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Dividends and earnings quality: Evidence from China

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Abstract

This paper investigates the association between dividend payouts and earnings quality for Chinese listed firms. The results show that dividend payouts are associated with more persistent earnings, higher accrual quality, and greater earnings informativeness, confirming the hypothesis on information content of dividends for Chinese firms. Further analyses show that the relationship between dividends and earnings could change with factors influencing the incentives to pay dividends. We find that the positive impact of dividend payouts on earnings quality is reduced for firms conducting equity refinancing. We also find evidence that the state ownership can reduce the information-conveying role of dividends.

Keywords: Dividends; earnings quality; equity refinancing; state ownership; China

JEL Codes: G32; G35

1. Introduction

This paper examines the association between dividend payouts and earnings

quality within China's institutional settings. Consistent with the information content of dividends hypothesis, this research finds that dividend payouts are associated with more persistent earnings, higher accrual quality, and greater earnings informativeness. More importantly, we identify the factors that distort firms' incentive to pay dividends from conveying information to pursuing other aims and we show that such factors have a significant impact on the relationship between dividend payouts and earnings quality.

Our research is motivated by the long line of literature on the hypothesis concerning the "information content of dividends" (Miller & Modigliani, 1961). The prior literature provides evidence that stock prices react to information conveyed by dividend payouts (Aharony & Swary, 1980; Asquith & Mullins, 1983; Healy & Palepu, 1988); however, the literature does not reach a consistent conclusion on whether dividends provide information about future earnings (Benartzi, Michaely, & Thaler, 1997; Grullon, Michaely, Benartzi, & Thaler, 2005; Nissim & Ziv, 2001). Recent research has begun to investigate the information content of dividends by examining whether dividend payouts per se provide information about earnings quality (Caskey & Hanlon, 2005; Skinner & Soltes, 2011; Tong & Miao, 2011).

Building on the prior literature, we argue that since dividends are supported by a more stable cash flow and reduce free cash flow, as well as provide corroborative evidence to investors, dividend-paying firms have higher earnings quality than non-dividend paying firms, indicated by more persistent earnings, lower discretional accruals, and greater earnings informativeness. Besides the basic association between

dividends and earnings quality, we further argue that the association would change given factors affecting managers' incentives to pay dividends. If firms pay dividends for other purpose rather than conveying information to the market, the information content of dividends would be reduced. In this case, such factors could also weaken the association between dividends and earnings quality.

We examine the above inferences with data of China's listed firms. We construct three proxies for earnings quality, which are earnings persistence, accrual quality, and earnings informativeness. We also construct both continuous and dummy variables to measure the dividend payout status. With the above sets of comprehensive measurements, we first document that firms paying dividends have higher earnings quality, which is consistent with the recent evidence from the US market (Skinner & Soltes, 2011; Tong & Miao, 2011).

We further examine how the association between dividends and earnings quality change if the incentives to pay dividends are distorted. We first analyze the impact of equity refinancing and our empirical results illustrate that as firms could utilize dividend payouts to obtain qualifications of equity refinancing, the dividends of firms conducting equity refinancing provide less information on earnings quality. We also investigate the moderating effect of state ownership and find evidence that government ownership weakens the impact of dividend payouts on earnings quality, which is consistent with the dividends tunneling argument.

We use data of Chinese listed firms for several reasons. China's security market is at the developing stage, and the earnings quality is lower than that in developed

markets (Allen, Qian & Qian, 2005). Dividend payouts require firms to have a real cash flow, so dividends are regarded as "hard evidence" complementary to earnings. Moreover, different from some developed markets in US or UK, China's Company Law has strict constrains on stock repurchase, which requires that only under very few conditions, could firms repurchase their stocks. In this case, investors have to rely more on cash dividends to obtain additional information. All the differences between China's market and other developed market make the research on the relation between dividends and earnings quality in Chinese firms have more implications for other emerging markets like China.

Moreover, the prior literature focusing on information content of dividends simply examines the association between dividends and present or future earnings without considering the other incentives to pay dividends rather than conveying information. China's financial market provides an excellent institutional setting to address this issue. Since 2001, the Chinese authorities have made continuous efforts to require listed firms to pay cash dividends, which is regarded as an instrument to protect the benefit of minority investors. To achieve this goal, the authorities use history of dividend payments as one key criterion to approve the application of new share issuance. If firms pay dividends to qualify for equity refinancing rather than conveying additional information, the informative role of dividend payouts would be weakened. Additionally, the special ownership structure dominated by state ownership also might lead firms to pay dividends to facilitate the controlling shareholders to transfer resources out of firms rather than conveying information. Given this

institutional settings, we could observe how the information content changes when the incentives of paying dividends are distorted from conveying information.

Our research contributes to the current literature in the following respects. First of all, we provide empirical evidence on the association between dividends and earnings quality from an emerging market in which the reported earnings are of low quality and thus dividends can provide more incremental information to accounting data for decision makers. Secondly, we show that the relation between dividends and earnings quality would change when the incentives to pay dividends change. Most of existing literature focuses on the basic association between dividends and earnings quality without considering other incentives to pay dividends rather than conveying information. Our empirical evidence could not only provide supportive evidence on the basic relation shown by the prior literature, but also document that the information-providing role of dividends in earnings quality would be weakened if the incentives to pay dividends are distorted.

The rest of the paper is organized as follows. Section 2 briefly reviews the related literature and formulates the main research hypothesis. Section 3 describes the research design and empirical specifications. Section 4 describes the data and samples used in the empirical tests. Section 5 reports the basic empirical results and the results of the additional tests. Section 6 concludes the paper.

2. Related literature and hypothesis

Since Miller and Modigliani (1961) put forward the hypothesis concerning the "information content of dividends," which argues that dividends could convey

information about firms' future cash flow, numerous studies have examined whether dividends indicate firms earnings. One stream of the literature examines the association between dividends and stock price, and most of the studies find that stock price has a significant reaction to a change in dividend policies and that investors regard dividends as providing corroborative evidence for the announced earnings. Aharony and Swary (1980) examine the market reaction to the announcement of earnings and dividends. They find that the stock price has a more obvious reaction to dividends than to earnings, and they explain this result as indicating that the management can time dividends announcements but cannot time earnings announcements, so dividends could provide more information about firms' true performance. Kane, Lee, and Marcus (1984) further confirm the corroboration effect of dividends and find that when the information on earnings and dividends differs, investors could use the dividends information to revise the information that they receive from earnings.

Besides the market reaction, another line of literature investigates the association between dividends and future earnings, but there are no consistent conclusions on this issue. Healy and Palepu (1988) find that earnings increase after initiating dividend payments and decrease after omitting dividend payments. Their results also show that the stock price reacts to such dividend announcements, as investors interpreting these announcements as managers' forecast of future earnings changes. According to Nissim and Ziv (2001), dividend changes provide incremental information about profitability in subsequent years. Hanlon, Myers, and Shevlin (2007) document that

the stock returns of dividend-paying firms are more associated with future earnings than the returns of non-dividend-paying firms. Contrary to the above results, Grullon et al. (2005) find that dividend changes impart no information about future earnings.

Some recent literature investigates the information content of dividends by examining whether dividends provide information about the quality of current earnings. Caskey and Hanlon (2005) use accusations of fraud in the SEC as a measurement of earnings quality and find that firms accused of accounting fraud pay dividends less often than non-accused firms. Skinner and Soltes (2011) find that firms paying dividends have more persistent earnings than other firms and the relation between dividends and earnings persistence has been stable for thirty years for US firms. Tong and Miao (2011) provide complementary evidence to this issue by showing that dividend-paying firms have lower discretional accruals and more value-relevant earnings and that such an association is stronger in firms with larger dividend payouts.

Considering China's special institutional settings, existing literature provides evidence on the information content of dividends in Chinese firms. Dedman, Jiang and Stark (2015) find that cash dividends could convey value-relevance information and have predictive power for future earnings and future cash dividends. When firms do not pay cash dividends, stock dividends could also take the role of cash dividends. Cheng, Fun and Leung (2009) find that the investors respond negatively to the announcement of cash dividends, as investors regards the cash dividends as instrument of tunneling used by the non-tradable shareholders. To the contrary, Chen,

Jian, and Xu (2009) show that there is positive market reaction to the change of dividends but the positive effect is weakened when firms have large price discounts for non-tradable shares in IPO process, have issued new shares or are eligibility for right issues. Nguyen and Wang (2013) reach the similar conclusion with Chen et al. (2009) and their further investigation on analysts show that analysts will not revise earnings forecast with the announcement of stock dividends. Chen, Liu and Huang (2009) also get the consistent finding and they find that the positive market reaction to dividends announcement varies with different firms' characteristics.

Although the prior literature has inconsistent conclusions, these studies provide supportive evidence for the information content of dividends for Chinese firms. However, most of the research only use the event study methodology and focus on the market reaction to dividends announcement. There is rare evidence on Chinese firms to show whether dividends could provide additional information to current reported earnings, given the weak institutional environment for earnings disclosure. Therefore, this study will investigate the information content of dividends in Chinese firms by examining the association between dividends and current earnings quality. At the same time, most of the literature notices that the incentives of Chinese firms to pay dividend are really diversified, so we will further explore how the factors affecting the incentives to pay dividends influence the information content of dividends.

Building on the prior literature, we argue that dividend payouts have a positive relation with earnings quality for several reasons. Firstly, dividend payouts require a stable and confirmed cash flow, which is the primary determinant of managers'

decision making regarding dividends (Brav, Graham, Harvey, & Michaely, 2005; Chay & Suh, 2009). A stable cash flow could support more persistent earnings; therefore, firms paying dividends tend to have more persistent earnings, which is one feature of high earnings quality. Secondly, the cash outflow for dividend payouts reduces the free cash flow controlled by insiders and thus further constrains managerial opportunistic behaviors. Firms paying dividends also have a higher probability of raising external capital, which can play a monitoring role and mitigate the insiders' agency problem. Constrained managers of dividend payers have fewer possibilities to report discretionally manipulated earnings than managers of non-dividend payers, reflected by the lower level of discretional accruals, which is another characteristic of higher earnings quality. Thirdly, market investors use information conveyed by dividends as insurance for the credibility of reported earnings and believe that dividends provide additional information about firms' performance. In this scenario, the stock return of dividend payers would respond more to earnings changes, suggesting greater earnings informativeness of these firms.

In accordance with the above argument, we formulate the main hypothesis as follows:

Dividend-paying firms have higher earnings quality than non-dividend-paying firms.

3. Research methodology

According to the three channels through which dividends can affect earnings quality, we select three proxies to measure three properties of earnings quality

following the prior literature (Dechow, Ge, & Schrand, 2010; Skinner & Soltes, 2011; Tong & Miao, 2011). The first measure relates to earnings persistence, and we use the following model (1) to estimate the impact of dividends on earnings quality. The reasoning behind the use of earnings persistence is that dividend payments are associated with permanent operating cash flows (Jagannathan, Stephens, & Weisbach, 2000), so firms paying dividends have more persistent earnings.

$$Earnings_{i,t+1} = \alpha + \beta_1 \times Earnings_{i,t} + \beta_2 \times Earnings_{i,t} \times Dividends_{i,t} + \varepsilon \tag{1}$$

In this model, $Earnings_{i,t}$ and $Earnings_{i,t+1}$ are firm i's earnings per share for year t and year t+1, scaled by the stock price for year t and year t+1, respectively. For *Dividend*, we use both continuous and dummy variables. The continuous variable is the dividend yield calculated by the cash dividend per share divided by the stock price, following Naranjo, Nimalendran, & Ryngaert (1998) and Graham & Kumar (2006). The dummy variable is an indicator which equals 1 if firms pay cash dividends in year t and 0 otherwise. If dividends relate to more sustainable earnings, we expect β_1 to be positive and β_2, which reflects the incremental effect of dividend payouts, also to be positive, suggesting that dividend payouts increase earnings persistence.

To facilitate following analyses with interaction terms, we also employ the following model (2) to estimate the earnings persistent measurement[1] for each firm with five-year rolling periods, measured by the coefficient β_1. Then we regress the earnings persistent measurement on the dividends variable in model (3).

[1] We thank the anonymous reviewers' suggestion for this methodology.

$$Earnings_{it+1} = \alpha + \beta_1 \times Earnings_{it} + \varepsilon \quad (2)$$

$$Persistent_{i,t} = \alpha + \beta_2 \times Dividend_{i,t} + \varepsilon \quad (3)$$

Variables in model (2) and (3) are the same with those in model (1). If dividends are associated with more persistent earnings, we expect β_2 to be positive.

We argue that dividend payouts can lower free cash flows and constrain managerial opportunistic behaviors, so the constrained management has less discretion over reported earnings. We select accrual quality to capture such discretion. Consistent with our free cash flow conjecture, we employ the cash flow estimated accrual model from Dechow and Dichev (2002), which is further adjusted by McNichols (2002). The model (4) is presented as follows,

$$TACC_{i,t} = \alpha_0 \times \frac{1}{TA_{i,t-1}} + \alpha_1 \times \frac{CFO_{i,t-1}}{TA_{i,t-1}} + \alpha_2 \times \frac{CFO_{i,t}}{TA_{i,t-1}} + \alpha_3 \times \frac{CFO_{i,t+1}}{TA_{i,t-1}} + \alpha_4 \times \frac{\Delta Sales_{i,t}}{TA_{i,t-1}} + \alpha_5 \times \frac{PPE_{i,t}}{TA_{i,t-1}} + \varepsilon \quad (4)$$

Where $TACC_{i,t}$ is the total current accrual estimated following Dechow and Dichev (2002), scaled by total assets. $CFO_{i,t-1}, CF_{i,t}, CF_{i,t+1}$ is firm i's operational cash flow for year t-1, year t, and year t+1, respectively. $\Delta Sales_{i,t}$ is the change in sales and $PPE_{i,t}$ is the fixed assets for year t. All the variables are scaled by the total assets in year t-1. The above accrual model is estimated annually by the China Securities Regulatory Commission's (CSRC) 13-industry classifications. At least 10 observations for each year and each industry are required.

From the above model, we obtain two proxies for accrual quality. One is the absolute value of the regression residuals (*AAQ*), whose higher value indicates lower earnings quality. The other is the five-year standard deviation of the regression

residuals (*AQ*), with a higher value suggesting lower earnings quality.

We employ the following regression model (5) to investigate the association between dividend payouts and accrual quality:

$$AQ_{i,t} \ / \ AAQ_{i,t} = \alpha + \beta \times Dividends_{i,t} + Controls + \varepsilon \qquad (5)$$

Where AQ_{it} and AAQ_{it} are two proxies for accrual quality and $Dividend_{i,t}$ is continuous and dummy variables for dividend payouts. Dividend payouts could reduce the free cash flow for the managers and thus restrict managerial discretionary manipulation of accruals, so we expect a negative association between abnormal accruals and dividends and β to be negative.

For the accrual regressions, we include the natural logarithm of total assets (*Size*), leverage (*Lev*), book-to-market ratio (*BM*), return on assets (*ROA*), and firm age (*Age*) to control the basic firm characteristics. We also include other governance variables that could affect the earnings quality, such as the shares held by the largest shareholder (*Largest*), duality of Chairman and CEO (*Duality*), and percentage of independent directors (*Indep*).

The last measure of earnings quality relates to investors' response to earnings, measured by the earnings response coefficient (ERC). We conjecture that if dividends are associated with better earnings quality, investors would consider dividend payouts to provide additional information to reported earnings, so the stock return would respond more to change of earnings in firms paying dividends. We utilize the following model (6) to test the above argument:

$$Ret_{i,t} = \alpha + \beta_1 \times Earnings_{i,t} + \beta_2 \times \Delta Eearnings_{i,t} + \beta_3 \times \Delta Eearnings_{i,t} \times Dividend_{i,t} + \varepsilon$$

(6)

Where $Ret_{i,t}$ is the 12-month buy-and-hold stock return from May in year t to April in year t+1, adjusted by the market performance. $Earnings_{i,t}$ is the earnings per share, scaled by the stock price at the end of year t-1. $\Delta Earnings_{i,t}$ is the change in earnings per share, scaled by the stock price at the end of year t-1. $Dividend_{i,t}$ is continuous and dummy variables for dividend payouts. If dividends do provide additional information for investors to confirm earnings information, we expect β_3 to be positive.

Similarly, to facilitate following analyses with interaction terms, we also estimate model (7) to estimate the ERC for each firm with five-year rolling periods, measured by β_2 from the regression[2]. Then we regress the estimated ERC on the dividends variable in model (8) and if dividends could provide incremental information for investors, we expect β_3 to be positive.

$$Ret_{i,t} = \alpha + \beta_1 Earnings_{i,t} + \beta_2 \Delta Eearnings_{i,t} + \varepsilon \quad (7)$$

$$ERC_{i,t} = \alpha + \beta_3 Dividend_{i,t} + \varepsilon \quad (8)$$

All variables used in above estimation models are defined in Table 1.

4. Data and sample

Our sample includes all non-financial Chinese listed firms from the CSMAR database. Our sample period starts from 1999 and ends in 2014. We further require all firms to have complete data for the above regression models and data to estimate

[2] We thank the anonymous reviewers' suggestion for this methodology.

accruals. All continuous variables are winsorized at the 1% level at both ends. Finally, we obtain 24,874 firm-year observations for our empirical analysis[3].

Table 2 presents the summary statistics for all the variables. The results reveal that Chinese listed firms pay low cash dividends to investors, paying only 1% of earnings as dividends. However, percentage of firms paying dividends is high with 60% of all the observations paying dividends. Abnormal accruals have an average value of 0.09 and AQ has an average value of 0.13, which are much higher than the estimations of Tong and Miao (2011), suggesting that, compared with US firms, Chinese firms have lower earnings quality measured by abnormal accruals.

5. Empirical results

5.1. Basic results on the association between dividends and earnings quality

We first examine the relationship between dividends and earnings quality with three measures of earnings quality. We first examine whether firms paying dividends report more persistent earnings; the results are reported in Table 3. In column (1) and (2), for both continuous and dummy variables for dividends, the interaction terms of dividend payouts and earnings have significantly positive coefficients, suggesting that dividend payouts can improve the persistence of earnings. The results are also consistent when earnings persistence estimates are regressed on dividends variables. In last two columns, we include more control variables used in model (5) which might

[3] The measurement of accruals require estimation with at least ten firm-year observation and abnormal accruals of five-year standard deviation of the regression residuals requires at least five years sample period, so we only have 22479 and 13,127 observations for the two variables for accrual quality. Because the authorities only require to disclosure the firms' ultimate controlling shareholders and the shares held by largest shareholders, we only have 20,606 observations for the variable of *Largest* and *State*.

have effect on earnings persistence in order rule out the concerns about omitted correlated variables and produce more robust results[4]. We find that the estimated coefficients of dividends variables keep unchanged after including more control variables. All these results is consistent with the conclusion of Skinner and Soltes (2011) that dividends provide more information about the permanent earnings and require more stable cash flows, so firms paying dividends have more persistent earnings.

We then examine the association between dividend payouts and accrual quality in Table 4[5]. In the first two columns, we regress the absolute value of abnormal accruals on dividend payouts variables. The results show that dividend payouts are negatively related to abnormal accruals, implying that firms report higher-quality earnings when they pay dividends. We obtain similar results for the standard deviation of abnormal accruals in the last two columns. These results are consistent with Tong and Miao (2011). On one hand, dividend payments are associated with more stable cash flows, so firms paying dividends map the cash flows into reported earnings better and thus have better earnings quality. On the other hand, dividend payouts reduce the free cash flow control by the managers and thus constrain the discretion over financial reporting by opportunistic management.

In Table 5, we present the results for the association between earnings

[4] We thank the anonymous reviewers' suggestion for these tests.
[5] As some variables have missing values as mentioned in notes 3, the observations in the final regressions are reduced to 19,290 and 13,011 in two models.

informativeness and dividends. As a benchmark, the positive coefficient of change in earnings is the basic ERC. The interaction term of dividend payouts and change in earnings reflects the incremental effect of dividends on the ERC. Results in the first two columns show that the interaction terms have significantly positive coefficients, indicating that dividends can convey additional information to investors about earnings, so the stock return responds more to the earnings information for firms paying dividends. We directly regress ERC on dividends variables in column (3) and (4), and the results confirm that dividends increase the investors' response to reported earnings. In last two columns, we also include all control variables which might influence ERC and the results keep consistent with basic regressions.

Taken together, the above results support our conjecture that dividend payouts have a positive association with earnings quality. To be specific, firms paying dividends have more persistent earnings, higher accrual quality, and better earnings informativeness.

5.2 Moderating effects of equity refinancing

There is an implied assumption in the above analyses that firms can freely decide whether to pay dividends or not. Therefore, dividend payouts can convey additional information on reported earnings. However, the incentives to pay dividends could differ for Chinese listed firms. In 2001, the China Securities Regulatory Commission (CSRC) published its "*Guidance for new share issuance"*, which requires that if firms do not pay continuous cash dividends in the previous three years and the boards do

not provide reasonable explanations, firms' refinancing applications for the current year could be rejected. Deng, Li, Liao, and Wu (2013) report that the percentage of cash dividend payers of all listed firms has increased from less than 30% to more than 50% since 2001. In the following year, the authorities use history of dividends payments as one key criterion to decide whether to approve the applications of new share issuance. Such institutional settings would change the incentives to pay dividends to qualify for equity refinancing. In this case, managers would use dividend payouts as an instrument for future refinancing rather to convey additional information, which weakens the informative role of dividends.

To address the effect of equity refinancing, we include a new indicator for equity refinancing (*ER*) to test the moderating effect of refinancing on the relation between dividends and earnings quality for our three earnings quality measures with the following regression models (9)–(11):

$$Persistent_{i,t} = \alpha + \beta_1 \times Dividend_{i,t} + \beta_2 \times Dividend_{i,t} \times ER_{i,t} + \varepsilon \quad (9)$$

$$AQ_{i,t} \ / \ AAQ_{i,t} = \alpha + \beta_1 \times Dividend_{i,t} + \beta_1 \times Dividend_{i,t} \times ER + Controls + \varepsilon \quad (10)$$

$$ERC_{i,t} = \alpha + \beta_1 \times Dividend_{i,t} + \beta_2 \times Dividend_{i,t} \times ER_{i,t} + \varepsilon \quad (11)$$

In the above models, all the variables are the same as those defined above. *ER* is an indicator which equals 1 if the firms have equity refinancing in year t and 0 otherwise. If firms pay dividends with the incentive of conducting refinancing, the information-signaling role of dividend payouts will be weakened. Therefore, we expect the coefficients of the interaction terms of dividends and the equity refinancing

indicator to have the opposite sign to the coefficients of dividends. To be specific, in the above three models, we expect β_2 in model (9) and β_2 in model (11) to be negative, and β_2 in model (10) to be positive, respectively, suggesting that the dividends of firms conducting equity refinancing convey less information about earnings than those in firms without equity refinancing.

The empirical results for the effect of equity refinancing are reported in Table 6. For each earnings quality regression models, we first examine the role of equity refinancing on earnings quality in the first column in Panel A, Panel C, and the first two columns in Panel B[6] as benchmarks. The results show that the equity refinancing indicators have insignificant coefficients, suggesting that the equity refinancing itself can not affect earnings quality.

We further examine the moderating role of equity refinancing on the association between earnings quality and dividends. For the earnings persistence model in Panel A, the interaction terms of dividends and the equity refinancing indicators have significant and negative coefficients, suggesting that the dividend payouts of firms conducting equity refinancing have a weaker impact on earnings persistence. After including all control variables in last two columns, the coefficients of the interaction terms keep unchanged. The results for accrual quality in Panel B are quite similar to those in Panel A. The interaction terms of dividends and the equity refinancing indicators have significant and positive coefficients, which implies that equity refinancing weakens the dividends' negative impact on abnormal accruals. The

[6] We thank the anonymous reviewers' suggestion for these tests.

earnings informativeness regressions produce similar results in Panel C. The coefficients of the interaction terms of dividends and the equity refinancing indicator are significantly negative, indicating that equity refinancing weakens the power of dividends' signaling function for reported earnings and the results are robust after including numbers of control variables. These results are consistent with Chen, Jian, and Xu (2009), who argue that equity refinancing reduce the information content of dividends.

To further confirm the argument that distorted incentive of paying dividends weakens the information contents of dividends, we conduct further analyses with sample before the authorities' regulation on equity refinancing in 2001[7]. If our conjecture about the moderating effect of equity refinancing is correct, we expect the moderating effect to disappear in the period when firms do not have incentive to use dividends as instruments to obtain qualification of equity refinancing. Therefore, we repeat model (9) to (11) with samples before 2001 and the results are reported in Table 7. We find that the coefficients of dividends variables are significant but the coefficients of interaction terms between dividends and equity refinancing lose significance throughout all regressions. The results imply that when the managers do not have incentive to pay dividends to acquire qualifications of equity refinancing, the equity refinancing would not affect the information content of dividends.

[7] We thank the anonymous reviewers' suggestion for this test.

5.3 The moderating effect of ultimate ownership

Chinese firms also have another special feature in that firms have different ultimate owners. Government or private ownership will also affect the association between dividend payouts and earnings quality. For instance, Anderson, Chi, Ing-aram, and Liang (2011) show that state shareholders prefer cash dividends to stock dividends. Firms owned by the government tend to pay more dividends, which is an instrument employed by controlling shareholders for tunneling (Chen, Jian, & Xu, 2009; Choiu, Chen, & Huang, 2010). As the ultimate ownership will affect firms' incentive to pay dividends, if managers pay dividends to pursue private benefits of the controlling shareholders rather than conveying information, the dividends' informativeness would be reduced.

Similar to the prior analyses, we introduce a new interaction term of dividends and a state ultimate indicator (*State*) to our basic regression models. The new empirical models (12)–(14) are as follows:

$$Persistent_{i,t} = \alpha + \beta_1 \times Dividend_{i,t} + \beta_2 \times Dividend_{i,t} \times State_{i,t} + \varepsilon \quad (12)$$

$$AQ_{i,t} \ / \ AAQ_{i,t} = \alpha + \beta_1 \times Dividend_{i,t} + \beta_1 \times Dividend_{i,t} \times State_{i,t} + Controls + \varepsilon \quad (13)$$

$$ERC_{i,t} = \alpha + \beta_1 \times Dividend_{i,t} + \beta_2 \times Dividend_{i,t} \times State_{i,t} + \varepsilon \quad (14)$$

In the above models, all the variables are the same as those defined above. *State* is an indicator that equals 1 if the firms' ultimate owners are central or local governments and 0 otherwise. The ultimate owners are defined as the controlling shareholder at the end of the controlling chain of the firms. If firms' dividend payouts

are driven by the state owners' willingness to tunnel firms' resources, the information-signaling role of dividend payouts will be weakened. Therefore, we expect the coefficients of the interaction terms of dividends and the state indicator to have the opposite sign to the coefficients of dividends. To be specific, in the above three models, β_2 in model (12) and β_2 in model (14) to be negative, and β_2 in model (13) to be positive, respectively, suggesting that the dividends of firms with state owners provide less information on earnings.

Table 8 reports the results for the effect of different types of ownership. Similarly, we first examine the effect of ownership structure on earnings quality and the results in first column in Panel A, Panel C and the first two column in Panel B. We find results which is consistent with prior research show that because the government mitigates the managers' pressure to management earnings, earnings in SOEs are more persistent and the accrual quality is high (Firth, Fund & Rui, 2007; Wang & Yung, 2011;), but the earnings informativeness is low (Firth, Fund & Rui, 2007).

Throughout all our three regression models in Panel A, Panel B, and Panel C, the interaction terms of dividend payouts and the state indicator have significant coefficients as expected and the results in Panel A and Panel C are also robust after including various control variables. To be specific, the state ownership reduces dividends' positive role of increasing earnings persistence and earnings informativeness and weakens dividends' positive role of decreasing abnormal accruals. The results are consistent with the argument that when state owners utilize dividends as an instrument to tunnel firms' resources, the power of dividends to increase

earnings quality is weakened in firms with state owners. The results are consistent with the results of Cheng, Fun and Leung (2009), who find that the tunneling incentives of state owners reduce the information content of dividends. However, considering the above results that state ownership also affects earnings quality, we should understand the moderating effect with caution.

6. Conclusion

This paper examines whether dividend payouts are associated with higher earnings quality. The research is conducted with data of Chinese listed firms, which face different institutional settings from those in the US. We first document that firms paying dividends have higher earnings quality, measured by earnings persistence, accrual quality, and earnings informativeness.

We provide further evidence on the association between dividend payouts and earnings quality by introducing factors that can affect firms' incentives to pay dividends. We analyze the impact of the factor of equity refinancing, whereby China's authorities require firms to pay continuous dividends to obtain the qualification of equity refinancing. Our empirical results show that the dividends of firms conducting equity refinancing lose power to convey information on earnings quality. We further investigate whether the relation between dividend payouts and earnings quality could change with different ultimate ownership. The empirical results show that the ownership has power to affect such an association. Firms with state ownership might

use dividends to transfer resources out of the firms, so dividends of these firms have less information content to predict current earnings.

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References

Aharony, J., & Swary, I. (1980). Quarterly dividend and earnings announcements and stockholders' returns: An empirical analysis. *Journal of Finance, 35*(1), 1–12.

Allen, A., Qian, J., & Qian, M. (2005). Law, finance, and economic growth in China. *Journal of Financial Economics,* 77, 57–116.

Anderson, H. D., Chi, J., Ing-aram, C., & Liang, L. (2011). Stock dividend puzzles in China. *Journal of the Asia Pacific Economy, 16*(3), 422–447.

Asquith, P., & Mullins, D. W. (1983). The impact of initiating dividend payment on shareholders' wealth. *Journal of Business, 56*(1), 77–96.

Benartzi, S., Michaely, R., & Thaler, R. H. (1997). Do changes in dividends signal the future or the past? *Journal of Finance, 52*(3), 1007–1034.

Brav, A., Graham, J. R., Harvey, C. R., & Michaely, R. (2005). Payout policy in the 21st century. *Journal of Financial Economics, 77*(3), 483–527.

Caskey, J., & Hanlon, M. (2005). Do dividends indicate honesty? The relation between dividends and the quality of earnings. *Working paper.* University of Michigan.

Chay, J. B., & Suh, J. (2009). Payout policy and cash-flow uncertainty. *Journal of Financial Economics, 93*(1), 88–107.

Chen, D., Jian, M., & Xu, M. (2009). Dividends for tunneling in a regulated economy: The case of China. *Pacific-Basin Finance Journal, 17*(2), 209–223.

Chen, D., Liu, H., & Huang, C. (2009). The announcement effect of cash dividend changes on share prices: An empirical analysis of China. *The China Economy,* 42(1),

62-85.

Chiou, J., Chen, Y., & Huang, T. (2010). Assets expropriation via cash dividends? Free cash flow or tunneling. *China Journal of Accounting Research, 3*(1), 71–94.

Dechow, P. M., & Dichev, I. D. (2002). The quality of accruals and earnings: The role of accrual estimation errors. *Accounting Review: Supplement*, 77(s-1), 35–59.

Dechow, P. M., Ge, W., & Schrand, C. (2010). Understanding earnings quality: A review of the proxies, their determinants and their consequences. *Journal of Accounting and Economics, 50*(2), 344–401.

Deng, L., Li, S., Liao, M., & Wu, W. (2013). Dividends, investment and cash flow uncertainty: Evidence from China. *International Review of Economics & Finance, 27*(3), 112–124.

Elisabeth D., Wei J., & Andrew S. (2015). The value relevance and information content of cash and stock dividends in China. *The European Journal of Finance,*

Firth, M., Fung, P. M. Y., & Rui, O. M. (2007). Ownership, two-tier board structure, and the informativeness of earnings – Evidence from China. *Journal of Accounting and Public Policy*, *26* (4), 463–496.

Graham, J. R., & Kumar, A. (2006). Do dividend clienteles exist? Evidence on dividend preferences of retail investors. *Journal of Finance*, 61(3), 1305-1336.

Grullon, G., Michaely, R., Benartzi, S., & Thaler, R. H. (2005). Dividend changes do not signal changes in future profitability. *Journal of Business, 78*(5), 1659–1682.

Hanlon, M., Myers, J., & Shevlin, T. (2007). Are dividends informative about future earnings? *Working paper*, University of Washington.

Healy, P. M., & Palepu, K. G. (1988). Earnings information conveyed by dividend initiations and omissions. *Journal of Financial Economics, 21*(2), 149–175.

Jagannathan, M., Stephens, C. P., & Weisbach, M. S. (2000). Financial flexibility and the choice between dividends and stock repurchases. *Journal of Financial Economics, 57*(3), 355–384.

Kane, A., Lee, Y. K., & Marcus, A. (1984). Earnings and dividend announcements: Is there a corroboration effect? *Journal of Finance, 39*, 1091–1099.

Louis T. W. Cheng, Hung-Gay Fung, Tak Yan Leung (2009). Dividend preference of tradable-share and non-tradable-share holders in Mainland China. *Accounting and Finance,* 49, 291–316.

McNichols, M. F. (2002). Discussion of the quality of accruals and earnings: The role of accrual estimation errors. *Accounting Review: Supplement, 77*(s-1), 61–69.

Miller, M. H., & Modigliani, F. (1961). Dividend policy, growth, and the valuation of shares. *Journal of Business, 34*(4), 422–433.

Naranjo, A., Nimalendran, M., & Ryngaert, M. (1998). Stock returns, dividend yields, and taxes. Journal of Finance, 53(6), 2029-2057.

Nhut H. Nguyen, David Y. Wang (2013). Stock dividends in China: signalling or liquidity explanations? *Accounting and Finance,* 53, 513–535.

Nissim, D., & Ziv, A. (2001). Dividend changes and future profitability. *Journal of Finance, 56*(6), 2111–2133.

Skinner, D. J., & Soltes, E. (2011). What do dividends tell us about earnings quality? *Review of Accounting Studies, 16*(1), 1–28.

Tong, Y. H., & Miao, B. (2011). Are dividends associated with the quality of earnings? *Accounting Horizons, 25*(1), 183–205.

Wang, L., & Yung, K. (2011). Do state enterprises manage earnings more than privately owned firms? The case of china. *Journal of Business Finance & Accounting, 38* (7-8), 794-812.

Table 1 Variable Definitions

Variable	Definition
Dependent Variables	
Persistence	Measurement for earnings persistence which is estimated coefficients from model (2).
AAQ	Measurement for value of abnormal accrual, which is absolute value of the regression residuals estimated using model (4).
AQ	Measurement for deviation of abnormal accrual, which is five-year standard deviation of the regression residuals estimated using model (4).
ERC	Earnings response coefficient, which is estimated coefficients from model (7).
Independent Variables	
DivRatio	Continuous variable for dividend payout calculated as dividend per share divided by the stock price.
DivDummy	Dummy variable for dividend payout equals 1 if firms pay cash dividends in year t and 0 otherwise.
Moderating Variables	
ER	Dummy variable for equity refinancing equals 1 if the firms conduct equity refinancing in year t and 0 otherwise.
State	Dummy variable for state ownership equals 1 if the firms' ultimate owners are central or local governments and 0 otherwise.
Control and other variables	

E_{t+1}	Firm i's earnings per share for year t+1, scaled by the stock price for year t+1.
E_t	Firm i's earnings per share for year t, scaled by the stock price for year t.
Ret	12-month buy-and-hold stock return from May in year t to April in year t+1 adjusted by the market performance.
ΔEarning	Change in earnings per share, scaled by the stock price at the end of year t-1
Size	Natural logarithm of the total assets.
Lev	Total liability divided by total assets.
BM	Market value of equity divided by the book value of equity.
ROA	Return on assets, calculated as net income divided by total assets.
Age	Firm age, which is number of years since the firm gets listed.
Largest	Percentage of total shares held by the largest shareholder to total outstanding shares.
Duality	Dummy variable equals 1 if one person takes both the Chairman and the CEO position and 0 otherwise.
Indep	The percentage of independent directors to all the board of directors

Table 2 Summary statistics.

This table presents the descriptive statistics of the main variables used in this paper.

	N	Mean	S. D.	Min.	Max.
E_{t+1}	24874	0.02	0.06	-0.35	0.15
E_t	24874	0.02	0.06	-0.35	0.15
AAQ	22479	0.09	0.12	0.00	0.77
AQ	13127	0.13	0.15	0.01	0.89
Ret	24874	0.24	0.72	-0.85	2.94
ΔEarning	24874	0.00	0.07	-0.31	0.30
DivRatio	24874	0.01	0.01	0.00	0.05
DivDummy	24874	0.60	0.49	0.00	1.00

ER	24874	0.08	0.27	0.00	1.00
State	20606	0.55	0.50	0.00	1.00
Size	24874	21.49	1.19	18.82	25.27
Lev	24874	0.47	0.24	0.05	1.73
BM	24874	0.41	0.28	-0.24	1.38
ROA	24874	0.03	0.07	-0.36	0.21
Age	24874	14.59	5.62	3.00	23.00
Largest	20606	0.37	0.16	0.09	0.76
Duality	24874	0.15	0.36	0.00	1.00
Indep	24874	2.85	1.20	0.00	5.00

Table 3 Dividends and earnings persistence – basic regression

This table presents the basic regression results of the earnings persistence model (1) and (3). E_t and E_{t+1} are firm i's earnings per share for year t and year t+1, scaled by the stock price for year t and year t+1. Persistence is estimated coefficients from model (2). DivRatio is the dividend yield with the dividend per share divided by the stock price. DivDummy is an indicator that equals 1 if firms pay cash dividends in year t and 0 otherwise. Size is the natural logarithm of the total assets. Lev is the financial leverage. BM is the book-to-market ratio. ROA is the return on assets. Age is the firm age. Largest is the shares held by the largest shareholder. Duality is an indicator that equals 1 if one person takes both the Chairman and the CEO position and 0 otherwise. Indep is the percentage of independent directors of all the board of directors. The robust t-value adjusted to heteroscedasticity is reported in parentheses. ***, **, and * denote coefficients that are statistically significant at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	E_{t+1}	E_{t+1}	Persistence	Persistence	Persistence	Persistence
E_t	0.319***	0.267***				
	(20.16)	(15.36)				
DivRatio	0.884***		1.452**		1.449**	
	(17.11)		(2.08)		(2.03)	
E_t * DivRatio	3.005***					
	(4.54)					
DivDummy		0.010***		0.008**		0.056***
		(11.18)		(2.30)		(6.80)
E_t * DivDummy		0.405***				
		(18.36)				
Size					0.033***	0.030***
					(3.83)	(2.90)
Lev					-0.034**	-0.022
					(-2.38)	(-1.63)
BM					0.012	0.021
					(0.48)	(0.92)
ROA					0.109***	0.060
					(2.64)	(1.26)
Age					0.019***	0.020***
					(16.71)	(14.77)
Largest					0.039	0.040
					(1.39)	(1.51)
Duality					-0.051***	-0.051***
					(-2.99)	(-2.99)
Indep					-0.025***	-0.025***
					(-2.93)	(-2.84)
Constants	-0.010***	-0.010***	0.309***	0.312***	-0.680***	-0.645***
	(-3.27)	(-3.37)	(8.07)	(8.15)	(-3.73)	(-3.11)
Industry	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Year	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
adj. R^2	0.22	0.23	0.03	0.03	0.07	0.07
F	135.19	158.37	104.42	89.07	117.67	92.15
N	24874	24874	24874	24874	24874	24874

Table 4 Dividends and accrual quality – basic regression

This table presents the basic regression results of the accrual quality model (5). AAQ is the absolute value of the regression residuals estimated using model (4). AQ is the five-year standard deviation of the regression residuals estimated using model (4). DivRatio is the dividend yield with the dividend per share divided by the stock price. DivDummy is an indicator that equals 1 if firms pay cash dividends in year t and 0 otherwise. Size is the natural logarithm of the total assets. Lev is the financial leverage. BM is the book-to-market ratio. ROA is the return on assets. Age is the firm age. Largest is the shares held by the largest shareholder. Duality is an indicator that equals 1 if one person takes both the Chairman and the CEO position and 0 otherwise. Indep is the percentage of independent directors of all the board of directors. The robust t-value adjusted to heteroscedasticity is reported in parentheses. ***, **, and * denote coefficients that are statistically significant at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)
	AAQ	AAQ	AQ	AQ
DivRatio	-0.353***		-0.514***	
	(-4.36)		(-3.58)	
DivDummy		-0.015***		-0.022***
		(-6.53)		(-5.71)
Size	-0.002*	-0.001	-0.007***	-0.005*
	(-1.93)	(-1.13)	(-2.67)	(-1.93)
Lev	0.055***	0.052***	0.075***	0.070***
	(9.15)	(8.57)	(6.77)	(6.30)
BM	-0.027***	-0.029***	-0.027***	-0.031***
	(-6.76)	(-7.40)	(-3.95)	(-4.41)
ROA	0.082***	0.096***	0.115***	0.134***
	(4.16)	(4.85)	(5.54)	(6.29)
Age	-0.000	-0.000**	0.001*	0.001
	(-1.36)	(-2.51)	(1.82)	(1.32)
Largest	0.008	0.008	0.041***	0.041***
	(1.31)	(1.32)	(2.91)	(2.97)
Duality	0.004	0.004	0.011*	0.010*
	(1.59)	(1.56)	(1.81)	(1.74)
Indep	-0.006***	-0.006***	-0.005	-0.005
	(-4.54)	(-4.56)	(-1.51)	(-1.52)
Constant	0.098***	0.087***	0.142***	0.117***
	(4.73)	(4.25)	(3.15)	(2.63)
Industry	Controlled	Controlled	Controlled	Controlled
Year	Controlled	Controlled	Controlled	Controlled
adj. R^2	0.19	0.19	0.35	0.36
F	72.25	72.52	39.74	42.09
N	19290	19290	13011	13011

Table 5 Dividends and earnings informativeness – basic regression

This table presents the basic regression results of the earnings response coefficient model (6) and (8). Ret is the 12-month buy-and-hold stock return from May in year t to April in year t+1 adjusted by the market performance. ERC is earnings response coefficient estimated from model (7). E_t is the earnings per share, scaled by the stock price at the end of year t-1. $\Delta Earnings_t$ is the change in earnings per share, scaled by the stock price at the end of year t-1. DivRatio is the dividend yield with the dividend per share divided by the stock price. DivDummy is an indicator that equals 1 if firms pay cash dividends in year t and 0 otherwise. Size is the natural logarithm of the total assets. Lev is the financial leverage. BM is the book-to-market ratio. ROA is the return on assets. Age is the firm age. Largest is the shares held by the largest shareholder. Duality is an indicator that equals 1 if one person takes both the Chairman and the CEO position and 0 otherwise. Indep is the percentage of independent directors of all the board of directors. The robust t-value robust t-value adjusted to heteroscedasticity is reported in parentheses. ***, **, and * denote coefficients that are statistically significant at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	Ret	Ret	ERC	ERC	ERC	ERC
E_t	1.569***	2.109***				
	(21.98)	(27.99)				
ΔEarning	1.079***	1.006***				
	(17.27)	(17.72)				
DivRatio	15.411***		0.594***		0.468***	
	(28.30)		(3.95)		(3.16)	
ΔEarning * DivRatio	341.208***					
	(17.60)					
DivDummy		0.121***		0.042***		0.009***
		(14.09)		(13.14)		(2.68)
ΔEarning * DivDummy		6.538***				
		(24.43)				
Size					-0.011***	-0.011***
					(-6.41)	(-6.29)
Lev					-0.053***	-0.052***
					(-6.91)	(-6.67)
BM					-0.020***	-0.018***
					(-3.25)	(-2.87)
ROA					-0.096***	-0.094***
					(-4.12)	(-4.02)
Age					-0.016***	-0.016***
					(-45.31)	(-44.29)
Largest					-0.012	-0.011
					(-1.09)	(-1.00)
Duality					0.032***	0.032***
					(6.57)	(6.58)

Indep					-0.006***	-0.006***
					(-2.73)	(-2.68)
Constant	-0.050	-0.021	0.741***	0.733***	0.688***	0.687***
	(-1.56)	(-0.65)	(47.63)	(46.97)	(20.91)	(20.60)
Industry	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Year	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
adj. R^2	0.30	0.27	0.38	0.38	0.41	0.41
F	190.70	168.83	313.67	315.91	79.32	79.07
N	24874	24874	24874	24874	24874	24874

Table 6 Equity refinancing, dividends, and earnings quality

This table presents the results on the effect of equity refinancing on the association between dividend payouts and earnings quality from models (9)–(11). In all three panels, DivRatio is the dividend yield with the dividend per share divided by the stock price. DivDummy is an indicator that equals 1 if firms pay cash dividends in year t and 0 otherwise. ER is an indicator that equals 1 if the firms conduct equity refinancing in year t and 0 otherwise. Panel A presents the results for the earnings persistence model. Persistence is estimated coefficients from model (2). Panel B presents the results for the accrual quality model. AAQ is the absolute value of the regression residuals estimated using model (4). AQ is the five-year standard deviation of the regression residuals estimated using model (4). Size is the natural logarithm of the total assets. Lev is the financial leverage. BM is the book-to-market ratio. ROA is the return on assets. Age is the firm age. Largest is the shares held by the largest shareholder. Duality is an indicator that equals 1 if one person takes both the Chairman and the CEO position and 0 otherwise. Indep is the percentage of independent directors of all the board of directors. Panel C presents the regression results for the earnings response coefficient model. ERC is earnings response coefficient estimated from model (7). The robust t-value adjusted to heteroscedasticity is reported in parentheses. ***, **, and * denote coefficients that are statistically significant at the 1%, 5%, and 10% levels, respectively.

Panel A	(1)	(2)	(3)	(4)	(5)
	Persistence	Persistence	Persistence	Persistence	Persistence
DivRatio		1.673**		1.673**	
		(2.37)		(2.28)	
DivRatio * ER		-7.285***		-6.899***	
		(-10.55)		(-9.70)	
DivDummy			0.020***		0.067***
			(3.37)		(8.09)
DivDummy * ER			-0.270***		-0.251***
			(-20.24)		(-19.57)
ER	0.018	0.060***	0.163***	0.041	0.136***
	(0.90)	(2.67)	(8.26)	(1.59)	(6.30)
Size				0.032***	0.028***
				(3.86)	(2.74)
Lev				-0.025*	-0.003
				(-1.72)	(-0.25)
BM				0.009	0.014
				(0.38)	(0.62)
ROA				0.115***	0.079*
				(2.76)	(1.68)
Age				0.019***	0.018***
				(16.25)	(13.73)
Largest				0.038	0.041
				(1.39)	(1.59)
Duality				-0.050***	-0.050***
				(-2.90)	(-2.93)
Indep				-0.026***	-0.028***

				(-3.01)	(-3.11)
Constant	0.311***	0.292***	0.266***	-0.669***	-0.591***
	(8.13)	(7.53)	(6.87)	(-3.77)	(-2.91)
Industry	Controlled	Controlled	Controlled	Controlled	Controlled
Year	Controlled	Controlled	Controlled	Controlled	Controlled
adj. R^2	0.03	0.04	0.05	0.07	0.09
F	263.06	52.25	52.40	76.76	80.55
N	24874	24874	24874	24874	24874

Panel B	(1)	(2)	(3)	(4)	(5)	(6)
	AAQ	AQ	AAQ	AAQ	AQ	AQ
DivRatio			-0.688***		-0.701***	
			(-8.49)		(-4.95)	
DivRatio * ER			9.212***		4.292***	
			(26.76)		(16.82)	
DivDummy				-0.024***		-0.027***
				(-11.87)		(-7.31)
DivDummy * ER				0.188***		0.098***
				(28.90)		(18.34)
ER	0.001	-0.000	-0.051***	-0.099***	-0.025***	-0.052***
	(0.44)	(-0.09)	(-13.55)	(-18.45)	(-6.01)	(-10.66)
Size	-0.003***	-0.008***	-0.001	0.001	-0.006**	-0.003
	(-2.62)	(-3.22)	(-1.28)	(0.56)	(-2.40)	(-1.45)
Lev	0.056***	0.076***	0.044***	0.040***	0.068***	0.064***
	(9.30)	(6.93)	(9.47)	(8.22)	(6.65)	(6.20)
BM	-0.028***	-0.029***	-0.022***	-0.023***	-0.025***	-0.027***
	(-7.07)	(-4.15)	(-6.29)	(-6.44)	(-3.83)	(-4.13)
ROA	0.068***	0.097***	0.074***	0.082***	0.105***	0.122***
	(3.59)	(4.68)	(4.84)	(5.34)	(5.49)	(6.22)
Age	-0.000	0.001*	0.000***	0.001***	0.001**	0.001**
	(-0.98)	(1.90)	(2.74)	(5.94)	(2.30)	(2.50)
Largest	0.007	0.039***	0.010	0.008	0.040***	0.040***
	(1.11)	(2.79)	(1.64)	(1.24)	(2.96)	(2.97)
Duality	0.004	0.011*	0.001	0.002	0.010*	0.008
	(1.60)	(1.79)	(0.63)	(0.70)	(1.67)	(1.46)
Indep	-0.006***	-0.005	-0.005***	-0.004***	-0.005	-0.004

	(-4.68)	(-1.57)	(-4.28)	(-3.30)	(-1.57)	(-1.44)
Constant	0.111***	0.163***	0.076***	0.032*	0.125***	0.085**
	(5.45)	(3.73)	(4.32)	(1.73)	(2.90)	(2.00)
Industry	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Year	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
adj. R^2	0.19	0.35	0.38	0.41	0.38	0.39
F	72.77	40.42	92.31	99.40	44.01	47.46
N	19290	13011	19290	19290	13011	13011

Panel C	(1)	(2)	(3)	(4)	(5)
	ERC	ERC	ERC	ERC	ERC
DivRatio		0.772***		0.637***	
		(5.12)		(4.30)	
DivRatio * ER		-5.421***		-5.529***	
		(-21.98)		(-22.24)	
DivDummy			0.049***		0.015***
			(15.29)		(4.72)
DivDummy * ER			-0.130***		-0.149***
			(-27.20)		(-31.65)
ER	-0.024	0.007	0.043	0.012**	0.061***
	(-0.97)	(1.20)	(1.54)	(2.07)	(9.78)
Size				-0.011***	-0.012***
				(-6.40)	(-6.75)
Lev				-0.044***	-0.039***
				(-5.83)	(-5.18)
BM				-0.024***	-0.024***
				(-3.86)	(-3.82)
ROA				-0.088***	-0.080***
				(-3.83)	(-3.51)
Age				-0.016***	-0.017***
				(-46.61)	(-47.44)
Largest				-0.013	-0.011
				(-1.29)	(-1.09)
Duality				0.033***	0.033***
				(6.92)	(6.99)
Indep				-0.006***	-0.007***

				(-2.99)	(-3.38)
Constant	0.746***	0.733***	0.715***	0.686***	0.708***
	(48.00)	(47.07)	(45.65)	(20.91)	(21.38)
Industry	Controlled	Controlled	Controlled	Controlled	Controlled
Year	Controlled	Controlled	Controlled	Controlled	Controlled
adj. R^2	0.38	0.39	0.40	0.43	0.44
F	309.66	321.29	354.09	93.26	92.35
N	24874	24874	24874	24874	24874

Table 7 Equity refinancing, dividends, and earnings quality — Samples before 2001

This table presents the results on the effect of equity refinancing on the association between dividend payouts and earnings quality from models (9)–(11) with sample before 2001. DivRatio is the dividend yield with the dividend per share divided by the stock price. DivDummy is an indicator that equals 1 if firms pay cash dividends in year t and 0 otherwise. ER is an indicator that equals 1 if the firms conduct equity refinancing in year t and 0 otherwise. Persistence is estimated coefficients from model (2). AAQ is the absolute value of the regression residuals estimated using model (4). AQ is the five-year standard deviation of the regression residuals estimated using model (4). Size is the natural logarithm of the total assets. Lev is the financial leverage. BM is the book-to-market ratio. ROA is the return on assets. Age is the firm age. Duality is an indicator that equals 1 if one person takes both the Chairman and the CEO position and 0 otherwise. Indep is the percentage of independent directors of all the board of directors. ERC is earnings response coefficient estimated from model (7). The robust t-value adjusted to heteroscedasticity is reported in parentheses. ***, **, and * denote coefficients that are statistically significant at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	Persistence	Persistence	AAQ	AAQ	ERC	ERC
DivRatio	6.758***		-0.924***		5.907***	
	(6.35)		(-4.00)		(12.70)	
DivRatio*ER	-7.485		-0.189		-5.475	
	(-1.63)		(-0.36)		(-1.56)	
DivDummy		0.120***		-0.038***		0.076***
		(3.63)		(-5.90)		(8.35)
DivDummy*ER		-0.087		0.024		-0.089
		(-1.22)		(1.09)		(-0.65)
ER	0.054	0.053	0.005	-0.011	0.021	0.030
	(1.05)	(0.84)	(0.71)	(-1.05)	(1.63)	(0.91)
Size			-0.008*	-0.007		
			(-1.89)	(-1.59)		
Lev			0.086***	0.078***		
			(4.83)	(4.57)		
BM			0.008	-0.000		
			(0.28)	(-0.01)		
ROA			0.238***	0.288***		
			(5.23)	(5.99)		
Age			-0.003*	-0.002*		
			(-1.90)	(-1.94)		
Duality			0.006	0.001		
			(0.27)	(0.06)		
Indep			0.003	0.003		
			(1.04)	(0.88)		
Constant	0.200***	0.379**	0.209**	0.199**	0.144***	0.176***

	(7.65)	(2.27)	(2.44)	(2.37)	(4.58)	(5.00)
Industry	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Year	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
adj. R^2	0.02	0.03	0.10	0.13	0.20	0.05
F	10.13	5.06	8.97	7.14	10.07	5.66
N	1965	1966	897	897	1959	1960

Table 8 Ownership, dividends, and earnings quality

This table presents the results on the effect of equity refinancing on the association between dividend payouts and earnings quality from models (9)–(11). In all three panels, DivRatio is the dividend yield with the dividend per share divided by the stock price. DivDummy is an indicator that equals 1 if firms pay cash dividends in year t and 0 otherwise. State is an indicator that equals 1 if the firms' ultimate owners are central or local governments and 0 otherwise. Panel A presents the results for the earnings persistence model. Persistence is estimated coefficients from model (2). Panel B presents the results for the accrual quality model. AAQ is the absolute value of the regression residuals estimated using model (4). AQ is the five-year standard deviation of the regression residuals estimated using model (4). Size is the natural logarithm of the total assets. Lev is the financial leverage. BM is the book-to-market ratio. ROA is the return on assets. Age is the firm age. Largest is the shares held by the largest shareholder. Duality is an indicator that equals 1 if one person takes both the Chairman and the CEO position and 0 otherwise. Indep is the percentage of independent directors of all the board of directors. Panel C presents the regression results for the earnings response coefficient model. ERC is earnings response coefficient estimated from model (7). The robust t-value adjusted to heteroscedasticity is reported in parentheses. ***, **, and * denote coefficients that are statistically significant at the 1%, 5%, and 10% levels, respectively.

Panel A	(1)	(2)	(3)	(4)	(5)
	Persistence	Persistence	Persistence	Persistence	Persistence
DivRatio		5.805***		5.543***	
		(6.06)		(6.32)	
DivRatio * State		-7.467***		-7.233***	
		(-18.24)		(-17.54)	
DivDummy			0.150***		0.198***
			(16.95)		(17.88)
DivDummy * State			-0.255***		-0.273***
			(-19.19)		(-21.02)
State	0.103***	0.134***	0.216***	0.038***	0.117***
	(13.08)	(17.85)	(21.33)	(5.21)	(11.28)
Size				0.031***	0.028**
				(3.44)	(2.56)
Lev				-0.010	0.004
				(-0.66)	(0.31)
BM				0.008	0.024

				(0.31)	(1.07)
ROA				0.158***	0.100**
				(3.79)	(2.13)
Age				0.018***	0.021***
				(16.77)	(16.96)
Largest				0.054**	0.065***
				(2.04)	(2.60)
Duality				-0.049***	-0.054***
				(-2.96)	(-3.26)
Indep				-0.027***	-0.025***
				(-3.02)	(-2.74)
Constant	0.165***	0.136***	0.097***	-0.652***	-0.702***
	(6.02)	(4.87)	(3.54)	(-3.38)	(-3.21)
Industry	Controlled	Controlled	Controlled	Controlled	Controlled
Year	Controlled	Controlled	Controlled	Controlled	Controlled
adj. R^2	0.04	0.06	0.06	0.09	0.10
F	85.48	246.24	302.11	182.29	290.59
N	20497	20497	20497	20497	20497

Panel B	(1)	(2)	(3)	(4)	(5)	(6)
	AAQ	AQ	AAQ	AAQ	AQ	AQ
DivRatio			-3.216***		-2.297***	
			(-20.09)		(-12.17)	
DivRatio * State			4.679***		2.508***	
			(30.97)		(19.36)	
DivDummy				-0.071***		-0.057***
				(-18.15)		(-10.85)
DivDummy * State				0.103***		0.058***
				(22.91)		(12.04)
State	-0.013***	-0.020***	-0.035***	-0.057***	-0.031***	-0.043***
	(-3.61)	(-3.13)	(-14.17)	(-17.18)	(-6.62)	(-8.29)
Size	-0.002*	-0.006***	0.001	0.001	-0.003	-0.001
	(-1.67)	(-2.62)	(0.69)	(0.92)	(-1.21)	(-0.62)
Lev	0.054***	0.075***	0.038***	0.041***	0.066***	0.064***
	(9.17)	(6.81)	(7.35)	(7.36)	(6.39)	(5.99)
BM	-0.027***	-0.027***	-0.022***	-0.028***	-0.025***	-0.030***

	(-6.85)	(-3.94)	(-6.05)	(-7.34)	(-3.87)	(-4.46)
ROA	0.057***	0.085***	0.042***	0.071***	0.087***	0.113***
	(3.18)	(4.01)	(2.82)	(4.22)	(4.47)	(5.41)
Age	0.000	0.001**	0.001***	0.000	0.002***	0.001*
	(0.71)	(2.52)	(6.47)	(0.42)	(3.24)	(1.79)
Largest	0.015**	0.048***	0.005	0.006	0.044***	0.045***
	(2.25)	(3.27)	(0.77)	(0.90)	(3.11)	(3.10)
Duality	0.002	0.008	-0.001	0.002	0.005	0.006
	(0.81)	(1.28)	(-0.30)	(0.75)	(0.90)	(1.08)
Indep	-0.005***	-0.003	-0.004***	-0.005***	-0.003	-0.004
	(-3.88)	(-1.03)	(-3.32)	(-4.17)	(-1.12)	(-1.22)
Constant	0.096***	0.188***	0.041*	0.071***	0.120***	0.125***
	(4.47)	(4.08)	(1.94)	(3.30)	(2.65)	(2.78)
Industry	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Year	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
adj. R^2	0.19	0.36	0.42	0.28	0.40	0.38
F	70.97	41.84	96.69	73.50	45.38	46.54
N	19186	12939	19186	19186	12939	12939

Panel C	(1)	(2)	(3)	(4)	(5)
	ERC	ERC	ERC	ERC	ERC
DivRatio		3.867***		3.337***	
		(23.89)		(20.70)	
DivRatio * State		-4.870***		-5.127***	
		(-49.84)		(-51.16)	
DivDummy			0.148***		0.108***
			(36.72)		(26.27)
DivDummy * State			-0.199***		-0.189***
			(-49.12)		(-48.40)
State	-0.120***	-0.099***	-0.030***	-0.027***	0.028***
	(-7.34)	(-32.98)	(-9.84)	(-8.65)	(8.28)
Size				-0.010***	-0.011***
				(-6.26)	(-6.41)
Lev				-0.037***	-0.034***
				(-5.10)	(-4.79)
BM				-0.014**	-0.007

				(-2.34)	(-1.10)
ROA				-0.088***	-0.094***
				(-3.99)	(-4.25)
Age				-0.015***	-0.014***
				(-45.96)	(-41.20)
Largest				0.046***	0.054***
				(4.72)	(5.54)
Duality				0.024***	0.021***
				(5.44)	(4.85)
Indep				-0.004**	-0.003
				(-2.04)	(-1.39)
Constant	0.256***	0.239***	0.189***	0.645***	0.590***
	(23.73)	(22.32)	(17.21)	(19.71)	(18.12)
Industry	Controlled	Controlled	Controlled	Controlled	Controlled
Year	Controlled	Controlled	Controlled	Controlled	Controlled
adj. R^2	0.12	0.19	0.22	0.30	0.31
F	69.95	118.27	112.62	130.86	126.87
N	20497	20497	20497	20497	20497

Highlights

- We investigate the relationship between dividends and earnings quality.
- Dividends payment is associated with higher earnings quality.
- Factors distorting incentives to pay dividends reduce information contents of dividends.
- Equity refinancing and state ownership reduce information contents of dividends.