Study on Dividend Payment Tendency of Engineering Management Organization

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Abstract. All kinds of engineering management organizations (such as general contracting enterprises, supervision enterprises, real estate development enterprises, construction enterprises and engineering consulting enterprises) have many characteristics such as large number of companies, large investment, tight construction period, high technical content and long return period. A suitable dividend distribution policy has a profound impact on the long-term development of construction companies. In view of the fact that the dividend distribution of listed companies in engineering management organizations has a large number of distribution forms, low payment levels and strong policy arbitrariness, this paper takes A-share listed companies in China's engineering management organizations from 2008 to 2017 as a research sample, using panel logit Model, using the accounting firm selected by the listed company as the proxy variable to measure the quality of independent auditing, empirically testing the relationship between the listed company's cash dividend policy and the company's audit quality from the perspective of corporate governance, and adding geoeconomic elements to test the independent directors. The impact of the location of the job on the relationship between the two. The research in this paper finds that the tendency of cash dividend payment in engineering management organizations is significantly negatively correlated with whether the listed company hires a well-respected accounting firm in the industry to act as an auditor, and this relationship is manifested in the company's holding listed company where the independent director is locally employed. More significant.

1. Introduction
The engineering project undertaken by the project management organization is one of the basic industries of the national economy. The project management organization has the characteristics of a large number of companies, a small company model, a high exit of the construction industry, a large investment capital, and a long return period. The formulation of a suitable dividend distribution policy has a profound impact on the long-term development of the construction company. There is still a big gap between China's capital market and mature capital markets in developed countries. From the perspective of dividend policy, there are still many shortcomings in the formulation of relevant policies of the company, such as low cash dividend payment level, poor continuity of cash dividends, and small proportion of enterprises paying cash dividends. This paper starts with the influencing factors of dividend paying tendency and tries to seek another institutional arrangement to promote the reasonable distribution of cash dividends. Independent auditing has the function of corporate governance (Watts and Zimmerman, 1983) [1], so how does independent auditing as a governance mechanism affect the cash dividend governance policies of listed companies? From the existing literature, in addition to Lawson and Wang (2011) studied the relationship between dividend policy
and auditor supervision of US listed companies[2], few scholars have studied the relationship between corporate governance mechanism and dividend policy from the perspective of independent audit, especially in the context of China's unique economic environment and system, whether there is a relationship between external independent audit and listed company's dividend policy, what kind of relationship exists, and what are the important factors affecting the relationship between the two are still an open topic to be explored.

As the auditors of famous accounting firms with high reputation in the world (such as the "big four" international accounting firms) generally have stronger independence than those of ordinary accounting firms (Fan and Wong, 2005), they have more effective supervisory functions. Therefore, this paper examines the impact of audit quality on dividend payment propensity of listed companies from the perspective of accounting firm selection. Taking a-share listed companies in China from 2008 to 2017 as samples, this paper adopts logit model to test the relationship between cash dividend payment propensity and independent audit quality of listed companies in engineering management organizations, and further investigates the impact of independent directors' location on their relationship. In this paper, the study found that gold dividend payments tendency and there is no significant correlation between the independent audit quality, but in the case of independent directors local office, both were significantly negative correlation, thus proving hypothesis of this article, the independent directors of the local office will weaken the external audit supervision function, strengthen the cash dividend payment, thus enhance audit quality and negative correlation relationship between cash dividend payments tend.

The rest of the paper is arranged as follows: the second part reviews the relevant research literature; the third part analyzes the theory and puts forward the hypothesis of this paper; the fourth part introduces the research design of this paper; the fifth part analyzes the empirical results of this paper; the sixth part summarizes the research conclusions.

2. Literature review

2.1. Corporate governance function of independent audit

Independent audit requires independent and objective evaluation of the legitimacy and fairness of enterprise financial statements, so it has the function of supervision and governance. Fan and Wong (2005) found similar evidence after studying the corporate governance function of external auditors in emerging markets, and believed that audit itself is a corporate governance way, which can reduce the information asymmetry and agency cost of enterprises [3]. Francis and Wilson (1988) provides empirical evidence on the assumption that the "eight big" accounting firms than the "eight big" accounting firms have more effective supervision function, after they found between shareholders and managers, and the more serious the agency conflict between the owner and the creditors of the company, the more likely it is to choose the international accounting firm "eight"[4].

2.2. Dividend payment and corporate governance

As for the relationship between dividend policy and corporate governance, there are two mainstream views in academia: "substitution" model and "outcome" model. Centering on agency conflicts between insiders and outsiders, the theory of dividend agency cost regards cash dividend as one of the mechanisms to alleviate agency problems and reduce agency costs, therefore, it is an alternative mechanism for internal and external corporate governance, such as debt, board governance. However, dividend policy may also be the result of the improvement of internal and external governance mechanism of a company, and dividend payment is positively correlated with corporate governance level, such as the studies of La Porta et al. (2000), Adams et al. (2010) [5-6].

2.3. Local appointment of independent directors

The functions of independent directors are mainly embodied in supervision and consultation. Existing researches on the characteristics of independent directors mainly focus on individual characteristics,
position characteristics, scale characteristics and incentive mechanism. How geographical distance affects corporate behavior is a hot issue in the recent corporate finance research. Sun liang and liu chun(2014) found that independent directors' working in different places is a common product of enterprises' initiative to weaken supervision and strengthen consultation, which is manifested in higher agency costs, more efficient operation in different places, and higher corresponding salary[7]. However, the geographical characteristics of independent directors have little influence on cash dividend policy.

To sum up, the existing literature has reached a consensus in three aspects. First, there are two relationships between dividend policy and corporate governance of listed companies: "substitution" and "result", which vary according to different systems and governance mechanisms. Second, independent audit also has corporate governance function; Third, the local office of independent directors is more effective than that in other places. However, specific to the relationship between dividend policy and independent audit, the existing research is weak and the conclusions are inconsistent. At the same time, the location of independent directors will affect the effectiveness of supervision, thereby affecting the effect of corporate governance, and its impact on cash dividend policy has not been fully studied.

3. Theoretical analysis and research hypothesis
Based on the "results" model and "substitution" model proposed by La Porta et al. (2000) [5], this paper attempts to analyze the relationship between cash dividend payment propensity and audit quality of listed companies. First of all, based on the "results" model, the supervision of external independent audit increases the probability and risk that insiders' opportunistic behaviors such as excessive investment and in-service consumption, which damage the interests of external investors, are discovered, so it is easier to force insiders to "disgor" cash as dividends to shareholders. Secondly, the "substitution" model predicts both the independent audit supervision and dividend payment have the function of improving corporate governance level and reducing agency cost, and there may be a mutual substitution relationship. Based on this, hypothesis 1 is proposed in this paper:

H1a: The tendency of cash dividend distribution in engineering management organizations is positively correlated with the quality of independent audit;

H1b: The tendency of cash dividend distribution in engineering management organizations is negatively correlated with the quality of independent audit;

Cao chunfang and Lin yan (2017) believe that the supervision and consultation of independent directors in different places are ineffective, while the local office of independent directors is effective in supervision and consultation [2]. On the one hand, independent directors will tend to choose local accounting firms due to "effective consulting", which will reduce the corporate governance function of external audit. On the other hand, the "effective supervision" of locally held independent directors can alleviate the agency problem and force insiders to "spit out" cash as dividends to shareholders, increasing the propensity of cash dividend distribution. To sum up, when independent directors are employed locally, there is a more obvious inverse relationship between cash dividend distribution quality and audit quality than when independent directors are employed remotely. Therefore, hypothesis 2 of this paper is proposed as follows:

H2: When independent directors are employed locally, there is a more obvious inverse relationship between the quality of cash dividend distribution and the quality of audit, compared with that of independent directors in other places.

4. Study design
4.1. Variable definitions
According to existing literature studies, the main variables selected in this paper are shown in table 1.

4.2. Model construction
Since the dependent variable DIV in this paper is a dummy variable with value of 0 or 1, logit model is used for regression. The measurement model is shown as follows:

\[
\text{logit}\left[ \Pr(D\text{IV}_{it}=1|X) \right] = a_0 + \sum_j a_j \text{Factor}_{it-1} + \sum_k a_k \text{Control}_{it-1} \tag{1}
\]

### 4.3. Sample selection
In this paper, A-share listed companies in the housing construction industry, civil engineering construction industry, building installation page, building decoration industry and other construction and real estate industries are adopted as research objects. The following samples are excluded: (1) data of listed companies with special stocks in ST and *ST categories are excluded; (2) according to the current provisions on dividends, listed companies with losses or negative undistributed profits in the current year are not eligible to pay dividends, so such samples are excluded; (3) missing samples of relevant data were eliminated, and 1657 observed samples were finally obtained. The data of cash dividend in this paper are obtained from the database of flush flush, and other data are obtained from the CSMAR database of guotai ‘an.

### 5. Empirical results analysis

#### 5.1. Descriptive statistics and correlation tests
The results of descriptive statistics are shown in the following table. According to table 2, the companies that have paid cash dividends account for 86.9% of the total sample, and only 3.8% of the companies employ the four major companies to undertake external audit work. Meanwhile, the correlation test of variables was conducted in this paper, and the results showed that the Pearson and Spearman correlation coefficients between the variables were no more than 0.5, indicating that there was no serious collinearity problem and no serious influence on the explanatory variable coefficient.

#### 5.2. Multiple regression analysis
In this paper, panel logit model is used to test the impact of audit quality on cash dividend payment propensity, and the results are shown in table 3 (1). According to the results in the table, we can see that audit quality is negatively correlated with cash dividend payment propensity at the level of 5%, which indicates that external audit and cash dividend, two corporate governance mechanisms, are mutually substituted, proving hypothesis H1b. This paper uses the location of the independent director and the company's office location to classify, and then regress, the results are shown in Table 3 (2), (3). It can be concluded that when independent directors are employed locally, audit quality is significantly negatively correlated with dividend payment propensity at the level of 5%, while there is no obvious between them when they are employed by independent directors from other places.

#### 5.3. Endogenetic treatment and robustness test
Previously we assumed that an independent audit is an exogenous variable, but it can be endogenous. In this paper, the instrumental variable method was used to re-test the research hypothesis, and the research conclusion did not change fundamentally. In order to test the robustness of the above results, this paper adopts the method of replacing variables to carry out the robustness test. The eight major domestic accounting firms are included in the independent variable BIG4 to form the new variable BIG. The robustness test results are consistent with the main test, and are not listed here.

### 6. Conclusion and enlightenment
This paper takes A-share listed companies in China's engineering management organizations from 2008 to 2017 as the research object, adopts the type of accounting firm hired by engineering management organizations to measure the supervision function of independent audit on listed companies, and empirically tests the impact of corporate governance function of external independent audit on cash dividend policy of engineering management organizations. This paper finds that the tendency of cash dividend payment in China's engineering management organizations is significantly...
negatively correlated with whether the engineering management organizations employ well-known accounting firms with high reputation as auditors, and this relationship is more significant in engineering management organization companies where independent directors hold local posts.

The research of this paper expands the literature related to the influencing factors of dividend policy and provides reference for the dividend policy formulation of engineering management organizations. At the same time, this paper extends the study on the economic consequences of audit quality, and provides the considerations based on dividend policy for engineering management organizations to select accounting firms.

7. Tables

Table 1. Variables summary.

| Name              | calculation method                                      |
|-------------------|--------------------------------------------------------|
| Independent variable | BIG4  Y=1, N=0                                      |
| Dependent variable   | DIV   Y=1, N=0                                      |
| Classification variables | WORKPLACE   At least one independent director's workplace isn't in the same city with the company, then 1, otherwise it's 0. |
|                      | STATE  State =1, No state=0                            |
|                      | AGE    Ln (1+ difference between year of dividend payment and year of listing) |
|                      | SIZE   Ln (total assets)                              |
| Control variables    | LEV    Total liabilities/total assets                  |
|                      | EPS    Net income/total equity                         |
|                      | GROWTH Revenue growth rate                             |
|                      | ROE    Net income/net assets                           |
|                      | CASH   Cashflow (operating activities)/total equity     |
| SHAREHOLDER         | SHAREHOLDER N (management shareholdings)/total equity |

Table 2. Description

| Name               | MEAN | SD   | MIN  | P25  | P50  | P75  | MAX  | N    |
|--------------------|------|------|------|------|------|------|------|------|
| DIV                | 0.869 | 0.338 | 0    | 1    | 1    | 1    | 1    | 1657 |
| BIG4               | 0.0380 | 0.192 | 0    | 0    | 0    | 0    | 1    | 1657 |
| LSHRHLD1           | 34.25 | 14.21 | 9.330 | 23.06 | 32.55 | 43.44 | 72.84 | 1657 |
| STATE              | 0.267 | 0.443 | 0    | 0    | 1    | 1    | 1    | 1657 |
| AGE                | 1.890 | 0.914 | 0    | 1.386 | 1.946 | 2.708 | 3.178 | 1657 |
| SIZEW              | 22.01 | 1.196 | 20.00 | 21.14 | 21.85 | 22.69 | 25.78 | 1657 |
| LEV                | 0.384 | 0.197 | 0.0500 | 0.220 | 0.370 | 0.530 | 0.840 | 1657 |
| EPS                | 0.460 | 0.463 | 0.0110 | 0.155 | 0.329 | 0.595 | 2.701 | 1657 |
| ROE                | 0.0850 | 0.0580 | 0.00300 | 0.0410 | 0.0760 | 0.115 | 0.300 | 1657 |
| GROWTH1            | 2379 | 1601 | 1    | 1015 | 2341 | 3606 | 5477 | 1657 |
| CASH               | 0.382 | 0.790 | -2.504 | 0.0530 | 0.301 | 0.671 | 3.457 | 1657 |
| SHAREHOLDER        | 0.181 | 0.218 | 0    | 0    | 0.0520 | 0.362 | 0.705 | 1657 |

Table 3. Audit quality and cash dividend payment

|       | (1) No group DIV | (2) The local office DIV | (3) Beyond the office DIV |
|-------|-------------------|---------------------------|----------------------------|
| BIG4  | -0.390***         | -0.567***                 | -0.115                     |
|       | (0.031)           | (0.022)                   | (0.718)                    |
| LSHRHLD1 | 0.004           | 0.006                     | 0.001                      |
| Variable   | Coefficient 1 | Coefficient 2 | Coefficient 3 | Significance 1 | Significance 2 | Significance 3 |
|------------|---------------|---------------|---------------|----------------|----------------|----------------|
| STATE      | 0.374***      | 0.483***      | 0.289**       | (0.000)        | (0.000)        | (0.029)        |
| AGE        | -1.029***     | -0.929***     | -1.111***     | (0.000)        | (0.000)        | (0.000)        |
| SIZE       | 0.650***      | 0.711***      | 0.610***      | (0.000)        | (0.000)        | (0.000)        |
| LEV        | -2.609***     | -2.864***     | -2.364***     | (0.000)        | (0.000)        | (0.000)        |
| EPS        | 0.478***      | 0.981***      | 0.319         | (0.000)        | (0.000)        | (0.129)        |
| ROE        | 6.376***      | 5.760***      | 6.425***      | (0.000)        | (0.001)        | (0.000)        |
| CASH       | 0.197***      | 0.186**       | 0.195***      | (0.000)        | (0.017)        | (0.005)        |
| GROWTH1    | -0.000***     | -0.000***     | -0.000**      | (0.000)        | (0.001)        | (0.050)        |
| SHAREHOLDER| 0.194         | 1.190***      | -0.528        | (0.398)        | (0.000)        | (0.105)        |
| CONSTANT   | -9.477***     | -11.093***    | -8.388***     | (0.000)        | (0.000)        | (0.000)        |

Industry effect | Y | Y | Y |
The annual effect | Y | Y | Y |

| N  | 1642 | 846 | 796 |
|---|------|-----|-----|
| R² |      |     |     |
| ADJ. R² |     |     |     |

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