and cash dividend payouts are consistent with hypothesis 2 mentioned above. That is, from the perspective of corporate governance, the worse corporate governance, the managers of companies with more cash holdings are more willing to retain cash for their own use, rather than pay dividends, the negative correlation between cost stickiness and cash dividend payouts is more significant.

Table 6. Cost stickiness, cash holdings and cash dividend payouts (Robustness test).

Variables	Div/MV		Div/MV	
	Cashholdings High (1)	Cashholdings Low (2)	Cashholdings High (3)	Cashholdings Low (4)
CostStickiness (OperatingCost)	-0.019***	-0.006		
	(-3.196)	(-0.940)		
CostStickiness (SG&A)			-0.019***	-0.003
			(-2.728)	(-0.507)
Size	0.000	-0.000	-0.000	-0.000
	(0.006)	(-0.133)	(-0.008)	(-0.143)
Leverage	-0.004	-0.005	-0.004	-0.005
	(-0.913)	(-0.911)	(-0.889)	(-0.922)
M/B	-0.001***	-0.001***	-0.001***	-0.001***
	(-5.334)	(-4.742)	(-5.338)	(-4.778)
ROAVol	-0.000	0.036	-0.000	0.035
	(-0.363)	(1.523)	(-0.369)	(1.480)
CashHoldings	0.000***	0.000*	0.000***	0.000*
	(8.485)	(1.652)	(8.516)	(1.659)
Tangibility	0.001	-0.000	0.002	-0.000
	(0.394)	(-0.136)	(0.424)	(-0.131)
Growth	-0.000	-0.000	-0.000	-0.000
	(-0.418)	(-0.174)	(-0.421)	(-0.056)
FHP	-0.000***	-0.000***	-0.000***	-0.000***
	(-5.368)	(-3.916)	(-5.325)	(-3.902)
Dual	-0.000	0.000	-0.000	0.000
	(-0.213)	(0.632)	(-0.229)	(0.651)
Relevance	-0.001*	0.000	-0.001*	0.000
	(-1.744)	(0.453)	(-1.726)	(0.456)
Boardsize	0.002	-0.001	0.002	-0.001
	(0.713)	(-0.656)	(0.738)	(-0.656)
ES	0.001	-0.002*	0.001	-0.002*
	(0.771)	(-1.878)	(0.837)	(-1.873)
ICdum	-0.001	0.000	-0.001	0.000
	(-0.130)	(0.034)	(-0.153)	(0.031)
Rofa	0.000	-0.000	0.000	-0.000
	(0.807)	(-0.720)	(0.790)	(-0.722)
Nop	0.019***	0.017***	0.020***	0.018***
	(6.617)	(4.025)	(6.861)	(4.145)
_cons	0.008	0.037*	0.008	0.037*
	(0.388)	(1.690)	(0.374)	(1.694)
Year fixed effects	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
Observations	2497	2247	2497	2247
R-squared	0.248	0.243	0.247	0.243
F	8.022	6.656	7.970	6.644

Note: * represents $p < 0.1$, ** represents $p < 0.05$, *** represents $p < 0.01$, and the values in parentheses are t values.

5.2. Endogenetic Test

In this paper, the shareholding ratio of institutional investors, the combination of two jobs, whether the top ten shareholders are related, the size of the board of directors and the size of senior executives are selected as control variables, which objectively can reduce the endogenous problem to some extent. In order to further explore the endogeneity problem, the cost stickiness of one lag period is used for regression test. The results in Table 7 and Table 8 are consistent with hypothesis 1 and hypothesis 2, indicating that the results are robust.

Table 7. The regression results of one lag phase cost stickiness to cash dividend payouts.

Variables	Div/MV	Div/NA	Ln(1+Div)
	(1)	(2)	(3)
L. CostStickiness	-0.018*	-0.118***	-0.337***
	(-1.838)	(-3.724)	(-3.317)
Size	-0.001*	-0.010***	-0.025***
	(-1.841)	(-4.237)	(-3.254)
Leverage	-0.009**	-0.016	-0.108**
	(-2.140)	(-1.137)	(-2.369)
M/B	-0.001***	0.003***	-0.004**
	(-5.898)	(6.181)	(-2.031)

Variables	Div/MV	Div/NA	Ln(1+Div)
	(1)	(2)	(3)
ROAVol	0.054**	0.328***	0.990***
	(2.552)	(4.766)	(4.487)
CashHoldings	0.000***	0.000***	0.000***
	(8.952)	(7.070)	(12.903)
Tangibility	-0.002	-0.000	-0.068**
	(-0.858)	(-0.051)	(-2.275)
Growth	0.001**	0.017***	0.022***
	(2.472)	(14.794)	(6.036)
FHP	-0.000***	-0.000***	0.000
	(-5.887)	(-2.832)	(0.340)
Dual	-0.001	-0.003	-0.006
	(-0.933)	(-1.292)	(-0.920)
Relevance	-0.001	-0.001	-0.003
	(-1.119)	(-0.911)	(-0.733)
Boardsize	-0.000	0.002	-0.003
	(-0.261)	(0.369)	(-0.179)
ES	0.001	0.000	0.012
	(1.018)	(0.121)	(1.236)
ICdum	-0.001	0.005	0.031
	(-0.152)	(0.327)	(0.631)
Rofa	-0.000	-0.000	-0.000
	(-0.614)	(-0.767)	(-1.254)
Nop	0.019***	0.045***	0.291***
	(7.220)	(5.364)	(10.697)
_cons	0.044***	0.235***	0.625***
	(2.651)	(4.306)	(3.565)
Year fixed effects	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes
Observations	3266	3266	3266
R-squared	0.225	0.206	0.189
F	9.096	8.117	7.307

Note: * represents $p < 0.1$, ** represents $p < 0.05$, *** represents $p < 0.01$, and the values in parentheses are t values.

Table 8. *One lag phase cost stickiness, cash holdings and cash dividend payouts.*

Variables	Div/MV		Div/NA		Ln(1+Div)	
	Cashholdings High (1)	Cashholdings Low (2)	Cashholdings High (3)	Cashholdings Low (4)	Cashholdings High (5)	Cashholdings Low (6)
L. CostStickiness	-0.033**	0.004	-0.131***	-0.022	-0.445***	-0.083
	(-2.282)	(0.331)	(-3.176)	(-0.572)	(-2.787)	(-0.695)
Size	-0.001	0.000	-0.004	-0.012***	-0.014	-0.030**
	(-1.008)	(0.000)	(-1.222)	(-2.611)	(-1.060)	(-2.132)
Leverage	-0.005	-0.016**	-0.017	-0.016	-0.121*	-0.104
	(-0.774)	(-2.053)	(-1.008)	(-0.745)	(-1.862)	(-1.554)
M/B	-0.001***	-0.001***	0.004***	-0.000	0.001	-0.007***
	(-4.734)	(-3.206)	(4.967)	(-0.469)	(0.230)	(-3.161)
ROAVol	0.094***	0.030	0.193**	0.063	1.491***	0.255
	(2.853)	(0.835)	(2.043)	(0.617)	(4.058)	(0.806)
CashHoldings	0.000***	0.000	0.000***	0.000	0.000***	0.000
	(8.152)	(0.071)	(7.129)	(0.144)	(10.592)	(0.706)
Tangibility	-0.002	-0.008*	0.001	-0.023	-0.061	-0.133***
	(-0.493)	(-1.852)	(0.086)	(-1.788)	(-1.221)	(-3.282)
Growth	0.000	0.002**	0.001	0.012***	0.016***	0.041***
	(0.530)	(2.487)	(0.994)	(4.284)	(2.739)	(4.837)
FHP	-0.000***	-0.000***	-0.000*	-0.000	-0.000	0.000
	(-5.511)	(-2.685)	(-1.785)	(-0.907)	(-0.751)	(0.534)
Dual	-0.001	0.000	-0.006**	0.000	-0.016	0.002
	(-0.996)	(0.155)	(-2.146)	(0.105)	(-1.460)	(0.282)
Relevance	-0.001	0.000	0.000	-0.000	-0.001	-0.006
	(-0.842)	(0.060)	(0.100)	(-0.197)	(-0.199)	(-0.925)
Boardsize	-0.000	-0.002	0.003	-0.004	0.018	-0.024
	(-0.161)	(-0.795)	(0.398)	(-0.450)	(0.625)	(-0.934)
ES	0.003**	-0.002	0.007*	-0.004	0.025*	-0.007
	(1.984)	(-1.043)	(1.889)	(-0.806)	(1.706)	(-0.518)
ICdum	0.003**	-0.002	0.007*	-0.004	0.025*	-0.007
	(1.984)	(-1.043)	(1.889)	(-0.806)	(1.706)	(-0.518)

Variables	Div/MV		Div/NA		Ln(1+Div)	
	Cashholdings High (1)	Cashholdings Low (2)	Cashholdings High (3)	Cashholdings Low (4)	Cashholdings High (5)	Cashholdings Low (6)
Rofa	0.000	0.000	0.000	-0.001	0.001	0.002
	(0.290)	(0.080)	(1.915)	(-1.088)	(0.992)	(0.643)
Nop	0.019***	0.018***	0.058***	0.082***	0.305***	0.302***
	(5.967)	(2.842)	(6.206)	(4.598)	(8.466)	(5.500)
_cons	0.038	0.018	0.094	0.280***	0.301	0.817***
	(1.385)	(0.522)	(1.200)	(2.826)	(0.987)	(2.669)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1870	1396	1870	1396	1870	1396
R-squared	0.263	0.223	0.187	0.131	0.229	0.196
F	7.182	4.347	4.624	2.286	5.973	3.698

Note: * represents p < 0.1, ** represents p < 0.05, *** represents p < 0.01, and the values in parentheses are t values.

Table 9. *Corporate governance, cost stickiness and cash dividend payouts.*

Variables	Div/MV		Div/NA		Ln(1+Div)	
	CGI High (1)	CGI Low (2)	CGI High (3)	CGI Low (4)	CGI High (5)	CGI Low (6)
CostStickiness	-0.006	-0.030**	0.020	-0.106***	-0.050	-0.314***
	(-0.565)	(-2.512)	(0.566)	(-3.206)	(-0.443)	(-2.599)
Size	-0.001*	-0.001	0.003	-0.000	-0.021**	0.014
	(-1.779)	(-0.634)	(1.100)	(-0.075)	(-2.464)	(1.445)
Leverage	-0.001	-0.006	0.002	-0.010	-0.051	-0.088*
	(-0.180)	(-1.358)	(0.109)	(-0.791)	(-0.845)	(-1.830)
M/B	-0.001***	-0.001***	0.002***	0.004***	-0.009***	0.005*
	(-6.277)	(-2.923)	(3.414)	(5.061)	(-5.005)	(1.812)
ROAVol	-0.000	0.025	0.475***	0.125**	0.860***	0.829***
	(-0.338)	(1.270)	(14.423)	(2.281)	(8.031)	(4.137)
CashHoldings	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***
	(6.532)	(4.751)	(3.842)	(3.385)	(10.420)	(5.455)
Tangibility	0.001	-0.004	0.000	-0.021**	-0.070**	-0.133***
	(0.501)	(-1.149)	(0.009)	(-2.056)	(-2.244)	(-3.487)
Growth	-0.000	0.000*	0.000	0.000	-0.000	0.004***
	(-0.377)	(1.769)	(0.239)	(1.852)	(-0.118)	(5.816)
FHP	-0.000***	-0.000***	-0.001***	0.000*	-0.000	0.000
	(-6.425)	(-3.638)	(-4.968)	(0.079)	(-1.403)	(0.818)
Dual	-0.000	0.000	-0.000	0.001	0.001	0.002
	(-0.056)	(0.194)	(-0.149)	(0.377)	(0.097)	(0.165)
Relevance	-0.000	-0.000	-0.002	0.001	-0.007	0.006
	(-0.625)	(-0.624)	(-1.047)	(0.565)	(-1.254)	(0.920)
Boardsize	0.001	-0.001	0.003	0.001	-0.001	-0.015
	(0.573)	(-0.524)	(0.490)	(0.134)	(-0.046)	(-0.599)
ES	-0.001	0.001	-0.003	0.003	-0.019*	0.014
	(-1.160)	(0.461)	(-0.878)	(0.991)	(-1.740)	(1.211)
ICdum	0.000	0.004	-0.003	0.003	0.025	0.027
	(0.062)	(0.365)	(-0.173)	(0.119)	(0.489)	(0.255)
Rofa	-0.000	0.000	-0.000	0.000	-0.000	0.001
	(-0.288)	(0.509)	(-0.800)	(1.356)	(-1.202)	(1.212)
Nop	0.022***	0.014***	-0.103***	0.040***	0.144***	0.234***
	(6.014)	(4.617)	(-6.139)	(4.763)	(2.649)	(7.555)
_cons	0.041**	0.031	-0.034	0.047	0.764***	-0.066
	(2.381)	(1.319)	(-0.585)	(0.715)	(4.015)	(-0.275)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2822	1922	2822	1922	2822	1922
R-squared	0.230	0.240	0.183	0.186	0.223	0.227
F	8.635	5.545	6.454	4.012	8.270	5.162

Note: * represents p < 0.1, ** represents p < 0.05, *** represents p < 0.01, and the values in parentheses are t values.

6. Further Analysis

From the analysis above, cost stickiness affects corporate cash holdings by deteriorating corporate governance, and the difference in cash holdings will affect the negative relation between cost stickiness and cash dividend payout.

According to the results in Table 9, column (1) (3) (5) represent sub-sample with high level of corporate governance, and the coefficients (t value) of CostStickiness are -0.006

(-0.565), 0.020 (0.566) and -0.050 (-0.443) respectively, which are not significant. Columns (2) (4) (6) represent sub-sample with low level of corporate governance. The coefficient (t value) of CostStickiness in column (2) is -0.030 (-2.512), which is significant at 5% statistical level. From column (4) (6), the coefficients (t value) of CostStickiness -0.106 (-3.206) and -0.314 (-2.599) respectively, which are significant at 1% statistical level. Above analysis verifies that the cost stickiness influences cash dividend payouts through deteriorating corporate governance.

Table 10. *Corporate governance, cost stickiness, cash holdings and cash dividend payouts.*

Variables	Cashholdings High						Cashholdings Low					
	Div/MV		Div/NA		Ln(1+Div)		Div/MV		Div/NA		Ln(1+Div)	
	CGI High (1)	CGI Low (2)	CGI High (3)	CGI Low (4)	CGI High (5)	CGI Low (6)	CGI High (7)	CGI Low (8)	CGI High (9)	CGI Low (10)	CGI High (11)	CGI Low (12)
CostStickiness	-0.008	-0.037**	-0.046	-0.165***	-0.216	-0.459***	0.002	-0.008	-0.016	0.014	-0.010	0.060
	(-0.487)	(-2.126)	(-1.068)	(-3.550)	(-1.075)	(-2.631)	(0.163)	(-0.473)	(-0.369)	(0.285)	(-0.068)	(0.347)
Size	-0.000	0.000	-0.001	0.002	-0.026	0.031*	-0.002	0.002	-0.015***	0.007	-0.048***	0.018
	(-0.283)	(0.276)	(-0.400)	(0.439)	(-1.499)	(1.864)	(-1.045)	(1.048)	(-3.651)	(1.278)	(-3.465)	(0.997)
Leverage	0.004	-0.002	-0.020	-0.008	-0.108	-0.121*	0.006	-0.018***	0.032	-0.024	0.081	-0.112
	(0.515)	(-0.274)	(-0.898)	(-0.430)	(-1.047)	(-1.659)	(0.686)	(-2.679)	(1.349)	(-1.185)	(1.008)	(-1.586)
M/B	-0.002***	-0.001**	0.000	0.008***	-0.010**	0.013***	-0.001***	-0.001*	-0.001	0.002**	-0.008***	-0.003
	(-5.352)	(-1.973)	(0.292)	(6.428)	(-2.359)	(2.804)	(-3.629)	(-1.680)	(-1.396)	(2.051)	(-3.493)	(-0.900)
ROAVol	0.069***	0.004	0.315***	0.036	1.003***	0.485*	0.019	0.039	0.147	0.197	0.558*	0.594
	(4.261)	(0.168)	(7.453)	(0.516)	(5.064)	(1.863)	(0.573)	(0.870)	(1.557)	(1.464)	(1.771)	(1.283)
CashHoldings	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000**	-0.000	0.000***	-0.000	0.000***	-0.000
	(5.489)	(3.474)	(5.486)	(2.586)	(8.401)	(3.968)	(2.086)	(-1.137)	(2.602)	(-0.660)	(3.927)	(-0.459)
Tangibility	0.006	-0.005	0.018	-0.032**	-0.024	-0.193***	-0.000	-0.005	-0.003	-0.003	-0.066	-0.080
	(0.957)	(-0.923)	(1.203)	(-1.979)	(-0.343)	(-3.184)	(-0.030)	(-0.993)	(-0.269)	(-0.215)	(-1.617)	(-1.479)
Growth	-0.000	0.000*	0.000	0.000*	-0.000	0.004***	0.000	-0.001	0.003	0.002	0.010*	0.015**
	(-0.343)	(1.722)	(0.168)	(1.773)	(-0.084)	(5.254)	(0.184)	(-0.800)	(1.479)	(0.957)	(1.666)	(2.005)
FHP	-0.000***	-0.000**	-0.000	-0.000	-0.001	-0.000	-0.000***	-0.000**	-0.000	-0.000	-0.000	-0.000
	(-5.490)	(-2.447)	(-1.909)	(-0.671)	(-0.836)	(-0.176)	(-3.099)	(-2.274)	(-0.294)	(-1.562)	(-0.474)	(-0.474)
Dual	-0.000	0.000	-0.001	-0.001	-0.004	0.001	0.000	0.001	0.001	0.005	0.001	0.010
	(-0.197)	(0.323)	(-0.465)	(-0.315)	(-0.282)	(0.045)	(0.525)	(0.654)	(0.320)	(1.525)	(0.134)	(0.897)
Relevance	-0.001*	-0.000	-0.004*	0.002	-0.016	0.009	0.001	-0.000	0.002	0.001	-0.001	0.005
	(-1.683)	(-0.564)	(-1.652)	(0.971)	(-1.521)	(1.008)	(0.703)	(-0.200)	(0.927)	(0.375)	(-0.126)	(0.586)
Boardsize	-0.002	0.002	0.004	-0.000	0.000	-0.001	-0.001	-0.005	0.001	-0.007	-0.010	-0.013
	(-0.575)	(0.511)	(0.501)	(-0.033)	(0.011)	(-0.036)	(-0.192)	(-1.287)	(0.071)	(-0.617)	(-0.376)	(-0.339)
ES	0.000	0.001	0.001	0.005	-0.000	0.015	-0.003*	-0.001	-0.006	-0.006	-0.025*	-0.009
	(0.066)	(0.550)	(0.300)	(1.098)	(-0.014)	(0.930)	(-1.756)	(-0.541)	(-1.291)	(-1.250)	(-1.736)	(-0.534)
ICdum	-0.001	0.000	0.002	0.000	0.041	0.000	0.000	0.000	-0.007	0.000	-0.029	0.000
	(-0.150)	(-0.278)	(0.103)	(0.353)	(0.539)	(-0.231)	(0.024)	(0.261)	(-0.303)	(-0.169)	(-0.393)	(0.239)
Rofa	-0.000	0.000	0.000	0.000	0.000	0.001	-0.000	-0.001**	-0.000	-0.002	-0.001	-0.010
	(-0.218)	(0.817)	(0.528)	(1.372)	(0.007)	(0.974)	(-0.267)	(-2.070)	(-1.227)	(-1.272)	(-0.728)	(-1.578)
Nop	0.005	0.014***	0.008	0.030***	0.210**	0.227***	0.020***	0.023***	0.088***	0.083***	0.400***	0.334***
	(0.619)	(3.443)	(0.422)	(2.825)	(2.245)	(5.615)	(2.903)	(3.499)	(4.543)	(4.288)	(6.162)	(4.985)
_cons	0.027	-0.008	0.052	-0.026	0.834**	-0.606	0.042	-0.011	0.332***	-0.080	1.171***	-0.167
	(0.869)	(-0.206)	(0.644)	(-0.256)	(2.215)	(-1.599)	(1.380)	(-0.291)	(3.818)	(-0.704)	(4.025)	(-0.427)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1354	1143	1354	1143	1354	1143	1468	779	1468	779	1468	779
R-squared	0.264	0.252	0.263	0.248	0.269	0.267	0.266	0.273	0.139	0.198	0.228	0.221
F	5.433	4.555	5.422	4.481	5.595	4.943	6.306	2.593	2.805	1.707	5.154	1.954

Note: * represents p < 0.1, ** represents p < 0.05, *** represents p < 0.01, and the values in parentheses are t values.

Furthermore, cash holdings are introduced into the model to observe whether cost stickiness under different cash holdings has significant difference on the influence mechanism of cash dividend payouts. From the results in Table 10, the sample is divided into two sub-samples according to the median value of cash holdings: high cash holdings and low cash holdings. In the two sub-samples, the influence of cost stickiness with high corporate governance level and low corporate governance level on cash dividend payouts is respectively tested. In the sample with low cash holdings, no matter the level of corporate governance is high or low, the coefficient of CostStickiness is not significant. In

the sample with high cash holdings, column (1) (3) (5) represent the enterprises with high level of corporate governance, and the coefficients (t value) are -0.008 (-0.487), -0.046 (-1.068) and -0.216 (-1.075) respectively, which are not significant. Column (2) (4) (6) represent the enterprises with low corporate governance level, and the coefficients (t value) of CostStickiness are -0.037 (-2.126, significant at 5% statistical level), -0.165 (-3.550), and -0.459 (-2.631), which are significant at 1% statistical level. Above results verify that the negative impact of cost stickiness on cash dividend payouts is more significant in the enterprises with high cash holdings.

7. Conclusion

Cash dividend policy has always been a hot topic of academic research. Although there are a lot of literatures on the determinants of cash dividend policy, none of these literatures has discussed from the perspective of asymmetric cost behavior. This paper selects the data of listed companies from 2007 to 2017 as the research samples to test the negative impact of cost stickiness on cash dividend payouts and the impact of cash holdings on the above relation, and further discusses the impact mechanism of cost stickiness on cash dividend payouts. The results show that cost stickiness has a significant negative correlation with cash dividend payouts, that is, cost stickiness has a significant inhibitory effect on dividend payouts. Cash holdings will affect the negative correlation between cost stickiness and cash dividend payouts. In the sub-sample with cash holdings higher than the median value, the negative correlation between cost stickiness and cash dividend payouts is more significant. Further research shows that cost stickiness negatively affects cash dividend payouts through the deterioration of corporate governance.

This paper not only contributes to the theoretical level, but also has practical significance. On the theoretical level, this paper finds the negative correlation between cost stickiness and cash dividend payouts, which provides a new direction for the research on the influencing factors of corporate dividend policy and the economic consequences of cost stickiness, and enriches the domestic and foreign literatures on these two aspects. In practice, this paper reveals the mechanism of cash dividend payouts, which is helpful for us to better understand the difference of cash dividend payouts level from the perspective of cost state. The conclusion of this paper provides a new idea for improving the overall low payment of cash dividends. Company managers can continuously optimize cash dividend policy by maintaining appropriate cost stickiness and cash holdings, so that companies, shareholders and other stakeholders can benefit. This paper also has some limitations. For example, the research sample of this paper is only listed companies. Whether the negative correlation between cost stickiness and cash dividend payouts is still valid in state-owned enterprises and private enterprises deserves further analysis.

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