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RESEARCH ARTICLE

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Counterbalance mechanism of blockholders and tunneling of cash dividend: Evidences from Chinese listed companies from 1999 to 2003

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Abstract In this paper, due to the important influence of corporate governance on corporate financial behaviors and from an angle of corporate governance, we develop six hypotheses based on overseas and home relevant researches and data of Chinese listed companies from 1999 to 2003, and then we do hypotheses testes with regression models to examine the impact of share percent of the top 5 shareholders and counterbalance mechanism among blockholders on cash dividend distribution of listed companies, and to explore influence and counterbalance mechanisms in tunneling of cash dividend which derived from the special phenomena of "same shares same rights but different price". We find that share percent of top 5 shareholders, control ability (or combined control ability) and balance degree (or combined balance degree) of blockholders have important influence on tunneling of cash dividend distribution. Lastly, the paper proposes five suggestions to restrict controlling shareholders to enlist private benefits from tunneling of cash dividend and to protect rights and interests of small and medium shareholders.

Keywords blockholder, counterbalance, cash dividend, tunneling, corporate governance

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摘要 鉴于公司的财务行为受到公司治理因素的影响，我们从公司治理的角度，基于国内外的相关研究提出6个研究假设，然后构建回归模型，依据1999–2003年中国上市公司数据进行假设检验，具体探讨前五大股东持股比例以及在此基础上大股东之间的监督制衡机制对于上市公司派发现金股利的影响，研究因为中国股市“同股同权不同价”的特殊现象而导致的现金股利的“隧道效应”，探索其中的影响机制和制衡机制。研究显示，前五大股东的持股比例、大股东控制力（或联合控制力）、大股东制衡度（或联合制衡度）对派发现金股利的“隧道效应”存在重要影响。最后，我们给出5点建议，试图限制控股股东通过现金股利的“隧道效应”谋取私利，保护中小股东的正当权益。

关键词 大股东，制衡，现金股利，隧道效应，公司治理

1 Introduction

Researchers and investors have been paying great attention to dividend distribution. Realizing the complexity of the problem, Black (1976) called dividend policy “dividend puzzle”. Brealey (1992) regarded the dividend policy as one of the “ten big puzzles” of corporate financial problems. Based on the dividend irrelevant theory (Miller and Modigliani, 1961, 1963) and the dividend relevant theory, (Gorden, 1962) Jensen established dividend proxy theory in 1986. Individual shareholders in USA and UK have not got enough incentive to participate in corporate governance and to monitor the managers because of the dispersed ownership structure. Thus main interest conflicts exist between inside managers and external shareholders in these countries[1] Under such circumstances, cash dividend could effectively reduce the cash flow controlled by managers and thus reducing agency costs. However, the influence of company laws on corporate governance will trail off in certain capital market which has concentrated ownership structure, especially when pyramid shareholding or cross-shareholding structure is prevalent. In both cases, blockholders have enough motivation and ability to control the companies in order to achieve particular goals of their own. Hence, the interest conflicts are mainly between blockholders and the small and medium shareholders.

In China, the interest conflicts between blockholders and the small and medium shareholders are rather serious. The first blockholder or the controlling shareholders of Chinese listed companies are mainly the state or legal persons. In recompense for their loss for giving up stock liquidity, they usually hold large

[1] Jensen (1986) laid an emphasis on the conflict between large and small shareholders. He argued that this kind of conflict of interests (which always takes the form of so called “tunneling”) deserved more attention from researchers and practitioners alike.

amounts of stocks with the same right but much lower price than tradable stocks, resulting in an abnormal phenomenon of "the same share with the same rights but different prices"[2]. When the dividend is distributed, the return ratio for the controlling shareholder is higher than the small and medium shareholders', which leads to inconsistent objective functions between the controlling shareholder and the small and medium ones. To a certain degree, the higher share held by the controlling shareholders, the more likely they require higher cash dividend, thus they could obtain excess return by "tunneling" of cash dividend. That is why the dividend agency cost theory raised by Jensen (1986) will not probably be fit here. In view of this, we develop six hypotheses and use the data of Chinese listed companies from 1999 to 2003, and test these hypotheses with regression models to examine the impact of share held by the top five shareholders and the supervision and balance mechanism among blockholders upon cash dividend distribution of listed companies, and to study the tunneling effect of cash dividend resulted from the abnormal phenomenon of "the same share with the same rights but different prices".

The rest of this paper is organized as follows: in Section 2, we review briefly relevant literature and develop six hypotheses. Section 3 presents data description, regression models and variables definition. The empirical results and robustness tests are demonstrated in Section 4. Conclusions and suggestions are provided in the last section.

2 Literature reviews and research hypotheses

Extant literature shows that severe interest conflicts exist between controlling shareholders and the small and medium ones. The controlling shareholders may pursue private benefits at the expense of interests of the small and medium shareholders (Demsetz and Lehn, 1985; Mikkelson and Partch, 1989; Morck et al. 1988; McConnell and Servaes, 1990; La Porta et al., 1997, 1998, 1999).

[2] La Porta et al. (1998, 2000) pointed out that cash dividend could protect the small and medium shareholders from being expropriated and they believed that the discrepancy of ownership structure and dividend policy among different countries is significantly related to the protection of the investors by the laws. Conceptually, their conclusions are founded on the common conditions of "the same share with the same rights and price".

[3] Researchers have studied the relationship between "tunneling" and protection by the laws. Bebchuk (1994) and Stiglitz (1985) all pointed out that the controlling shareholder would abuse its unique control rights to expropriate the outer shareholders when the protecting laws are in weak positions, and thus the firm value decreases. As suggested by Grossman and Hart (1988), Harris and Raviv (1988), some laws and institutions actually facilitate the controlling shareholders to abuse their control rights. Shi Donghui (2004) also pointed out that the controlling shareholder would extract the small shareholders through some illegal ways when the law system used to protect the small shareholders is out of function.

Shleifer and Vishny (1997), Pagano and Roel (1998) also argued that controlling shareholders may utilize the unique control rights to achieve private benefits[3] through entrenching the small shareholders. The empirical study from Claessen et al. (1999) revealed that the main corporate governance problem in eastern Asian countries is the "tunneling" behaviors. What is more, La Porta et al. (1999) and Claessen et al. (2000) proposed that the small and medium shareholders could not be well protected in some eastern Asian countries since the blockholders in the family firms can easily entrench them by appointing top managers and thus controlling the companies. In other words, in eastern Asian countries and regions including China, there exist more serious "tunneling" problems. Although the cash dividend way is not probably the most optimal choice for "tunneling", it is the most practical way available when other alternative ways used to remove the resource from listed companies are under more and more strict supervision and limitation. The excess return from the abnormal phenomenon of "the same shares with the same rights but different prices" will encourage the controlling shareholders to choose cash dividend.[4] Accordingly, we propose Hypothesis 1 as follows.

Hypothesis 1: ceteris paribus, the higher ratio of shareholdings held by the first blockholder (always the controlling shareholder), the more cash dividend the company distributes.

Different from controlling shareholders, for the divergence of cash flow rights and control rights, other blockholders (referring to the second to the fifth blockholders in this paper) may not as much crave to the "tunneling" of cash dividend as the biggest one. Conversely, they would act as monitors or dissenters. Zwiebel (1995) first analyzed the situation of several blockholders' coexistence. Later, Pagano and Roel (1998), Bennedsen and Wolfenzon (2000), Cronqvist and Nilsson (2001) explored the effect of the presence of multiple blockholders upon the expropriation of company assets. The results were in support of the supervision and counterbalance functions hindering the expropriation behavior of the controlling shareholders and reducing the effect of "tunneling". Actually, the excess return gained by the controlling shareholders also includes the expropriation of other blockholders' interests, regardless of the fact that these smaller blockholders (e.g. the second to the fifth blockholders) also benefit from the phenomenon of "the same share with the same rights but different prices". The above discussion leads to the following hypothesis.

[4] The small and medium shareholders would possibly more likely to accept this kind of "tunneling". For compared with the fact of the retained earning all being extracted by the controlling shareholder, the distribution of cash dividend would at least not make them gain nothing.

Hypothesis 2: ceteris paribus, the higher ratio of shareholding held by the second to the fifth blockholders, the less cash dividend the company distributes.

However, the collusion of the blockholders may probably exist. On the one hand, if the second to the fifth blockholders deem the benefit[5] (e.g. connected transaction) gained from clinging to the controlling shareholder would be more than that from counterbalance or supervision, thus part of them or even all of them would choose to joint in "tunneling" with the controlling shareholder. But the probability decreases with the cash flow rights, especially the control rights of the second to the fifth blockholders increase. Thereby, their counterbalance capacity will swell gradually, which would bring more benefits from supervision and counterbalance for them. With these analyses, we develop three hypotheses as below.

Hypothesis 3: ceteris paribus, among the blockholders whose shareholdings are comparatively small, i.e. the fourth and the fifth blockholders will incline to cling to the controlling shareholders. Thus the higher ratio of shareholdings held by these small blockholders, the more cash dividend the company distributes.

Hypothesis 4: ceteris paribus, the higher ratio of total shareholdings held by the whole or part of the group of the second to the fifth blockholders, the less cash dividend the company distributes.[6]

Hypothesis 5: ceteris paribus, the more "counterbalance degree"[7] effect the second to the fifth blockholders have upon the biggest blockholder, the less cash dividend the company distributes.

In addition, we should notice that the first blockholder (or controlling shareholder) bears certain cost while he gains the excess return. The dividend cost generally includes: (1) the income tax for cash payment; (2) the distribution of cash dividend reduces the amount of cash flow controlled by the controlling shareholder himself; (3) higher dividend would lead to bullish stock price, thus raising controlling shareholder' opportunity cost, while small and medium shareholders can get certain compensation through buying or selling their stocks; (4) the first blockholder's reputation and his relationship with other blockholders would be deteriorated as a result of "tunneling" Consequently, the controlling shareholder will compare the costs and benefits and make decisions accordingly.

[5] Under certain circumstances, the second to the fifth blockholders would have an intimate relationship. For example, they may belong to the same interest group or related social network. Thereby, the collusion among them is almost certain.

[6] The results anticipated in Hypothesis 4 would appear when part of or the entire ratio of shares held by the group of the second to the fifth blockholders is high enough. But when the sum share held by the group of smaller blockholders is low, they may choose to cling to the first blockholders.

[7] The counterbalance degree (or combined counterbalance degree) mentioned in this paper is defined as the ratio of share held by the top five blockholders. The higher the ratio is, the higher the balance degree and the more powerful the balance and supervision capability.

When his share ratio is at the low level, the above four aspects of costs will be more important. As the share ratio of the first blockholder (or controlling shareholding) increases gradually, the corresponding opportunity cost will increase if "tunneling" is abandoned by the controlling shareholder. However, when the marginal revenue of cash dividend distribution is higher than the marginal cost, the controlling shareholder will be more liable to make the company distribute more cash dividend, thereby obtaining the excess return from "tunneling" of cash dividend and expropriating the interest of the small and medium shareholders. Thus, it seems reasonable to reach the following hypothesis.

Hypothesis 6: ceteris paribus, there is a U-shaped relationship between the share ratio of the first blockholder and total or part of share ratio of the group of the second to the fifth blockholders and cash dividend.

The reason why the U-shaped relationship may exist between the share ratio of the second to fifth blockholders and cash dividend is that the second to the fifth blockholders would probably cling to the controlling shareholder, and benefit from the "tunneling" of cash dividend. Although they would be confronted with the loss, they would compensate themselves through other means to maximize the interests of their own.

Recently, Chinese scholars have conducted much research on the problem of dividend distribution based on evidences from China capital market. Wei (1998) suggested that China stock market is far from being an efficient market since the dividend distribution policies of Chinese listed companies usually have a strong influence upon the company's stock price. By using the data of Chinese listed companies' dividend reports from 1992 to 2000, Yu and Chen (2001) examined the influence of dividend reports on stock prices and dealing volume. Lu and Wang (1999) found, through principle components analysis, that the dividend policy is mainly affected by certain variables, such as the company size, the equity of the shareholders, profitability, liquidity, agency cost and shareholder counterbalance. Chen and Zhao (2000) examined the dynamic causes of the dividend policy selection and pointed out that cash dividend is significantly affected by the company's growth ability, profitability, the size of the firm and market price. By empirically analyzing the behaviors of cash dividend of the companies from 1999 to 2002, Yan (2004) found that the higher controlling ability the blockholder has, the more significant inclination to cash dividend payment the company becomes.

Taken together, we can find that most researchers focus on the conflicts between the controlling shareholders and the small shareholders. Although the counterbalance mechanism among multiple blockholders has been noticed, most of researchers just concentrate on the relationship between the first and second blockholders, leaving other blockholders not discussed. Furthermore,

the research on cash dividend from the perspective of corporate governance such as the ownership structure has not emerged until very recently and little research has probed into the topic of the first blockholder's control ability and the counterbalance relationship within blockholders (particularly the united counterbalance from other smaller blockholders against the first blockholder). Also, as far as extent literature is concerned, we have not found any studies on the tunneling effect of cash dividend caused by "the same shares with the same rights but different prices". Since relevant theories on first blockholder's control ability and mechanism of counterbalance among blockholders are still far from being mature, there are still a lot of things (such as variables choosing, sampling method, analysis method, etc.) need to be improved in the present study.

3 Data description, regression models and variable definition

3.1 Data description

The sample consists of all China listed companies in Shenzheng Stock Exchanges and Shanghai Stock Exchanges, from 1999 to 2003, excluding only those B-share-only companies. In total, there are 6,084 samples at the present stage, and 4,716 at the stage one lag behind. When establishing regression model to empirically these data, some firms are eliminated due to the unavailability of data. All the data are collected from CSMAR financial database and FC-CSIDR database. For reliability, sample checking was conducted for the reliability of data.

Table 1 presents the summary statistics description for the main experimental variables. On average, the share ratio of the first to the fifth blockholders is 43.997 7%, 8.486 2%, 3.362 0%, 1.862 1% and 1.184 4% respectively, indicating an absolute advantage position of the first blockholder. Thus the second to the fifth blockholders have only a limited counterbalance influence upon the first block holder. Meanwhile, the sum share ratio of the second to the fifth, the third to the fifth and the fourth to the fifth are only 14.893 0%, 6.406 8% and 3.045 4% respectively, showing a relatively weak counterbalance against the first blockholders even if these smaller blockholders united together. Besides, the counterbalance degrees[8] of the second block holder to the first, the second and third ones to the first, the third one to the first and second ones, the second to fifth ones to the first, the third to fifth ones to the first twos, the fourth and the fifth ones to the first threes are: 0.276 9, 0.400 2, 0.081 2, 0.515 8, 0.159 6 and

[8] The counterbalance degree (or countercombined balance degree) mentioned in this paper is defined as the share ratio of the top five big shareholders, a higher ratio means a higher counterbalance degree and thus more powerful monitor and counterbalance ability.

0.066 6 respectively, denoting that among the top five blockholders, the latter three blockholders have only a feeble counterbalance against the first two.

Table 1 Descriptive statistics of main experimental variables (see variable definitions in Table 2)

	N	*Mean*	*Median*	*Std*. Deviation	*Range*	*Minimum*	*Maximum*
*SH*1	6,084	43.997 7	43.248 7	17.566 0	98.69	0.39	99.08
*SH*2	6,084	8.486 2	5.126 1	8.477 9	42.79	0.00	42.79
*SH*3	6,083	3.362 0	1.857 0	3.906 6	26.10	0.00	26.10
*SH*4	6,083	1.862 1	1.003 0	2.414 5	73.54	0.00	73.54
*SH*5	6,080	1.184 4	0.657 6	1.581 2	57.39	0.00	57.39
*SH*1t5	6,084	58.890 6	60.218 0	13.842 4	110.26	0.72	110.98
*SH*2t5	6,084	14.893 0	11.105 0	12.885 4	95.83	0.00	95.83
*SH*3t5	6,084	6.406 8	3.985 1	6.773 7	88.24	0.00	88.24
*SH*4t5	6,084	3.045 4	1.750 0	3.653 4	80.83	0.00	80.83
*SH*2/1	6,084	0.276 9	0.134 9	0.301 2	1.00	0.00	1.00
*SH*23/1	6,084	0.400 2	0.200 1	0.443 1	2.00	0.00	2.00
*SH*3/12	6,084	0.081 2	0.037 7	0.101 0	0.64	0.00	0.64
*SH*2t5/1	6,084	0.515 8	0.269 1	0.588 5	6.32	0.00	6.32
*SH*345/12	6,084	0.159 6	0.076 9	0.202 6	3.88	0.00	3.88
*SH*45/123	6,084	0.066 6	0.031 8	0.091 3	2.68	0.00	2.68

Source: Designed by the authors.

3.2 Regression models

In the present study, we used Chinese listed companies' data from 1999 to 2003 as sample population and company cash dividend (CCD) as the dependable variable[9] to establish regression models to test the six hypotheses from the perspective of corporate governance. Specifically, we want to explore cash dividend distribution influenced by the share ratio of the top five blockholders and the counterbalance mechanism among them and to investigate the influence mechanism and the counterbalance mechanism lay behind the "tunneling" effect of cash dividend derived from the abnormal phenomenon of "the same shares with the same rights but different prices".[10] In addition, considering possible lag effect may exist in the influence of ownership structure and to test the robustness

[9] We also tried to use the cash dividend ratio (cash dividend ratio = cash dividend/earning per share) as the dependable variable, and the empirical results are consistent with the conclusion got in the present article.

[10] We did not describe explicitly the nature and type of blockholders (the first blockholder in particular) and discuss the market responses to the cash dividend distribution in the present article. These are two important limitations in our study which should be improved in future research.

Table 2 Variables used in the present study

Types		Names	Code	Definitions
Explanatory variables	Experiment variables	Share ratio of blockholders	*SH*1	The share ratio of the first blockholder
			*SH*2	The share ratio of the second blockholder
			*SH*3	The share ratio of the third blockholder
			*SH*4	The share ratio of the fourth blockholder
			*SH*5	The share ratio of the fifth blockholder
		Control ability of blockholders	*DSH*1	Dummy variable, *DSH*1equals to 1 if the share ratio of the first blockholder exceeds 50%, otherwise *DSH* equals 0
			*SH*1*t*5	Sum share ratio of the top five blockholders
			*SH*2*t*5	Sum share ratio of the second to the fifth blockholders
			*SH*3*t*5	Sum share ratio of the third to the fifth blockholders
			*SH*4*t*5	Sum share ratio of the forth to the fifth blockholders
		Counterbalance degree	*SH*2/1	The share ratio of the second blockholder divided by that of the first one
			*SH*23/1	The share ratio of the second and third blockholders divided by that of the first one
			*SH*3/12	The share ratio of the third blockholder divided by that of the top two
			*SH*2t5/1	The share ratio of the second to fifth blockholders divided by that the first one
			*SH*345/12	The share ratio of the third to fifth blockholders divided by that of the top two
			*SH*45/123	The share ratio of the fourth to fifth blockholders divided by that of the top two
	Control variables	Time of going public	*Year*	The year in which the company became listed
		Special treatment	*ST*	Dummy variable, "1" stands for ST listed companies, "0" stands for non-ST listed companies.
		Industry	$Indus_i$[11]	Dummy variable, "1" stands for a listed company belongs to that industry, otherwise, $Indus_i = 0$.
		Year	Y_j	Dummy variable, "1" stands for listed companies in this year, otherwise, $Y_j = 0$.
		Capital structure	*DTA*	Ratio of debts to assets
		Profitability	*OPE*	Prime operating revenue ratio
		Firm size	*LNTA*	Log of the total assets of the listed company
Explained variable			*CCD*	The cash dividend distributed by the listed companies

Source: Designed by the authors ($i = 1, 2\ldots, 12; j = 1, 2, 3, 4$).

[11] We utilize the conventional industry code standard raised by CSRC (China Securities Regulatory Commission).

of our models, we established the following one-stage-lag-behind regression models

$$CCD = B_0 + B_1 SH1 + B_2 SH2 + B_3 SH3 + B_4 SH4 + B_5 SH5 + B_6 (SH1)^2 + B_7 (SH2)^2 + B_8 (SH3)^2 + B_9 (SH4)^2 + B_{10} (SH5)^2 + B_{11} Year + B_{12} ST + B_{13} \Sigma Indus_i + B_{14} \Sigma Y_j + B_{15} DTA + B_{16} OPE + B_{17} LNTA + \varepsilon$$

$$CCD = B_0 + B_1 DSH1 + B_2 SH1t5 + B_3 SH2t5 + B_4 SH3t5 + B_5 SH4t5 + B_6 (SH1t5)^2 + B_7 (SH2t5)^2 + B_8 (SH3t5)^2 + B_9 (SH4t5)^2 + B_{10} Year + B_{11} ST + B_{12} \Sigma Indus_i + B_{13} \Sigma Y_j + B_{14} DTA + B_{15} OPE + B_{16} LNTA + \varepsilon$$

$$CCD = B_0 + B_1 SH2/1 + B_2 SH23/1 + B_3 SH3/12 + B_4 SH2t5/1 + B_5 SH345/12 + B_6 SH45/123 + B_7 Year + B_8 ST + B_9 \Sigma Indus_i + B_{10} \Sigma Y_j + B_{11} DTA + B_{12} OPE + B_{13} LNTA + \varepsilon$$

3.3 Definition of the variables

The above regression equations contain 24 variables (including explained variables). Among them, the first 16 explanatory variables are experimental variables for testing the six hypotheses in this article and latter seven explanatory variables are control ones.

3.3.1 Experimental variables

All the experimental variables are designed to test the six hypotheses. The first group of these variables, namely, the share ratio variables, is used to examine the influence of the share ratio of a single blockholder on cash dividend, and to provide evidences for the top five blockholder's preference for cash dividend tunneling effect respectively. Thus this group of variables is used to test the first three hypotheses. The second group of variables is used to test whether the first blockholder has absolutely control over the company (specially designed for testing the situation of "only one big shareholder", which is a somewhat prevalent phenomenon in China capital market) and the influence of the sum share ratio of the second to the fifth blockholders (that is, control ability or united control ability from these smaller blockholders) upon cash dividend distribution. Thus Hypothesis 4 can be proved. The third group of variables is designed for testing Hypothesis 5, in other words, they are specially designed for exploring the counterbalance (or united counterbalance) of the second to the fifth blockholders upon the tunneling effect of cash dividend. In addition, we used the quadratic form of the first two groups of experimental variables (except *DSH*1) to test whether there is a U-shaped relationship between the share ratio of the top five

blockholders (total or part of the share ratio held by these shareholders) and cash dividend (Hypothesis 6).

3.3.2 Control variables

The choice of control variables are based on extant literature and practical conditions of China's stock market. First, the variable *Year* is used to measure the time of becoming listed. Because in China, many listed companies' profitability, growth potential and financial situation worsen as time goes by, thus are of less and less investment value.[12] Second, on April 22, 1998, China's stock markets started to implement the ST institution. "ST" stands for "special treatment", which aims at those listed companies whose financial situation is abnormal[13] or in other abnormal financial situation.[14] So the dummy variable *ST* is for these specially treated companies since the blockholders' preference for cash dividend would somehow be restrained in these companies. Third, we need to pay attention to differences among different industries, thereby we used the variable $Indus_i$ as an indicator of industries differences (all listed companies are divided into 13 industry categories according to relevant regulations of China Securities Regulatory Commission). Twelve industry dummy variables are included. Fourth, we need to take into consideration market environment changes and fluctuation in listed companies' annual performances. Thus we used variable Y_j to indicate the year. The four dummy variables under Y_j stand for the year from 1999 to 2003 respectively. Finally, we used DTA and OPE to examine the influence of a listed company's ownership structure and profitability upon the tunneling effect of cash dividend. It is predictable that the lower its finance leverage, the more dominant the shareholders (blockholders in particular) become, and the more cash dividend will be distributed. Meanwhile, listed companies with stronger profitability will distribute more cash dividend (Lu and Wang, 1999; Chen and Zhao, 2000). Lu and Wang (1999), Chen and Zhao (2000) found that the size of a listed company also has an influence upon cash dividend distribution. Thus we used the natural logarithm of the total assets of listed companies to control the possible effect of the firm size on cash dividend.

[12] Chen et al. (2001) propose that in china stock market the year-long of having been being public is positively related to the frequency of receiving unqualified reports, for the reason that the listed companies would feel hard to reach the earning destination, thus they are more liable to be involved in earning management or even profit operations.

[13] So called "the abnormal financial situations" include six kinds of circumstances (see http://www.szse.cn/main/Catalog_1443.aspx. April 30, 2005).

[14] "Other abnormal financial situations" mean the circumstances such as natural calamity, major accident which would make the companies stop running fundamentally, as well as the deadly sue that the companies involved in.

4 Empirical analysis results

Regression results are reported in Tables 4–6. During the course of analysis, we controlled strictly the influence of multicolinearity that may impair models explanatory ability. The results show that, at 0.10 level, the regression results of the share ratio of one single blockholder and its quadratic terms support Hypothses 1, 2, 3 and 6, suggesting that all else equal, the higher share ratio of the first, the fourth and the fifth blockholder and the lower share ratio of the third blockholders, the more cash dividend will be distributed. Obviously, there is the U-shaped relationship between the share ratio of the first and the second blockholders and cash dividend distributed. At 0.10 level, the regression results of the sum share ratios of part or all of top five blockholders (combined control ability), dummy variable *DSH*1 and their quadratic terms support Hypothses 1, 3, 4 and 6, suggesting that all else equal, when the first blockholder has absolute control over the company (*DSH*1), the higher sum share ratio of the top five blockholders (*SH*1*t*5), the lower sum share ratio of the second to the fifth blockholders (SH2*t*5), the higher sum share ratio of the fourth and the fifth blockholders (*SH*4*t*5), the more cash dividend will be distributed. And the U-shaped relationship between *SH*1*t*5 and cash dividend still exists. What is more, at the 0.10 level, the regression results of the second to the fifth blockholders' counterbalance degree variables are consistent with Hypothesis 5, implying that all else equal, the higher the counterbalance degree of the second blockholder to the first one, the second and third blockholders to the first one, the third blockholder to the top two, the second to the fifth blockholders to the first one, the less cash dividend the company distributes. However, we also found that the higher the counterbalance degree of the fourth and fifth blockholders to the top three, the more cash dividend the company distributes. A result denies Hypothesis 5 but supports Hypothesis 3.

The results of control variables regression show that listed companies with the following characteristics tend to distribute more cash dividend: newly listed companies (*Year*), non-ST listed companies (*ST*), low financial leverage (*DTA*), high prime operating revenue ratio (*OPE*) and a larger company size (*LNTA*). In addition, differences among different industries and different financial years also have certain influences on cash dividend (analysis omitted). We also noticed that the regression results of one-stage-lag-behind model are in line with the regression results of the present stage. The adjusted R^2 of the former one even exceeds that of the latter one, implying that the share ratio of one single blockholder and its quadratic variables, the control ability (or combined control ability), the counterbalance degree (or combined counterbalance degree) of the blockholders all have the lag effect on cash dividend.

Table 3 Results of regression models (SPSS13.0)

Model	Expected sign	Model CCD-I			Model CCD-II			Model CCD-III		
		1	2	3	1	2	3	1	2	3
C	?	−2.215	−1.994	−2.040	−1.988	−1.766	−1.877	−2.385	−2.081	−2.197
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
*SH*1	+	0.005			0.005			0.007		
		(0.000)			(0.000)			(0.000)		
*SH*2	−	0.000			−7.61E-005			0.002		
		(0.791)			(0.967)			(0.456)		
*SH*3	−		−0.009			−0.007			−0.007	
			(0.014)			(0.071)			(0.150)	
*SH*4	−			0.023			0.024			0.022
				(0.000)			(0.000)			(0.002)
*SH*5	−	0.050	0.032		0.028	0.011		0.030	0.009	
		(0.000)	(0.000)		(0.003)	(0.255)		(0.004)	(0.377)	
$SH1^2$	+			5.56E-005			6.91E-005			8.76E-005
				(0.000)			(0.000)			(0.000)
$SH2^2$	+		0.000	−8.56E-005		0.000	−3.35E-005		0.000	4.02E-005
			(0.002)	(0.125)		(0.013)	(0.585)		(0.144)	(0.580)
$SH3^2$	+	0.000		0.000	0.000		0.000	6.21E-005		−1.24E-005
		(0.203)		(0.157)	(0.427)		(0.237)	(0.823)		(0.965)
$SH4^2$	+	0.000	0.000		2.46E-005	8.72E-006		−3.00E-005	−4.76E-005	
		(0.498)	(0.453)		(0.880)	(0.957)		(0.853)	(0.771)	
$SH5^2$	+			0.000			0.000			−8.11E-005
				(0.568)			(0.538)			(0.762)

(*Continued*)

Model	Expected sign	Model CCD-I			Model CCD-II			Model CCD-III		
		1	2	3	1	2	3	1	2	3
Year	–	–0.069	–0.077	–0.069	–0.063	–0.071	–0.061	–0.048	–0.059	–0.046
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ST	–	–0.249	–0.254	–0.250	–0.253	–0.255	–0.256	–0.257	–0.259	–0.261
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
$Indus_i$	?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Y_j	?	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
DTA	–	–0.002	–0.002	–0.002	–0.002	–0.002	–0.002	–0.001	–0.001	–0.001
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.003)	(0.002)	(0.003)
OPE	+	0.005	0.005	0.005	0.004	0.004	0.004	0.004	0.004	0.004
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
LNTA	–	0.222	0.229	0.217	0.229	0.236	0.224	0.239	0.249	0.232
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
R^2		0.170	0.166	0.170	0.174	0.170	0.178	0.175	0.167	0.180
Adjusted R^2		0.166	0.163	0.166	0.170	0.166	0.173	0.170	0.161	0.174
F-statistic		47.568	48.204	47.541	39.538	39.949	40.467	29.983	29.455	30.932
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
N		6,065	6,065	6,068	4,702	4,702	4,704	3,405	3,405	3,405

Source: Designed by the authors.

Note: the values in parentheses stand for probability.

Table 4 Results of regression models (continued)

Model	Expected Sign	Model CCD-I					Model CCD-II					Model CCD-III				
		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
C	?	−1.881	−2.048	−1.999	−2.225	−1.998	−1.733	−1.915	−1.815	−2.048	−1.846	−2.069	−2.326	−2.158	−2.436	−2.191
		(0.000)	(o.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
*DSH*1	+	0.134					0.155					0.203				
		(0.000)					(0.000)					(0.000)				
*SH*1t5	+		0.004		0.004			0.005		0.004			0.007		0.006	
			(0.000)		(0.000)			(0.000)		(0.000)			(0.000)		(0.000)	
*SH*2t5	−		−0.003					−0.004					−0.004			
			(0.001)					(0.000)					(0.004)			
*SH*3t5	−			−0.001					−0.003					−0.003		
				(0.565)					(0.169)					(0.236)		
*SH*4t5	−				0.006					0.004					0.001	
					(0.080)					(0.000)					(0.826)	
$SH1t5^2$	+			3.17E		3.28E			3.99E		4.15E			5.73E		5.88E
				-005		-005			-005		-005			-005		-005
				(0.000)		(0.000)			(0.000)		(0.000)			(0.000)		(0.000)
$SH2t5^2$	+	−2.06E					3.03E					4.59E				
		-005					-007					-005				
		(0.456)					(0.992)					(0.197)				
$SH3t5^2$	+					−6.58E					−9.13E					−7.90E
						-005					-005					-005
						(0.283)					(0.161)					(0.270)
$SH4t5^2$	+	0.000	0.000				5.48E	6.45E				−3.70E	1.64E			
							-005	-005				-005	-005			
		(0.201)	(0.272)				(0.665)	(0.583)				(0.777)	(0.891)			

(*Continued*)

Model	Expected Sign	Model CCD-I					Model CCD-II					Model CCD-III				
		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Year	–	−0.072	−0.070	−0.071	−0.070	−0.071	−0.065	−0.063	−0.063	−0.063	−0.063	−0.051	−0.048	−0.049	−0.049	−0.048
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ST	–	−0.256	−0.252	−0.254	−0.255	−0.254	−0.261	−0.256	−0.259	−0.258	−0.258	−0.267	−0.261	−0.266	−0.263	−0.264
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
$Indus_i$	?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Y_j	?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No
DTA	–	−0.002	−0.002	−0.002	−0.002	−0.002	−0.002	−0.002	−0.002	−0.002	−0.002	−0.001	−0.001	−0.001	−0.001	−0.001
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.003)	(0.004)	(0.003)	(0.003)	(0.003)
OPE	+	0.005	0.005	0.005	0.005	0.005	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
LNTA	?	0.214	0.215	0.218	0.226	0.218	0.224	0.224	0.225	0.232	0.226	0.236	0.236	0.234	0.242	0.236
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
R^2		0.166	0.165	0.164	0.164	0.164	0.172	0.173	0.171	0.170	0.171	0.173	0.174	0.173	0.172	0.173
Adjusted R^2		0.163	0.162	0.161	0.161	0.161	0.168	0.169	0.167	0.167	0.167	0.167	0.169	0.168	0.167	0.168
F-statistic		50.104	49.924	51.491	51.647	51.533	42.383	42.470	43.893	43.726	43.897	32.106	32.391	33.713	33.441	33.702
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
N		6,069	6,069	6,069	6,069	6,069	4,705	4,705	4,705	4,705	4705	3,406	3,406	3,406	3,406	3,406

Source: Designed by the authors.

Note: the values in parentheses stand for probability.

Table 5 Results of regression models (continued)

Model	Expected sign	Model CCD-I					Model CCD-II					Model CCD-III				
		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
C	?	−1.949 (0.000)	−1.901 (0.000)	−1.896 (0.000)	−1.919 (0.000)	−1.941 (0.000)	−1.763 (0.000)	−1.741 (0.000)	−1.720 (0.000)	−1.753 (0.000)	−1.755 (0.000)	−2.065 (0.000)	−2.059 (0.000)	−2.036 (0.000)	−2.068 (0.000)	−2.062 (0.000)
*SH*2/1	–	−0.119 (0.007)					−0.094 (0.053)					−0.074 (0.196)				
*SH*23/1	–		−0.063 (0.022)					−0.065 (0.031)					−0.059 (0.100)			
*SH*3/12	–			−0.269 (0.027)					−0.333 (0.014)					−0.319 (0.046)		
*SH*2t5/1	–				−0.034 (0.107)					−0.038 (0.097)					−0.035 (0.193)	
*SH*345/12	–					−0.050 (0.411)					−0.098 (0.144)					−0.104 (0.185)
*SH*45/123	–	0.257 (0.083)					0.063 (0.694)					−0.034 (0.853)				

(*Continued*)

Model	Expected sign	Model CCD-I					Model CCD-II					Model CCD-III				
		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Year	–	–0.076	–0.076	–0.076	–0.076	–0.076	–0.069	–0.069	–0.070	–0.070	–0.070	–0.058	–0.058	–0.058	–0.058	–0.058
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ST	–	–0.257	–0.255	–0.256	–0.255	–0.257	–0.259	–0.258	–0.260	-0.258	–0.258	–0.262	–0.262	–0.263	–0.262	–0.262
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
$Indus_i$	?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Y_j	?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No
DTA	–	–0.002	–0.002	–0.002	–0.002	–0.002	–0.002	–0.002	–0.002	–0.002	–0.002	–0.001	–0.001	–0.001	–0.001	(0.000)
–0.001																
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.003)	(0.003)	(0.003)	(0.002)	(0.002)	
OPE	+	0.005	0.005	0.005	0.005	0.005	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
LNTA	?	0.224	0.222	0.222	0.223	0.224	0.234	0.233	0.232	0.233	0.233	0.247	0.247	0.246	0.247	0.247
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
R^2		0.163	0.162	0.162	0.162	0.162	0.168	0.168	0.168	0.167	0.167	0.165	0.166	0.166	0.165	0.165
Adjusted R^2		0.160	0.159	0.159	0.159	0.159	0.164	0.164	0.164	0.164	0.164	0.160	0.161	0.161	0.160	0.160
F-statistic		51.091	53.287	53.264	53.142	53.083	42.887	44.979	45.062	44.872	44.837	31.959	33.594	33.670	33.534	33.538
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
N		6,069	6,069	6,069	6,069	6,069	4,705	4,705	4,705	4,705	4,705	3,406	3,406	3,406	3,406	3,406

Source: Designed by the authors.

Note: the values in parentheses stand for probability.

5 Conclusions and suggestions

From the angle of corporate governance, we explored in this article the share ratio of the top five blockholders and the effect of a counterbalance and supervision mechanism among blockholders upon cash dividend distribution. We also studied the "tunneling" effect of cash dividend resulted from the abnormal phenomenon of "the same shares with the same rights but different prices" and discussed the influence and balance mechanism behind it. Main conclusions are reached as follows.

(1) Serious benefit conflicts do exist between the controlling shareholders and the small and medium shareholders. Blockholders may abuse their controlling rights to pursue their own interests at the expense of interests of the small and medium shareholders. The facts that there is a significantly positive relationship between share ratio of the first blockholders and that the first blockholder has absolute control over the company and the cash dividend distributed by the company imply that the first blockholders (controlling shareholders) in China listed companies have a special preference for the tunneling effect resulted from "the same shares with the same rights but different prices". Although the cash dividend may not be the most optimal choice for the controlling blockholders, it is the best possible choice of transferring resources from listed companies while all other alternatives are under increasingly strict market regulations and governmental supervision. Under such circumstances, the excess return resulted form the special phenomenon of "the same shares with the same rights but different prices" would stimulate the controlling shareholder to expropriate the small and medium shareholders by means of cash dividend distribution.

(2) The U-shaped relationship between the share ratio of the first blockholder, the share ratios of the top five blockholders and cash dividend distribution shows that blockholders need to weigh the costs and benefits while making decisions for dividend distribution. When the share ratio of the first blockholder (or controlling shareholder) is relatively low, the influence from the cash dividend costs appears more important. As the share ratio of the first blockholder (or controlling shareholder) rises, the corresponding opportunity cost resulted form not choosing cash dividend also increases. Once the marginal revenue exceeds the marginal cost, blockholders (or controlling shareholders) become increasingly inclined to distribute more dividends in cash and get excess return through the tunneling effect of cash dividend, while the interests of the small and medium shareholders were expropriated.

(3) Our results showed that the share ratio of the third blockholder is significantly negatively related to the cash dividend. It indicates that although the third blockholder may possibly benefit from the special phenomenon of "the same shares with the same rights but different prices", his interest may also

be expropriated when the first blockholder gains excess return through cash dividend distribution. Thus the third blockholder may not prefer to "tunneling" of cash dividend. On the contrary, he may act as a monitor or supervisor and try to reduce the "tunneling". This conclusion is consistent with several foreign researchers' findings that the coexistence of several blockholders may monitor and counterbalance one another, thus effectively restricting the interest violation from happening (Pagano and Roel, 1998; Bennedsen and Wolfenzon, 2000; Cronqvist and Nilsson, 2001)

(4) The fourth and fifth blockholders incline to collude with the controlling shareholder. Our regression results showed that the higher share ratio of the fourth and fifth blockholders and the higher sum share ratio of the fourth and fifth blockholders, the higher counterbalance degree of the fourth and fifth blockholders to the top three blockholders, and the more cash dividend will be distributed. These results indicate that on the one hand, compared with the first blockholder, the counterbalance ability of the fourth and fifth blockholders (even though they unite together) is limited due to their low share ratios; on the other hand, the fourth and fifth blockholders may find that the gains from colluding with the controlling shareholders (such as affiliated transactions) outweigh the benefits from being a supervisor or a balancer. Thereby they would choose to collude with the controlling shareholders.

(5) Although blockholders in China's listed companies may supervise and counterbalance each other, there is also a likelihood of collusion. The regression model shows that there is no expected linear relationship between the share ratio of the second blockholder and cash dividend, suggesting that although the second blockholder has comparatively strong counterbalance ability against the first blockholders, he has failed to reduce the tunneling effect of cash dividend by means of effectively counterbalance the first blockholder. On the contrary, the same as the first blockholder, there is a U-shaped relationship between the share ratio of the second blockholder and cash dividend distributed, clearly indicating a possible collusion between the first two blockholders to a certain degree. That is to say, the second blockholder may have also involved into the "tunneling" effect of cash dividend together with the first blockholder. However, the regression coefficients show that the influence may be quite weak. Also, the regression models disclosed that the higher counterbalance of the second blockholder to the first one, the second and third blockholders to the first one, the second to the fifth blockholders to the first one, the less cash dividend will be distributed, which suggests that the second blockholder has played somewhat supervising and counterbalancing roles.

(6) Our regression models show that the higher counterbalance degree of the second blockholder to the first one, the second and third blockholders to the first one, the third blockholder to the top two, the second to fifth blockholders to the

first one, the lower cash dividend will be distributed. We can thus summarize that the counterbalance mechanism, including combined counterbalance behaviors, would help reduce "tunneling" of cash dividend. As an ally means strong counterbalance ability and higher returns, the second to the fifth blockholders may unite to supervise and restrict the first blockholder (or controlling shareholders).

Moreover, our results show that listed companies with the following characteristics tend to distribute more cash dividend: new listed companies (*Year*), non-ST listed companies (*ST*), low financial leverage (*DTA*), high prime operating revenue ratio (*OPE*) and a large company size (*LNTA*). This indicates the results as follows. First, the behavior choices of blockholders appear to be short-termed. Most blockholders are not interested in constantly improving the overall performance of the company. Instead, they are more concerned about getting excess returns through cash dividend tunneling at the early stage of a listed company's development. Thus as time goes by, the profitability, growth potential and financial situation of many listed companies worsen. The consequences are twofold: on the one hand, the company is of less and less investment value; on the other hand, the excess returns the controlling shareholder can get from the company through tunneling also decrease. Second, when being termed as a ST listed company, it means the company has poor profitability, bad financial conditions and exhausting cash flow. Such companies usually face strong possibility of becoming delisted and under stricter market supervision. Thus it becomes less likely for blockholders to get excess return through the tunnel of cash dividend. Third, listed companies with higher financial leverages usually have fewer amounts of cash at hand and stronger governance from creditors. All these factors may help prevent blockholder from violating the interests of small and medium shareholders and the creditors through tunneling behaviors. Fourth, companies with a high profitability may become more likely to be tunneled by blockholders since these companies have comparatively larger amounts of distributable cash. Fifth, most of large-sized listed companies in China are owned by the state. The first blockholder or biggest shareholders of these companies are the state or state-owned legal person and they held huge amounts of non-tradable stocks. The unreasonable ownership structure of these companies will well motivate the private blockholders to seek for excess returns through the tunnel of cash dividend.

Drawing on the above findings, we propose suggestions as below. (1) To make laws to protect the interests of investors (especially the small and medium shareholders) and to restrict blockholders from gaining excess return through tunneling effect. (2) To strengthen market supervision to reduce collusions of blockholders and to encourage mutual-supervision and mutual-counterbalance mechanisms among blockholders so as to reduce the occurrence of cash dividend

tunneling. (3) To establish better system of investor relationship management and to implement protective measures such as cumulative voting or exertion-voting system to protect the interests of small and medium investors. We will try to set up on-line voting system and corporate governance information system in order to communicate effectively with all kinds of investors. (4) To reform the ownership structure of listed companies by introducing properly creditor governance mechanism so as to reduce the short-term behaviors. (5) To restrict listed companies with serious problem of "the same shares with the same rights but different prices" from distributing much cash dividend so as to reduce the tunneling effect. Meanwhile, to reduce gradually the state-owned shares and to circulate the non-tradable stocks held by state-owned listed companies.

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