

Dividend Taxes and Payout Policy:
Evidence from Korea's 2015–2017 Dividend Tax Cut*

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November 26, 2017

Abstract

The Korean government temporarily lowered dividend tax rates for investors of firms that significantly increased dividend payments in 2015–2017. We empirically examine how this dividend tax cut affects the payout policy of Korean firms. First, the dividend growth of the qualifying firms is found to be economically significant. Their dividend-asset ratios increased by 25%; their excess dividends account for 15% of the total dividend payout in 2016. Second, the qualifying firms mainly use operating cash flow to finance additional dividend payments, rather than liquidate cash holdings or reduce share repurchases; the substitution effect between share repurchases and dividend payments is negligible. Third, the insider ownership is found to be an important factor in driving a continual enjoyment of the dividend tax cut. Lastly, a large proportion of firms temporarily takes advantage of the dividend tax cut only in 2015, which argues against slow adjustments in dividend payout policy.

Key Words: Dividend tax, Dividend, Payout, Share repurchases, Corporate behavior

JEL Classification: E62, H31

**The research of the second author, Young Lee, is financially supported by the research fund of Hanyang University (HY-2013).

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1. Introduction

In 2014, the Korean government introduced a temporary dividend tax cut that lasted three years, from 2015 through 2017. The tax bill reduced dividend income tax for “high-dividend-company,” which increases dividend payments above the criteria set by the government. By offering lower tax rates to this group of high dividend companies, this policy tried to stimulate dividend growth in Korean corporations.

This paper empirically examines the economic effects of Korea’s 2015–2017 dividend tax cut on corporate payout policy. In particular, we aim to answer the following questions: (1) Do the qualifying firms increase their dividend payouts as the policy intended?; (2) If so, do these firms increase dividend payments by reducing share repurchases or cash holdings?; and (3) What firm characteristics are important in the decision of taking advantage of the tax cut?

These questions address the implications for the tax reform, as well as the evaluation of the effectiveness of this tax cut. The first question directly asks whether the tax cut achieves its goal of increasing dividend payouts among Korean corporations as the tax cut intended. The second one is related to on-going debates about taxation on cash retention in Korea. In fact, another goal of the tax cut is to decrease retained earnings by encouraging dividend payments. This goal is achieved if the qualifying firms increase dividend payments by decreasing cash holdings. A careful examination of what firms are indeed responsive to this dividend tax cut can provide not only a test of the existing theory on dividend payments, but also the insight for designing the tax code.

The tax cut was announced in August 2014, and enacted as a sunset provision for 2015–2017. The Korean government decided not to extend this special tax code in August 2017, implying a temporary dividend tax cut. We use a sample of Korean firms listed in the KOSPI and KOSDAQ markets from 2015 to 2016 in order to empirically investigate the effect of this temporary dividend tax cut. The data come from the KIS-value database, which is the collection of financial statements of the listed firms in Korea.

Our main empirical findings are as follows. First, we find a significant dividend payment growth of the qualifying firms. For instance, the dividend-asset ratio of the qualifying firms increases by 0.4 percentage points on an annual basis. This value implies that the annual growth rate of the dividend-asset ratio is more than 25% for these qualifying firms. The average dividend payment growth rate is 48% for the qualifying firms as well. This quantitative significance remains intact even after considering all the remainder firms as a control group. We also show that excess dividend payments are substantial in the qualifying firms, which is defined as the excess amount of dividend above the level predicted by a firm’s historical dividend payout propensity. The excess dividends of the qualifying firms accounted for 14.2% of their total dividends in 2015, and 45.4%, in 2016. Furthermore, the excess dividends take

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account of 2.1% and 15.4% of aggregate dividends in 2015 and 2016, respectively.

Second, we find that current cash flow was a major financing source for additional dividend payments. Neither a reduction of share repurchases nor is a liquidation of cash holding widely used for financing source of dividend payment growth. Our binary choice model robustly shows the profitability of a firm as a key economic determinant in satisfying the dividend payout criteria set by the tax code. Based on this large cash flow generation, the qualifying firms are mostly shown to increase cash holdings. Liquidation of cash stock for dividend growth does not occur; accordingly, the policy objective of this tax cut appears to be partially accomplished. The qualifying firms make no significant changes in their share repurchases to asset ratio as well. In other words, this tax cut does not seem to substitute between two payout methods, share repurchases, and dividends; thus, it achieves overall payout growth as the policy intended. Cash flow in the current period almost exclusively finances the additional dividend payments.

Third, we find that a large number of firms enjoyed the tax cut only temporarily. Around a half of the qualifying firms in 2015 fail to meet the criteria in 2016. Their change in the dividend-asset ratio and dividend growth rate are even lower than those of the control group in 2016. Their excess dividends also become negative in 2016. This swift adjustment of dividend payments is not properly aligned with the slow adjustment of dividend payout policy widely accepted in the literature (Lintner 1956).

Finally, our empirical results suggest the insider shares as an important factor leading to a continual enjoyment of the tax cut. Unlike other groups that only temporarily took advantage of lower dividend tax rates, the firms that enjoy tax advantage both in 2015 and 2016 have a significantly larger proportion of inside shareholdings. Our binary choice models robustly confirm this tendency even after controlling for a set of firm characteristic variables. With such large shares, the insiders appear to receive substantial tax benefits from the dividend tax cut based on their actual control power in deciding the firm's dividend payout policy.

This paper contributes to extant literature in the following four aspects. First, we provide new empirical evidence supporting the effect of the dividend tax cut on payout policy. Our results suggest that the dividend tax cut from 2015 to 2017 induce the growth of dividend payouts in Korean corporations. This finding is precisely in line with the existing studies that confirm the significant role of dividend tax reforms in affecting corporate payout policies. The representative studies include Chetty and Saez (2005) for the United States, Alstadsæter and Jacob (2016) for Sweden, Pattenden and Twite (2008) for Australia, and Chan and Lin (2017) for Taiwan.

Moreover, we also have empirical evidence against the Lintner (1956) model of dividend payouts, which highlights the rigidity in dividend payout policy. A significant proportion of qualifying firms only temporarily enjoy tax benefits in 2015. Their dividend payout propensity and dividend payments

drop substantially in 2016. Such a temporal adjustment of dividend policy is not properly aligned with the rigidities in dividend policy. This finding is not in line with the signaling theory of dividend payments, which provides a theoretical background of gradual adjustment in dividend payout policy (Bhattacharya 1979; Miller and Rock 1985).

Our result also adds a new dimension to the literature emphasizing the role of agency frictions in shaping corporate dividend policy. Chetty and Saez (2005) provided cross-sectional evidence that dividend increases are positively related to the manager's shareholdings. Similarly, Blouin *et al.* (2004) documented the positive relationship between dividend increases and insider ownership. Brown *et al.* (2007) indicated that the managers with significant stock options, which are rarely protected by dividend changes, are reluctant to increase dividend payment after the dividend tax cut of 2003 in the US. As insider ownership enlarges, the benefits from lower dividend tax rates for insiders arise as well. Consistent with extant studies, we find a close relationship between insider shares and continual enjoy of tax benefits.

Our findings do not support the widely accepted substitution effect between dividend payments and share repurchases. For instance, Grullon and Michaely (2002) found that some of the increase in share repurchases in the 1980s and 1990s came at the expense of a reduction (or lack of increase) in dividend payments in the US. Brown *et al.* (2007) also confirmed that an increase in dividends was accompanied by a decrease in share repurchases in the dividend tax cut of 2003 in the US. We find no significant substitution effect between dividend and share repurchases during this dividend tax cut, which argues against these studies.

The rest of the paper is organized as follows. Section 2 documents Korea's 2015–2017 Dividend Tax Cut. Section 3 reviews literature on dividend taxes and corporate behaviors. Section 4 describes our sample and empirical methods. Regression results are in section 5. We conclude with summary and discussion.

2. Korea's 2015-2017 dividend tax cut

In 2014, the Korean government introduced a temporary dividend tax cut as a part of a tax reform package to boost household income. The package consists of three tax changes: lowering tax burden for larger dividend payments, lowering tax burden for higher wages, and raising tax burden for retained earnings. The tax cut was announced in August 2014, and applied for three years from 2015 to 2017 as a sunset provision. The Korean government decided not to renew this special dividend tax cut in August 2017, citing that the benefit of the dividend tax cut concentrated on high-income earners. Unlike dividend tax changes in other countries, Korea's 2015–2017 dividend tax cut was temporary, which

limits the scope and interpretation of research. However, it still allows us to pursue more interesting questions, such as whether a temporary dividend tax cut leads to a permanent dividend increase as predicted by signaling model.¹ This dividend tax cut provides an interesting opportunity to investigate the effect of a temporary dividend tax cut on payouts, financing, and investments.

Korea's 2015–2017 dividend tax cut lowers the withholding tax rate on dividend income earned on stocks held in listed corporations (from 14% to 9%) and allows financial income, which had been taxed at the progressive rate of personal income taxes, to be taxed separately and flat at a 25% rate. To qualify for this dividend tax cut, dividend payments should come from firms satisfying the criteria for “high-dividend-company.” There are two types of the criteria. “Type 1” is applied to listed stocks whose dividend payout ratios or dividend yields are more than 120% of the market average, and total dividend payouts increase by more than 10% from the previous year. “Type 2” is applied to listed stocks whose dividend payout ratios or dividend yields are more than 50% of the market average, and total dividend payouts increase by more than 30% compared to the previous year. Newly listed stocks and stocks with no previous dividend payouts are required to issue dividends larger than 130% of the market average (MOSF 2014 Revision to Tax Enforcement Decree).

3. Literature review

Changes in dividend taxes can affect various corporate behaviors, including payouts, financing, and investments. Since a dividend tax cut raises the after-tax return to shareholders, a dividend tax cut leads to higher equity prices (see, e.g., Auerbach and Hassett, 2006) and larger equity-financing. Twite (2001) provided evidence of an increase the level of external equity financing after the introduction in 1987 of dividend imputation system in Australia. If the marginal source of investment is external equity (e.g., Poterba and Summers 1985) due to constrained cash, dividend tax cut leads to a larger investment. Alstadsæter *et al.* (2017) found that cash-constrained firms increased investment after Sweden's 2006 dividend tax cut relative to cash-rich firms.

There are many extant studies on the effect of dividend taxes on payouts, the topic of this paper. The most studied country is the US. Chetty and Saez (2005) found that dividend payments and the number of firms paying dividends significantly increased after the US's 2003 dividend tax cut. Brown *et al.* (2007) argued the significant role of managerial stock option holdings in shaping heterogeneous

¹ We examine this question partially by investigating firms that take advantage of the tax cut only in 2015. In 2016, most of these firms turn out to be cash-constrained due to a low profit in 2016. To examine both not-cash-constrained firms and cash-constrained firms, we need the data of dividend payments of year 2018 and after. We leave this research question for future research.

effect on corporations from the dividend tax cut of 2003. There are many international studies that confirm the effect of dividend tax and dividend imputation system on dividend payments, including Alstadsæter and Jacob (2016) for Sweden, Pattenden and Twite (2008) for Australia, and Chan and Lin (2017) for Taiwan.

To examine the effect of dividend taxes on payouts carefully, we must control for determinants of corporate dividend policy. While the seminal work of Miller and Modigliani (1961) proposed their famous dividend irrelevance theory and Modigliani and Miller (1963) added a distortionary effect of corporate income taxes, their propositions may not explain why firms make large amounts of dividend payments, and why investment analysts and investors are so interested in dividend announcements. To reconcile this puzzling empirical regularity, a number of economic arguments have been proposed and tested. One strand of literature highlights the importance of asymmetric information between managers and shareholders (e.g., Bhattacharya 1979; Miller and Rock 1985), focusing on the signaling effect of dividend payments. This approach is based on Lintner's (1956) earlier observation on dividend policy, wherein he argued that managers aim to stabilize the dividend with a long-term target payout ratio. His survey results confirm that companies are indeed concerned about the stability of the dividends. Another strand of literature incorporates the lifecycle theory of a firm. In fact, DeAngelo *et al.* (2006) noted that the mix of earned versus contributed capital in a firm's equity capitalization is a key determinant of dividend policy. They found that larger dividend payments were made by mature firms whose equity capitalization was largely composed of their retained earnings. Agency conflict is also considered a critical determinant of corporate dividend policy. Easterbrook (1984) and Jensen (1986) highlighted the role of dividend payout as a device to reduce overinvestment by managers; by paying out large and steady dividends, a firm's free cash flow decreases significantly.

The extant studies also emphasize a significant role of insider share or managerial shares in the determination of dividend policy. For instance, Chetty and Saez (2005) provided cross-sectional evidence that dividend increases show a positive relationship with the managerial shareholdings. Blouin *et al.* (2004) also confirmed that dividend growths are positively related to insider ownership. Brown *et al.* (2007) documented that managerial stock options, rarely protected by dividend changes, appear to hinder increases in dividend payments from the dividend tax cut of 2003 in the US.

There are several papers that examine how tax policy changes affect the payout policy of Korean corporations. For instance, Hong and Ju (2006) examined how the introduction of the financial income composite taxation on net income influences the payout policy of Korean corporations. Hwang and Kim (2014) investigated the response of investors and dividend-paying firms to the 2012 tax amendment to lower the threshold of global taxation on financial income. The effect of the dividend tax cut 2015–2017 on corporate payout policy has not been examined in the literature so far.

4. Data and Empirical Model

This study examines the payout policy of firms listed in the KOSPI and KOSDAQ markets in 2015 and 2016. We use the KIS-Value database to obtain financial statements of the sample firms. We exclude financial and utility firms due to their distinctive regulatory environments, which may affect dividend payouts. To properly capture the life cycle aspect of the firms, we exclude the firm year-observations reporting negative earned equity in its financial statement. We winsorize each variable at a 1% level.

This paper adopts the following variables for the empirical analysis. First, we measure the growth of dividend payments by using the change in the dividend-asset ratios (ΔDV) and dividend growth rates (DVG). The dividend-asset ratio is defined as the ratio of cash dividends to the total book values of assets. The dividend growth rate is the percentage growth of cash dividends compared to the prior period. We also introduce change in the cash-asset ratio ($\Delta CASH$) to investigate whether the qualifying firms liquidate their cash holdings for dividend payments. The share repurchases to asset ratio is also included to examine the substitution effect between dividend payments and share repurchases.

To control for the potential effects of firm heterogeneity on dividend policy, we also construct the following firm characteristic variables. The first set of control variables reflects the investment, profitability, and growth opportunities for firms. The total asset growth (ΔTA) is calculated as the difference between current and prior period book value of asset divided by the prior period book value of the asset. Large investment reduces a firm's free cash flow, and potentially hinders dividend growths. The market to book asset ratio (M/B) captures the firm's growth opportunities. The market firm value is defined as the total assets minus the book value of equity plus the market value of equity. The sales growth rate (SALEG), defined as current period's sales minus the prior period's sales divided by the prior period's sales, also capture the firm's growth opportunities as well. The return on asset (ROA) is defined as the ratio of earnings before interest and tax to the total assets. The signaling theory (Bhattacharya, 1979) predicts a positive correlation of ROA with dividend payout propensity. We also consider the leverage ratio, which is defined as the sum of current and long-term debt divided by the total assets. A large leverage ratio implies a significant interest burden to the firm, which potentially reduces its dividend payments. Lastly, we control for the life cycle aspect of firms by introducing the retained earnings to total equity ratio (RE/TE). DeAngelo *et al.* (2006) showed a positive relationship between dividend payout propensity and the RE/TE ratio. They also emphasized the significant role of RE/TE ratio in the initiation of dividend payments.

Three types of corporate governance structure variables are included in our empirical examinations.

To reflect the importance of insider holdings, we incorporate the proportion of controlling shareholders holdings as an independent variable (*INSIDER*). To capture the potential effects of foreign shareholders on dividend payout decisions, we also include the proportion of foreign shareholders as another control variable (*FOREIGN*). The indicator variable, *LARGE*, has the value of one if the firm is included in the largest 30 Korean conglomerates. This group of large companies, “Chaebol,” is widely known to have different internal financing structure, which may affect dividend policy significantly.

Our empirical examination carefully utilizes the fact that there are several different subgroups of the qualifying firms. The variable, *HIGH*, indicates the entire sample of qualifying firms in 2015 and 2016. *HIGH1* and *HIGH2* represent, respectively, the sample firm-year observations satisfying the first (Type 1) and second (Type 2) criteria for the qualification of the dividend tax cut. We further construct *HH*, *HL*, and *LH* groups to indicate whether a firm took advantage of tax benefits in both years or in either year. The group of firms enjoying tax benefits in both years is categorized as the *HH* group. The group of firms using the tax cut only in 2015 (2016) are denoted as the *HL* (*LH*) group.

For the estimation of excess dividends, we employ a historical dividend payout propensity. Our dividend payout propensity is defined as the ratio of cash dividends to net income. We calculate the average of a firm’s dividend payout propensity from 2011 to 2013, and use it as the benchmark for the excess dividend calculations in 2015 and 2016. The constant growth of dividend propensity, 3%, is used to set another scenario.

To empirically examine the effect of the dividend tax cut on payouts, we use the following empirical models:

$$Y_{i,t} = \beta_0 + \beta_1 HIGHs_{i,t} + \gamma X'_{i,t} + \varepsilon_{i,t}, \quad (1)$$

where $Y_{i,t}$ is the variable that represents the payout policy of a firm, the variable *HIGHs* is the set of dummy variables indicating whether a firm-year observation is in the qualification group or not, and $X'_{i,t}$ are control variables. We use change in the dividend-asset ratios, the dividend growth rate, the change in the ratio of cash holdings to asset, the change in the ratio of repurchases to asset, and the share repurchases out of total payouts as the dependent variable. The construction of control variables is described above.

We employ a binary choice model to identify potential economic factors affecting the decision of enjoying the tax cut:

$$HIGHs_{i,t} = \text{logit}(\alpha_0 + \gamma X'_{i,t} + \varepsilon_{i,t}). \quad (2)$$

In addition to the control variables used in the estimation of equation (1), we include two additional variables as controls in the estimation of equation (2): lagged changes in the dividend-asset ratios to capture potential trend in dividend growth, and the retained earnings to total equity ratio to capture the life-cycle aspect of dividend payout policy.

5. Empirical Results

This section presents our empirical results. We start with descriptive statistics, then investigate changes in dividend payments, financing sources for dividend growths, and the choice of taking advantage of the tax cut. The last part of this section reports the results of the analysis using detailed categorization of firms depending whether a firm takes advantage of the tax cut both in 2015 and 2016 or either year.

5.1 Descriptive statistics

[Insert Table 1]

Table 1 provides the number of firms, the aggregated dividends (in billion won), and shares in the overall dividends for four subgroups of firms and for the year of 2015 and 2016, respectively. Table 1 indicates the significant role of qualifying firms in aggregate dividend payments. While the qualifying firms take only 9.1% to 10.4% of the entire sample, their contribution to aggregate dividends is 16.1% to 33.6% for the years 2015 and 2016, respectively. The role of the *HIGH2* group is particularly significant in 2016. The group pays out 24.1% of aggregate dividends, even though this group accounts for 6.7% of the entire sample. Such differences indicate that large corporations with substantial dividend payments took advantages of tax benefits in 2016 by satisfying the second qualification criterion.

[Insert Table 2]

Table 2 reports the summary statistics of the sample firms. The mean and standard deviation of each variable are reported. The variables of interest are the dividend-asset ratio (*DV*) and its change (ΔDV), dividend growth rate (*DVG*), operating income to asset ratio (*ROA*), market to book ratio (*M/B*), change in total assets (ΔTA), book leverage (*LEVERAGE*), sales growth (*SALES*), cash to asset ratio (*CASH*) and its change ($\Delta CASH$), conglomerates indicator (*LARGE*), foreign shareholdings (*FOREIGN*), and insider holdings (*INSIDER*). Table 2 shows that the dividend growth is significantly higher in the qualifying firms. For instance, the dividend-asset ratio increase by 0.38 percentage points for the qualifying firms, while the ratio shows no significant growth in the entire sample. This value implies 25% of annual growth rate in the dividend-asset ratio for the qualifying firms, considering their average dividend-asset ratio, 1.88%. We find that *HIGH2* subgroup has a more rapid increase in the dividend-asset ratios than *HIGH1* groups. This rapidly increasing pattern about actual dividend payments and dividend-asset ratios is in line with the design of qualifications for this dividend tax cut.

Regarding financing condition, these qualifying firms have larger current cash flows, lower leverage ratios, and larger cash holdings. The average *ROA* of the qualifying firms is 9.4%, which is four times greater than that of the entire sample. The average leverage ratio is around 20% smaller, and the average

cash ratio is around 18% larger for the qualifying firms, compared to the corresponding values in the entire sample. The *HIGH1* subgroup appears to have a more stable financing condition; that is, lower ROAs, leverage, and asset growth, than the *HIGH2* subgroup.

One noticeable feature is related to the change in cash holding variable (ΔCASH). Table 2 shows that the qualifying firms increase their cash holdings instead. The change in cash holding ratio is 1.9% on average for the qualifying firms. This value is almost four times larger than the corresponding value for the entire sample—0.5%. While increasing dividend payments, the qualifying firms appear to accumulate cash from large internal cash flow generation.

5.2 Changes in Dividend Payments

[Insert Table 3]

We now conduct regression analysis of firm-level dividend payment variations. Table 3 examines the relationship between the *HIGH* group dummy variables and the change in dividend asset ratios. Columns (1) through (4) use the sample of all firms, and columns (5) and (6) use the subsample of the dividend-paying firms. Columns (1) and (2) report the regressions results without control variables, and others report those with control variables.

Table 3 shows that the *HIGH* group firms increase their dividend payments substantially as the summary statistics indicated. The *HIGH* group increases their the dividend-asset ratios by 0.4 percentage point annually compared to the control group. This value is economically significant as well; the average the dividend-asset ratio of the high group is 1.88%, and an increase of 0.4 percentage points imply 25% of annual growth rate for the dividend asset ratio. This finding remains quantitatively unchanged when we examine the *HIGH1* and *HIGH2* group separately, and account for other firm characteristic variables. This finding is robust as well, even if we limit the sample of dividend-paying firms. The *HIGH*, *HIGH1*, and *HIGH2* variables have statistically significant and positive correlations with the change in the dividend-asset ratios, though the estimated coefficients become smaller in columns (5) and (6).

[Insert Table 4]

Table 4 investigates how the *HIGH* group dummy variables are related to dividend policy change by adopting the dividend payment growth rate as the dependent variable. As in Table 3, columns (1) and (2) exclusively examine the significance of *HIGH* and *HIGH1/HIGH2* groups in dividend payment growths. The rest of columns contain the regression results with control for other firm-level variables. We restrict the sample of dividend-paying firms in the columns (5) and (6).

Table 4 confirms significantly large dividend payments growth in the *HIGH* group firms. The

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estimated coefficient in column (1) implies 45 percentage points higher dividend growth rate for the HIGH group of firms, compared to the remainder firms. With regard to the *HIGH1/HIGH2* subgroup categorization, we observe significantly large dividend growth rates—by more than 50 percentage points for the *HIGH2* group firms. Considering the required dividend growth rate for the qualification is 10%/30% for the first and second criterion, both the *HIGH1* and the *HIGH2* groups have actual dividend growth rates larger than the required ones by more than 20 percentage points. The inclusion of control variables does not change the quantitative results. The *HIGH*, *HIGH1*, and *HIGH2* variables remain significant as well in the analysis of dividend-paying firms (columns [5] and [6]), though the estimated coefficients become slightly smaller.

While Tables 3 and 4 confirm substantial dividend payment growths of the qualifying firms, these large growths could be a byproduct of increasing profits, given the same dividend payout propensity. To control for a different trajectory of dividend growth, which is not explained by the firm characteristic variables, we calculate “excess dividends” for each group of firm in Table 5. The excess dividends are calculated based on the level of historical dividend payout propensity, which is defined as the ratio of cash dividends to net income. In scenario A, we assume that firms maintain their dividend payout propensity level at the three-year average value from 2011 to 2013. This scenario is based on the presumption that dividend payout propensity is stable over time because dividend policy tends to be adjusted only slowly. In scenario B, the dividend payout propensity is assumed to increase by 3% for each year. The table reports the average of assumed payout propensity, aggregate excess dividend, the ratio of aggregate excess dividends to actual dividends, and the ratio of aggregate excess dividends to total cash dividends in the given year, respectively, for the four groups of firms- the *HIGH*, *HIGH1*, *HIGH2* and the control group, and *OTHERS*.

[Insert Table 5]

Table 5 indicates that the qualifying firms pay out a significant amount of the excess dividends. For instance, the excess dividends for all the qualifying firms account for 14.2% of their actual dividends in 2015, with no changes in dividend payout propensity. The ratio even grows sharply to 45.7% in 2016. Even if we apply an annual 3% growth rate for the dividend payout propensity, the excess dividends explain a significant proportion of the qualifying firms’ actual dividend payout as well. Such an increase is due to the entrance of the firms with significant excess dividend payments in 2015 into the *HIGH* group in 2016. In fact, the excess to actual dividends ratio in the *OTHERS* group decreases by 66% during the sample periods (from 23.9% to 7.7%).

Noticeably, these excess dividends account for a substantial proportion of aggregate cash dividend paid out from Korean corporations, especially in 2016. For instance, the excess dividend to total aggregate dividend ratio is 15.4% in 2016 with no change in dividend payout propensity growth. If we

apply a 3% growth rate for the dividend payout propensity, the excess dividends explain 13.7% of the aggregate dividend paid out in 2016.²

The table also shows that the group of *HIGH2* firm pays a larger amount of excess dividends. In Scenario A, the excess dividends of the *HIGH2* group take account of 12.0% of actual dividends in 2015. In 2016, this value even surges to 54.8%; the excess dividends are more than a half of actual dividends in the *HIGH2* group. This result is sufficiently aligned with the second criterion for the tax cut, which requires substantial dividend payments growth, but lower dividend payout propensity on average. By increasing dividend payment substantially in a specific year, the dividend payout propensity in the year becomes far above its historical level. Accordingly, the excess dividend payments tend to be significantly large for the *HIGH2* group.

Tables 3, 4, and 5 suggest that the tax cut generates strong incentives to increase dividend payments. The qualifying firms show large increases in their dividend-asset ratio and dividend growth rate even after controlling for other firm characteristic variables. Their excess dividend payments are quantitatively significant even relative to the total amount of dividend paid. These findings point to the significant dividend payment growth resulting from this dividend tax cut. These findings are also in line with extant literature that verifies a significant role of the dividend tax cut on a firm's payout policy (Chetty and Saez, 2005; Alstadsæter and Jacob, 2016; Pattenden and Twite, 2008; Chan and Lin, 2017).

5.3 Financing Sources for Dividend Growths

We turn to identify the financing sources for the dividend growths. For this purpose, we first investigate the substitution effect between dividends payments and share repurchases. As several prior studies have argued (e.g., Chetty and Saez 2005), firms may respond to new government policy encouraging dividend payout by keeping the total payouts with larger dividend payments and smaller share repurchases. If this substitution between dividend payments and share repurchases dominates, the net effect of the dividend tax cut on total payout becomes less significant compared to our quantitative results from Tables 3–5.

[Insert Table 6]

Tables 6 and 7 analyze how the qualifying firms change their share repurchases decisions. The change in share repurchases to asset ratio ($\Delta\text{Repurchases}$) and the change in share repurchases to total payout ratio ($\Delta\text{Repurchases}/\text{Payout}$) are used as the dependent variable. The significance of *HIGH*

² The entrance of large size firms drives the significant increase of excess dividends in 2016. A detailed analysis is conducted later in this section.

group dummy variables is examined with or without firm characteristic variables. We also restrict the sample of dividend-paying firms in the last two columns. The tables report the estimated coefficients and corresponding t-values (in parenthesis).

In Table 6, the estimated coefficients of the *HIGH* group dummy variables are statistically insignificant and even show positive signs. Both of these coefficients are not properly aligned with the substitution hypothesis that predicts a smaller amount of share repurchase in the presence of substantial dividend payment growths. The inclusion of other firm characteristic variables and the exclusion of non-dividend paying firms do not alter quantitative results significantly.

[Insert Table 7]

The estimation results in Table 7 do not support the substitution hypothesis either. In fact, the changes in the share repurchases to the total payout ratio do not show any significant correlation with the set of *HIGH* group dummy variables. This conclusion is robust to the consideration of firm characteristic variables and the exclusion of non-dividend paying firms. The qualifying firms appear to make no substantial changes in the relative composition between share repurchases and dividend payments.

Such a weak substitution effect might be closely related to the minor role of share repurchases as a payout method in Korean corporations. Korean firms do not widely adopt share repurchases as their payout tool. For instance, the share repurchases to asset ratio is only 0.3% on average, and the share of repurchases in the total payout is around 12% on average, which also points to the infrequent use of share repurchases across Korean corporations. Due to such an insignificant role of share repurchases in a Korean firm's policy, these qualifying firms may leave their share repurchases policy intact, and seek other financing sources to support dividend growth. This weak substitution effect is not properly aligned with the extant studies arguing for the substitution between dividends and share repurchases (Grullon and Michaely, 2002; Brown *et al.*, 2007).

Next, we examine whether the qualifying firms liquidate their cash holdings to fund dividend growth. This examination is closely associated with the goal of this dividend tax cut. Korean firms accumulated massive cash stocks after the Asian crisis of 1997. In fact, there has been an on-going public debate on the introduction of retention tax on excess cash holdings in Korea. By lowering dividend taxes, the Korean government tried to provide incentives to liquidate the excess cash holdings to shareholders in the form of dividend payments.

[Insert Table 8]

Table 8 reports the regression results for the change in cash holding. We adopt the ratio of cash to the total assets as a representative measure of cash holdings. The first two columns report the regression results without firm characteristic variables, and the remaining columns document the regression results with these control variables. In the last two columns, we exclude non-dividend paying firms in the

regression models. The estimated coefficients and t-values (in parenthesis) are reported.

In Table 8, the *HIGH* group dummy variables are positively associated with the changes in cash holdings, especially for the group of firms satisfying the second criterion. The coefficients on the *HIGH* group are 1.233 and 1.536, respectively, for our empirical models with/without the firm characteristic variables, both being statistically significant at the 99% level. When we separately analyze the *HIGH1* and *HIGH2* groups, the coefficients of the *HIGH2* group are statistically significant and positive. The coefficients on the *HIGH1* variable shows positive signs, though not significant; restricting to the subsample of the dividend-paying firms does not change results qualitatively.

This finding indicates that the qualifying firms do not liquidate cash holdings to finance dividend payment growth. In all empirical models, the coefficients on the qualifying firm dummy variables are positive, and most of them are statistically significant. In other words, these qualifying firms tend to accumulate cash stock, while raising dividend payment rapidly. Considering superior ROAs observed in the qualifying firms, the accumulation of cash stock is not incompatible with significant dividend payment growth. By using current cash flow generation as a source, these firms are stockpiling cash at the same time, while increasing dividend payments.

5.4 Choice of Taking Advantage of the Tax Cut

We now characterize the economic determinants related to the decision of enjoying the dividend tax cut. For this purpose, we estimate the logit model of binary choices using equation (2). Three types of binary choices are analyzed. The first one is related to the choice of becoming a qualifying firm. The lagged dividends-asset ratio (L.DV) is controlled to reflect the slow adjustment of dividend payout policy. The second and third ones are associated with the choice of satisfying the first (Type 1) and second criteria (Type 2) of this dividend tax cut. The subsample of the dividend-paying firms are analyzed in the last two columns.

[Insert Table 9]

Table 9 shows that the ROA is a key economic determinant of satisfying the criteria. For all six empirical models examined here, the ROA shows a positive and statistically significant association with the dependent variable. Such a large cash flow generation supports the significant growth in dividend payments; these firms, in fact, increase cash holdings, as well as dividend payments, as shown in Table 8. Table 9 also shows that the insider share has a positive and statistically significant correlation in becoming the qualified firm, especially by satisfying the first criterion. Columns (1) and (2) show positively significant coefficient on the insider shares in contrast to column (3). When we exclude non-dividend paying firms in the analysis, the insider share is estimated to have a statistically positive coefficient in the decision of becoming *HIGH1* group. This finding is generally in line with extant

literature that emphasizes the role of insiders in deciding dividend payout policy (Chetty and Saez, 2005; Blouin et al., 2004; Brown et al., 2007).³

5.5 Analysis using detailed categorization of firms

In this section, we utilize the categorization of firms depending on whether a firm takes advantage of the tax cut in both years or either year. Since our sample covers two years—2015 and 2016—we construct HH, HL, and LH groups to indicate whether a firm takes advantage of the tax cut in both years or either year. The group of firms that enjoy the tax cut in both years is categorized as the HH group. The group of firms that qualified for the tax benefits only in 2015 (2016) is denoted as the HL (LH) group.

This categorization helps us to address a couple of interesting questions. First, it allows us to test whether a firm's dividend policy shows rigidities; if the proportion of the HL group is economically significant and its dividend policy change significantly from 2015 to 2016, we can conclude that this group of firms only temporarily changes their dividend policy to take advantage of lower dividend tax rates. Moreover, this group construction allows us to examine firm characteristics associated with continually enjoying tax benefits compared to only temporarily taking advantages of tax benefits.

[Insert Table 10]

Table 10 summarizes the firm characteristics and excess dividends of the HH, HL, and LH groups. Panel A reports the number of firms included in each category of firms. It also documents the mean of the dividends to asset ratio (DV), operating income to asset ratio (ROA), the cash-asset ratio (CASH), leverage ratio (LEVERAGE), and asset size (Size) for 2015 and 2016. Panel B documents the aggregate excess dividends for the HH, HL, and LH groups. As in Table 4, the excess dividends are estimated based on the historical dividend payout propensity, which is defined as the ratio between cash dividends and net income. We only consider the benchmark case of zero dividend propensity growth. The average of assumed dividend payout propensity and excess dividends to total dividends ratios are also documented.

Panel A shows that a large fraction of firms enjoy tax advantage only temporarily. More than 50% of qualifying firms in 2015 are identified as the HL group, and do not take advantage of tax benefits in 2016. Furthermore, more than 100 new firms receive tax benefits in 2016. Only 60 companies are qualified for the dividend tax cut in both years.

The change in dividend policy of the HL group is particularly interesting. This group of firms decreased their dividend asset ratio significantly to 1.3 in 2016 after enjoying the tax benefits in 2015

³ The implication of insider shares is further analyzed in the next section.

with the average dividend asset ratio 1.6. In other words, this group of firms temporarily increase dividend payments in 2015, and does not seem to maintain the level of dividends in 2016. Such a temporal adjustment is not properly aligned with extant literature that emphasizes the slow adjustment policy (Lintner 1956) and the importance of signaling components in dividend payout decisions (Bhattacharya 1979; Miller and Rock 1985). To enjoy the low dividend tax rate, this group of firms increases their dividend payments without paying attention to the signaling role of dividend payments.

The panel also indicates that the HH group firms are financially solid, and make substantial dividend payments. They have lower leverage, higher profitability, and larger cash holdings, all of which point to the financial healthiness of these firms. For instance, the average leverage ratio for this group of the firms is lower than that of all other groups, and their ROA has always been the largest among the three groups in both years of sample periods. The average dividend-asset ratio is 2.1 (2.5) for the HH group, which is far higher than the other groups of firms.

Panel A also shows that relatively large size firms take advantage of tax benefits in 2016. The average asset size of LH group is 2.9, which is far above the corresponding asset size of other groups. This finding is directly connected with the quantitative significance of the qualifying firms' dividend payments in the total dividend payouts. In 2016, the dividend payments in the qualifying firms explain more than 33% of the aggregate dividend payment of Korean corporations (Table 1), which is more than two times larger than the corresponding value in 2015—16.1%. This group of large firms became qualified in 2016, and sharply raise the contribution of dividend payments in the qualifying firms to the overall dividend payouts.

Panel B confirms that firms in the HL group indeed decrease their dividend payments even in terms of excess dividends. We assume no growth in dividend payout propensity in the calculation of excess dividends. This group pays dividends 4% less than the expected level in 2016, while it makes significantly large dividend payments than its expected level in 2015 (>13%). Even after controlling for dividend payout propensity, the HL group firms significantly reduce their dividend payments in 2016. Such a drop in excess dividends supports the temporal changes in dividend policy of the HL group in response to the tax incentives.

[Insert Table 11]

Table 11 reports the results of regression analysis with the dummy variables indicating HH, HL, and LH groups. Three different sample periods are considered: the first with all the observation in 2015 and 2016; the second with the observations in 2015; and finally, with the observations in 2016. We adopt two different measures of dividend payout, dividend to asset ratio and dividend growth rate, in line with Tables 3 and 4.

Table 11 shows that the HL group indeed experiences negative dividend payment growth in 2016,

while the overall dividend growth is slightly positive during 2015–2016. This negative correlation in 2016 is statistically significant at the 99% level. Even when we adopt the dividend growth rates that measures the absolute change in dividend payments, the correlation is still negative and statistically significant in 2016. This result suggests that the HL group temporarily increased dividend payments in response to the tax incentive offered in 2015. The regression using the dividend growth rate tells us that the HL group firms decreased dividend payments by around 12% in 2016. Based on a large cash flow generation in 2015, these firms raised dividend significantly in 2015. The drop in cash flow generation in 2016 appears to drive a significant cut in dividend payments in 2016.

It is noteworthy that the dividend payment growth of the LH group is not statistically significant in 2015. The change in the dividend asset ratio shows a weakly negative correlation with the LH dummy variable. The coefficient on the LH group dummy is slightly positive in the regressions of dividend growth rate, but is still statistically insignificant. The LH firms increased dividend payments substantially in 2016 in response to the substantial growth in their cash flow generations.

[Insert Table 12]

We now examine whether the firm characteristics are different among the groups that enjoy tax advantage continually/temporarily. We conduct logit analysis to examine the firm characteristics in the decision of becoming the HH, HL or LL group. We use two samples: the entire sample in columns (1) through (3) and the subsample of the dividend-paying firms in columns (4) through (6). The estimated coefficients and z-values are reported for a set of firm characteristic variables.

Table 12 shows that the role of insiders is very important in the continual enjoyment of dividend tax benefits. Unlike the empirical model examining the HL or LH group, the insider shares show a statistically significant and positive correlation with the probability of becoming the HH group. The first logit analysis for the entire sample shows that INSIDER is a key determinant of keeping the qualification for the tax cut; in other words, becoming the HH group in our sample. The coefficients on INSIDER are not statistically significant for the next two empirical models, which examine the likelihood of becoming the HL and LH groups, respectively. This finding is robust, even though we limit the sample of dividend-paying firms in the next three empirical models. The insider shares are statistically significant only in case of becoming the HH group.

Such an importance of insider shares in shaping corporate dividend policy is in line with extant studies that highlight the significance of insider shares in shaping corporate dividend payout policies. For example, Chetty and Saez (2005) provided cross-sectional evidence that dividend increases are positively related to the manager's shareholdings during the dividend tax cut of 2003 in the US. Brown *et al.* (2007) indicated that the managers with significant stock options, which are rarely protected by dividend changes, are reluctant to increase dividend payment in response to the US dividend tax cut

2003.

In sum, our empirical analysis in this section confirms a temporal variation of dividend payout policy in response to the dividend tax cut, which argues against slow adjustment of dividend payout policies (Lintner 1956). Moreover, we confirm the significance of insider shares in continual enjoyment of tax advantage consistent with the extant studies emphasizing the role of agency conflicts in shaping corporate dividend policy.

6. Conclusion and Discussion

This paper examines the economic effect of the Korean dividend tax cut in 2015–2017. This policy aimed to stimulate dividend growth in Korean corporations by cutting dividend income tax rates. The tax code reduced dividend income tax for “high-dividend-company,” which pays a substantial amount of dividends above the criteria set by the government.

This paper empirically investigates the effect of the Korean dividend tax cut on corporate dividend policy. For this purpose, we selected the sample firms listed in the KOSPI and KOSDAQ markets. Then, we conducted a variety of empirical analyses at the individual firm and aggregate levels. The empirical estimation is implemented in the fiscal year of 2015 and 2016, when the dividend tax cut was effective.

We first verified the quantitatively significant effect of dividend cut on corporate dividend policies. The qualifying firms indeed increase dividend substantially; their the dividend-asset ratio grows by 0.4 percentage points, larger than that of the control group. The dividend payment growth rate is 40% greater than that of the control group as well. The excess dividends of the qualifying firms account for 45.7% of their actual one in 2016. The excess dividends explain 15.4% of the aggregate dividend in 2016 as well. All of the results suggest that this dividend tax cut provides strong incentive to increase dividend payments.

Next, we confirm that the qualifying firms mainly rely on current cash flow to increase dividend payments. Neither accumulated cash holdings nor the reduction of share repurchases is used to finance the dividend payment growth in the qualifying firms. This dividend tax cut does not lead to the liquidation of excess cash holdings to pay out dividends. The substitution effect between share repurchases and dividend payments also turned out to be negligible. These firms increase dividend payments substantially from a large cash flow generation, but leave other financing sources untouched.

Furthermore, we found that the ownership of insiders is a key economic determinant leading to the continual enjoy of tax advantage. Our binary choice models robustly confirm that the amount of insider share increases the likelihood of enjoying this dividend tax cut consecutively in 2015 and 2016. The insider shares do not have a significant relationship with the likelihood of becoming the groups that

temporarily take advantage of the dividend tax cut either 2015 or 2016.

Finally, we confirmed that a significant proportion of firms temporarily enjoy the tax cut. Less than half of the qualifying firms in 2015 took advantage of the tax cut again in 2016. The other qualifying firms, in fact, decrease their dividend payments in 2016 after taking advantage of lower dividend tax only temporarily in 2015. Their estimated excess dividends, which takes account of net income generation, are negative as well in 2016.

Our findings contribute to the literature in a number of aspects. Most of all, we confirm the significant effect of the dividend tax cut on corporate dividend policies. This finding adds new evidence highlighting the effect of the dividend tax cut on corporate payout policy. While this tax cut significantly affects corporate dividend payments, our result implies that the share repurchases policy of Korean corporations remains intact under this dividend tax cut. This result does not properly align with extant literature that highlights the substitution effect between share repurchases and dividend payments (e.g., Grullon and Michaely, 2002; Brown *et al.*, 2007).

Our finding of the importance of insiders in the continual enjoy of tax benefits is in line with literature that highlights the role of insiders in shaping corporate dividend policy (e.g., Chetty and Saez 2005; Brown *et al.* 2007). However, our findings of a rather swift adjustment of dividend payout policy in response to this dividend tax cut are not properly aligned with the Lintner (1956) model of dividend payments, as well as the signaling theory of dividend payout (Bhattacharya 1979; Miller and Rock 1985).

While our study provides a number of interesting results, our work is not able to identify a causal relationship between the dividend tax cut and the variation of corporate payout policy. This is mainly due to the structure of the dividend tax cut. The decision of enjoying tax advantage is definitely an endogenous choice of the CEOs. Accordingly, it is not a simple task to disentangle the causal effect of the dividend tax cut on corporate payout policies. This endogeneity issue is left for future studies.

APPENDIX

ENFORCEMENT DECREE OF THE RESTRICTION OF SPECIAL TAXATION ACT

Article 104-24 (Special Taxation on Dividend Income from Stocks of High Dividend Companies) (1) "Corporations prescribed by Presidential Decree, (~omitted~) giving due consideration to the dividend payout ratio, the dividend yield ratio, the growth rate of total dividends, etc., among listed-stock corporations under the Financial Investment Services and Capital Markets Act" in Article 104-27 (1) of the Act means any of the following corporations (hereafter referred to as "listed-stock corporations" in this Article) whose stocks are listed pursuant to the Financial Investment Services and Capital Markets Act (excluding any investment company defined under Article 9 (18) 2 of the Financial Investment Services and Capital Markets Act, ship investment company established under the Ship Investment Company Act, corporate restructuring investment company established under the Corporate Restructuring Investment Companies Act, and real estate investment company established under the Real Estate Investment Company Act; hereafter referred to as "high dividend company" in this Article):

1. A corporations in whose case the dividend payout ratio and the dividend yield ratio are at least 120/100 of the average dividend payout ratio, and the average dividend yield ratio publicly notified respectively under paragraph (7) and the growth rate of total dividends is at least 10/100;

2. A corporations in whose case the dividend payout ratio and the dividend yield ratio are at least 50/100 of the average dividend payout ratio, and the average dividend yield ratio publicly notified respectively under paragraph (7) and the growth rate of total dividends is at least 30/100;

(2) The dividend payout ratio, the dividend yield ratio, and the growth rate of total dividends shall be calculated by the following formulas, respectively. If the dividend payout ratio calculated by the formula under subparagraph 1 is negative or at least ten times the average dividend payout ratio publicly notified under paragraph (7), the ratio shall be deemed zero:

1. The dividend payout ratio:

$$\frac{\text{Dividends for the relevant business year} + \text{Dividends for the immediately preceding business year} + \text{Dividends for the second immediately preceding business year}}{\text{Net profit for the relevant business year} + \text{Net profit for the immediately preceding business year} + \text{Net profit for the second immediately preceding business year}}$$

2. The dividend yield ratio:

$$\frac{\{(\text{Dividend per share for the relevant business year} / \text{Stock price for the relevant business year}) + ((\text{Dividend per share for the immediately preceding business year} / \text{Stock price for the immediately preceding business year}) + (\text{Dividend per share for the second immediately preceding business year} / \text{Stock price for the second immediately preceding business year}))\}}{3}$$

Dividend Tax Cut and Payout Policy

3. The growth rate of total dividends: Either of the following formulas:

(a) Where the dividend for the preceding business year is greater than the average dividend for the immediately preceding three business years:

$$\frac{\text{Dividends for the relevant business year} - \text{Dividends for the immediately preceding business year}}{\text{Dividends for the immediately preceding business year}}$$

(b) Where the dividend for the immediately preceding business year is less than the average dividend for the immediately preceding three business years:

$$\frac{\text{Dividends for the relevant business year} - \text{Dividends for the immediately preceding three business years}}{\text{Dividends for the immediately preceding three business years}}$$

(3) Notwithstanding paragraphs (1) and (2), a corporations newly listed on the securities market under the Financial Investment Services and Capital Markets Act (hereafter referred to as "securities market" in this Article) or a corporations that has not paid dividends for the immediately preceding three business years (hereafter referred to as "newly listed corporations, etc." in this Article) shall be deemed a high dividend company, only if it meets all the following requirements:

1. The dividend payout ratio of a newly listed corporations, etc., as calculated by the following formula, shall be at least 130/100 of the average dividend payout ratio publicly notified under paragraph (7) (if the dividend payout ratio is negative or at least ten times the average dividend payout ratio publicly notified under paragraph (7), it shall be deemed zero):

$$\frac{\text{Dividend for the relevant business year}}{\text{Net profit for the relevant business year}}$$

2. The dividend payout ratio of a newly listed corporations, etc., as calculated by the following formula, shall be at least 130/100 of the average dividend payout ratio publicly notified under paragraph (7):

$$\frac{\text{Dividend per share for the relevant business year}}{\text{Stock price for the relevant business year}}$$

(4) Notwithstanding paragraphs (1) through (3), the standards for determining whether corporations in which case four business years have not passed since it was newly listed on the securities market is a high dividend company shall be prescribed by Ordinance of the Ministry of Strategy and Finance.

(5) The dividends referred to in the formulas prescribed in paragraph (2) 1 and 3 and (3) 1 mean the dividends of a listed-stock corporations, which are the sum of dividends paid in cash, out of interim dividends under Article 462-3 of the Commercial Act (hereafter referred to as "interim dividends" in this Article), quarterly dividends under Article 165-12 of the Financial Investment Services and Capital Markets Act (hereafter referred to as "quarterly dividends" in this Article), and dividends paid after the end of each business year by appropriating retained earnings (hereafter referred to as "year-end dividends" in this Article), while the dividends per share referred to in the formulas prescribed in paragraphs (2) 2 and (3) 2, mean the dividends of a listed-stock

corporations, which are the dividends paid in cash for each common share of stock in the manner prescribed by Ordinance of the Ministry of Strategy and Finance (including interim dividends, quarterly dividends, and year-end dividends).

(6) The standards for computing net profit, stock prices, etc. referred to in the formulas prescribed in paragraphs (2) 1 and 2 and (3) 1 and (2) shall be prescribed by Ordinance of the Ministry of Strategy and Finance.

(7) The Korea Exchange that is deemed to have obtained permission for stock exchange under Article 15 (1) of the Addenda to the Financial Investment Services and Capital Markets Act as partially amended by Act No. 11845, shall publicly notify the average dividend payout ratio in the market and the average dividend yield ratio in the market respectively, as calculated by the formulas prescribed by Ordinance of the Ministry of Strategy and Finance, for each of the following markets, by no later than September 30 each year, as prescribed by Ordinance of the Ministry of Strategy and Finance:

1. The KONEX defined under Article 11 (2) of the Enforcement Decree of the Financial Investment Services and Capital Markets Act;

2. The securities market defined under Article 176-9 (1) of the Enforcement Decree of the Financial Investment Services and Capital Markets Act;

3. The KOSDAQ defined under Article 8 of the Addenda to the Enforcement Decree of the Financial Investment Services and Capital Markets Act as partially amended by Presidential Decree No. 24697.

(8) "Dividend income prescribed by Presidential Decree" in Article 104-27 (1) of the Act means the dividend income paid in cash, out of the year-end dividend distributed by the relevant high dividend company for a business year.

(9) "Period prescribed by Presidential Decree for withholding dividend income" in Article 104-27 (3) of the Act means 20 days after the day the relevant high dividend company passes a resolution to appropriate retained earnings after the end of a business year.

(10) If stocks of a high dividend company are not deposited in an investment trader defined under Article 8 (2) of the Financial Investment Services and Capital Markets Act (hereafter referred to as "investment trader" in this Article) or an investment broker defined under Article 8 (3) of the same Act (hereafter referred to as "investment broker" in this Article), the high dividend company shall separate the income referred to in Article 104-27 (1) of the Act from the income referred to in Article 104-27 (2) of the Act, and shall withhold the tax on the income directly or through the corporations's transfer agent.

(11) If stocks of a high dividend company are deposited in an investment trader or an investment broker, the high dividend company shall give notice of a statement of dividends to be distributed by the high dividend company to the investment trader or investment broker to whom trading is entrusted by a stock holder, directly or through the Korea Securities Depository established under Article 294 of the Financial Investment Services and Capital Markets Act, immediately after passing a resolution on the distribution of dividends, and the investment trader

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or investment broker shall separate the income referred to in Article 104-27 (1) of the Act, and the income referred to in Article 104-27 (2) of the Act and shall withhold the tax thereon.

(12) A high dividend company shall submit a statement of distribution of dividends of the high dividend company to the head of the tax office having jurisdiction over the place of tax payment, immediately after passing a resolution on the distribution of dividends. <Newly Inserted by Presidential Decree No. 26959, Feb. 5, 2016>

[This Article Newly Inserted by Presidential Decree No. 26070, Feb. 3, 2015]

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Tables

Table 1. Description of sample

	Year	<i>HIGH</i>	<i>HIGH1</i>	<i>HIGH2</i>	OTHERS	Total
Number of Firms	2015	133 (9.1%)	70 (4.8%)	63 (4.3%)	1,330 (90.9%)	1,463 (100%)
	2016	164 (10.4%)	92 (5.8%)	72 (4.6%)	1,409 (89.6%)	1,573 (100%)
Dividends	2015	2,260 (16.1%)	1,317 (9.4%)	943 (6.7%)	11,767 (83.9%)	14,027 (100%)
	2016	6,112 (33.6%)	1,738 (9.6%)	4,375 (24.1%)	12,074 (66.4%)	18,186 (100%)

Table 2. Summary Statistics

VARS	ALL		<i>HIGH</i>		<i>HIGH1</i>		<i>HIGH2</i>	
	mean	sd	mean	sd	mean	sd	mean	sd
DV	0.61	0.94	1.88	1.26	2.27	1.40	1.41	0.85
Δ DV	0.01	0.43	0.38	0.41	0.39	0.49	0.37	0.29
DVG	6.91	29.42	47.93	40.42	38.35	39.84	59.42	38.18
ROA	2.37	10.48	9.40	5.18	8.82	5.13	10.10	5.17
M/B	1.49	0.95	1.43	0.84	1.34	0.76	1.54	0.92
Δ TA	11.36	31.48	11.46	19.47	9.25	12.32	14.12	25.33
LEVERAGE	41.48	20.68	33.90	17.51	31.63	18.27	36.64	16.21
SALEG	9.84	40.27	12.67	29.31	9.92	23.46	15.96	34.87
CASH	19.52	17.04	22.98	17.63	23.93	18.71	21.83	16.23
Δ CASH	0.52	7.76	1.91	7.01	1.16	6.34	2.81	7.66
RE/TE	0.16	3.05	0.70	0.21	0.70	0.20	0.69	0.22
LARGE	12.12	32.64	11.78	32.30	11.73	32.28	11.85	32.44
FOREIGN	7.15	11.59	11.13	14.17	10.77	15.74	11.57	12.06
INSIDER	40.46	28.33	44.97	14.72	47.75	14.97	41.63	13.74

Table 3. Regression results: Change in dividend-asset ratio (ΔDV)

	(1)	(2)	(3)	(4)	(5)	(6)
Sample	All		All		Dividend-paying firms	
<i>HIGH</i>	0.411*** (16.36)		0.386*** (14.97)		0.326*** (11.12)	
<i>HIGH1</i>		0.422*** (10.76)		0.407*** (10.33)		0.350*** (8.54)
<i>HIGH2</i>		0.397*** (15.13)		0.360*** (13.55)		0.296*** (9.63)
ROA			0.004*** (4.50)	0.004*** (4.54)	0.010** (2.35)	0.010** (2.37)
M/B			0.036*** (3.11)	0.036*** (3.13)	0.072*** (2.95)	0.072*** (2.96)
ΔTA			-0.001*** (-4.26)	-0.001*** (-4.25)	-0.005*** (-4.39)	-0.005*** (-4.37)
LEVERAGE			0.001*** (2.67)	0.001*** (2.71)	0.001** (2.24)	0.001** (2.29)
SALEG			0.001*** (3.69)	0.001*** (3.70)	0.002** (2.15)	0.002** (2.16)
$\Delta CASH$			0.004*** (3.34)	0.004*** (3.36)	0.007*** (2.72)	0.007*** (2.75)
LARGE			0.032 (1.54)	0.032 (1.54)	0.036 (1.25)	0.036 (1.24)
FOREIGN			-0.001 (-0.80)	-0.001 (-0.80)	-0.002 (-1.62)	-0.002 (-1.64)
INSIDER			0.000 (0.34)	0.000 (0.30)	0.001 (0.96)	0.001 (0.90)
Intercept	-0.031*** (-4.00)	-0.031*** (-4.00)	-0.132*** (-3.28)	-0.132*** (-3.29)	-0.189*** (-2.92)	-0.189*** (-2.92)
N	3037	3037	3022	3022	1677	1677
adj. R-sq	0.082	0.082	0.106	0.105	0.130	0.130

Note: t-statistics in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Table 4. Regression results: Dividend growth rate (*DVG*)

	(1)	(2)	(3)	(4)	(5)	(6)
Sample	All		All		Dividend-paying firms	
<i>HIGH</i>	45.099***		41.989***		37.137***	
	(18.91)		(17.22)		(13.97)	
<i>HIGH1</i>		35.519***		33.299***		29.764***
		(11.26)		(10.40)		(8.73)
<i>HIGH2</i>		56.595***		52.429***		46.257***
		(17.12)		(15.87)		(13.52)
ROA			0.259***	0.245***	0.803***	0.775***
			(5.11)	(4.90)	(3.30)	(3.22)
M/B			1.109**	1.019*	0.725	0.607
			(2.06)	(1.92)	(0.57)	(0.48)
Δ TA			0.041**	0.041**	0.160**	0.156**
			(2.01)	(2.02)	(2.18)	(2.16)
LEVERAGE			0.077***	0.069***	0.173***	0.160***
			(2.95)	(2.65)	(3.29)	(3.06)
SALEG			0.029*	0.028	0.116*	0.112*
			(1.69)	(1.64)	(1.76)	(1.69)
Δ CASH			0.241***	0.228***	0.606***	0.578***
			(3.54)	(3.44)	(4.08)	(3.94)
LARGE			1.030	1.075	1.635	1.710
			(0.60)	(0.63)	(0.69)	(0.72)
FOREIGN			0.111*	0.110*	0.056	0.059
			(1.73)	(1.70)	(0.56)	(0.59)
INSIDER			0.037	0.046	0.037	0.054
			(1.10)	(1.43)	(0.58)	(0.86)
Intercept	2.829***	2.829***	-5.144**	-5.017**	-10.774**	-10.719**
	(6.28)	(6.28)	(-2.31)	(-2.26)	(-2.47)	(-2.47)
N	3280	3280	2888	2888	1677	1677
adj. R-sq	0.193	0.205	0.206	0.215	0.204	0.211

Note: t-statistics in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Table 5. Excess Dividends

Scenario	Scenario A ΔDividend Payout Propensity: 0%					Scenario B ΔDividend Payout Propensity: 3%			
	Year	<i>HIGH</i>	<i>HIGH1</i>	<i>HIGH2</i>	OTHERS	<i>HIGH</i>	<i>HIGH1</i>	<i>HIGH2</i>	OTHERS
Assumed payout propensity	2015	23.5	30.8	15.4	18.5	24.9	32.7	16.3	19.7
	2016	22.7	27.6	15.6	18.7	24.8	30.2	17.0	20.5
Excess DV	2015	320.6	157.5	163.1	2,813.2	202.4	86.9	115.5	2,336.0
	2016	2,794.0	396.4	2,397.6	928.6	2,494.9	272.9	2,222.0	166.2
Excess / Actual DV	2015	14.2	12.0	17.3	23.9	9.0	6.6	12.2	19.9
	2016	45.7	22.8	54.8	7.7	40.8	15.7	50.8	1.4
Excess / Total DV	2015	2.3	1.1	1.2	20.1	1.4	0.6	0.8	16.7
	2016	15.4	2.2	13.2	5.1	13.7	1.5	12.2	0.9

Table 6. Regression results: Changes in share repurchases-asset ratio

	(1)	(2)	(3)	(4)	(5)	(6)
Sample	All		All		Dividend-paying firms	
<i>HIGH</i>	0.031 (1.05)		0.013 (0.44)		0.026 (0.82)	
<i>HIGH1</i>		-0.022 (-0.66)		-0.044 (-1.27)		-0.034 (-0.94)
<i>HIGH2</i>		0.094* (1.95)		0.082* (1.71)		0.101** (2.05)
ROA			0.002** (2.52)	0.002** (2.44)	0.003 (0.76)	0.003 (0.70)
M/B			0.025** (2.28)	0.024** (2.23)	0.034 (1.64)	0.033 (1.59)
Δ TA			-0.001** (-2.42)	-0.001** (-2.43)	-0.002*** (-2.75)	-0.002*** (-2.78)
LEVERAGE			-0.001*** (-2.90)	-0.001*** (-3.02)	-0.001 (-1.30)	-0.001 (-1.46)
SALEG			-0.000 (-0.84)	-0.000 (-0.88)	-0.000 (-0.90)	-0.000 (-0.97)
Δ CASH			-0.004*** (-3.33)	-0.004*** (-3.38)	-0.007*** (-2.78)	-0.007*** (-2.87)
LARGE			0.020 (0.91)	0.020 (0.92)	0.025 (0.88)	0.026 (0.90)
FOREIGN			0.000 (0.56)	0.000 (0.55)	-0.000 (-0.33)	-0.000 (-0.30)
INSIDER			-0.000 (-0.83)	-0.000 (-0.70)	-0.001 (-0.98)	-0.001 (-0.80)
Intercept	0.028*** (3.26)	0.028*** (3.26)	0.061 (1.64)	0.062* (1.66)	0.067 (1.12)	0.067 (1.13)
N	3037	3037	3022	3022	1677	1677
adj. R-sq	0.000	0.001	0.013	0.015	0.018	0.021

Note: t-statistics in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Table 7. Regression results: Changes in share repurchases-total payout ratio

	(1)	(2)	(3)	(4)	(5)	(6)
Sample	All		All		Dividend-paying firms	
<i>HIGH</i>	0.066 (0.05)		-1.026 (-0.69)		1.195 (0.80)	
<i>HIGH1</i>		-0.924 (-0.64)		-2.408 (-1.57)		-0.340 (-0.22)
<i>HIGH2</i>		1.254 (0.55)		0.634 (0.27)		3.094 (1.31)
ROA			0.135 (1.64)	0.133 (1.62)	0.135 (0.75)	0.129 (0.72)
M/B			-0.287 (-0.37)	-0.301 (-0.39)	-0.624 (-0.58)	-0.648 (-0.60)
Δ TA			0.010 (0.33)	0.010 (0.33)	-0.068 (-1.47)	-0.068 (-1.48)
LEVERAGE			-0.090*** (-2.61)	-0.091*** (-2.64)	-0.063* (-1.69)	-0.065* (-1.76)
SALEG			-0.019 (-0.77)	-0.019 (-0.78)	-0.043 (-1.16)	-0.044 (-1.19)
Δ CASH			-0.312*** (-3.24)	-0.314*** (-3.26)	-0.225* (-1.79)	-0.231* (-1.83)
LARGE			2.020 (1.28)	2.027 (1.28)	2.134 (1.27)	2.150 (1.28)
FOREIGN			-0.017 (-0.36)	-0.017 (-0.37)	-0.026 (-0.58)	-0.026 (-0.56)
INSIDER			-0.020 (-0.51)	-0.018 (-0.47)	-0.016 (-0.37)	-0.012 (-0.29)
Intercept	0.028 (0.04)	0.028 (0.04)	4.841* (1.77)	4.860* (1.77)	3.144 (0.95)	3.155 (0.96)
N	3037	3037	3022	3022	1677	1677
adj. R-sq	-0.000	-0.001	0.007	0.007	0.006	0.006

Note: t-statistics in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Table 8. Regression results for change in cash holdings

	(1)	(2)	(3)	(4)	(5)	(6)
Sample	All		All		Dividend-paying firms	
<i>HIGH</i>	1.536*** (3.54)		1.233*** (2.76)		1.225*** (2.68)	
<i>HIGH1</i>		0.787 (1.51)		0.535 (1.01)		0.464 (0.86)
<i>HIGH2</i>		2.437*** (3.60)		2.069*** (3.03)		2.158*** (3.12)
ROA			0.053** (2.35)	0.052** (2.30)	0.170*** (3.15)	0.167*** (3.09)
M/B			0.108 (0.49)	0.101 (0.45)	-0.900*** (-2.82)	-0.910*** (-2.85)
Δ TA			0.003 (0.26)	0.003 (0.26)	-0.017 (-0.82)	-0.017 (-0.85)
LEVERAGE			-0.004 (-0.49)	-0.004 (-0.57)	-0.009 (-0.96)	-0.010 (-1.08)
SALEG			-0.014** (-2.20)	-0.014** (-2.21)	-0.003 (-0.28)	-0.004 (-0.31)
LARGE			-0.155 (-0.44)	-0.152 (-0.43)	-0.275 (-0.62)	-0.267 (-0.60)
FOREIGN			0.010 (0.85)	0.010 (0.84)	0.007 (0.50)	0.007 (0.53)
INSIDER			-0.019** (-2.16)	-0.018** (-2.07)	-0.014 (-1.33)	-0.013 (-1.16)
Intercept	0.374** (2.50)	0.374** (2.50)	1.048 (1.56)	1.056 (1.57)	1.503* (1.80)	1.505* (1.80)
N	3026	3026	3022	3022	1677	1677
adj. R-sq	0.003	0.004	0.009	0.010	0.026	0.028

Note: t-statistics in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Table 9. Qualifying Firms: Logit Analysis

	(1)	(2)	(3)	(4)	(5)	(6)
Dep. variables	HIGH	HIGH1	HIGH2	HIGH	HIGH1	HIGH2
Sample	All			Dividend-paying firms		
ROA	0.130*** (9.87)	0.099*** (6.25)	0.135*** (7.91)	0.110*** (6.74)	0.072*** (3.69)	0.118*** (5.56)
M/B	-0.114 (-1.31)	-0.180 (-1.59)	-0.068 (-0.61)	-0.020 (-0.22)	-0.071 (-0.59)	0.013 (0.11)
ΔTA	-0.000 (-0.12)	-0.003 (-0.56)	0.001 (0.15)	-0.000 (-0.06)	-0.003 (-0.49)	0.000 (0.08)
LEVERAGE	-0.006 (-1.60)	-0.016*** (-3.22)	0.007 (1.24)	-0.005 (-1.16)	-0.015*** (-2.88)	0.010* (1.68)
SALEG	0.003 (1.20)	0.002 (0.57)	0.003 (0.95)	0.006** (2.31)	0.004 (1.06)	0.007* (1.95)
ΔCASH	0.015 (1.58)	-0.004 (-0.35)	0.030** (2.30)	0.019* (1.76)	-0.004 (-0.29)	0.035** (2.48)
LARGE	-0.193 (-0.91)	-0.118 (-0.44)	-0.239 (-0.78)	-0.341 (-1.59)	-0.255 (-0.94)	-0.361 (-1.17)
FOREIGN	0.003 (0.53)	0.004 (0.62)	0.002 (0.30)	-0.001 (-0.14)	0.002 (0.27)	-0.003 (-0.42)
INSIDER	0.012*** (2.84)	0.022*** (3.97)	-0.002 (-0.31)	0.006 (1.27)	0.017*** (2.97)	-0.010 (-1.52)
RE/TE	0.313** (2.25)	0.313* (1.83)	0.222 (1.19)	0.172 (1.26)	0.198 (1.20)	0.081 (0.44)
L.ΔDV	0.899*** (5.73)	0.714*** (4.12)	0.856*** (4.97)	0.229 (0.85)	0.156 (0.45)	0.279 (0.78)
Intercept	-3.617*** (-11.07)	-3.937*** (-9.67)	-4.536*** (-10.03)	-2.529*** (-6.67)	-2.958*** (-6.20)	-3.515*** (-6.72)
N	2771	2771	2771	1559	1559	1559
Pseudo R-sq	0.170	0.137	0.143	0.081	0.055	0.087

Note: z-statistics in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Table 10. Summary Statistics: HH, HL, and LH groups

Panel A. Firm Characteristics				
Group	Year	HH	HL	LH
Number of Firms		60	73	102
DV	2015	2.1	1.6	1.2
	2016	2.5	1.3	1.6
ROA	2015	9.9	8.4	6.8
	2016	10.8	6.6	9.1
CASH	2015	23.4	19.2	22.3
	2016	25.2	19.9	24.4
LEVERAGE	2015	30.6	35.4	37.0
	2016	30.1	35.5	36.5
SIZE	2015	1.0	1.1	2.9
	2016	1.1	1.2	3.1
Panel B. Excess Dividends				
Scenario	Δ Dividend Payout Propensity: 0%			
Group	Year	HH	HL	LH
Assumed propensity	2015	26.9	20.7	19.7
	2016	26.9	20.7	19.7
Excess DV	2015	165.6	155.0	1,745.3
	2016	428.4	-46.1	2,358.0
Excess / Actual DV	2015	15.4	13.1	53.4
	2016	24.4	-4.0	54.5

Table 11. Dividend Payment Changes: HH, HL and LH groups

	(1)	(2)	(3)	(4)	(5)	(6)
Dep. variables	ΔDV			DVG		
Year	ALL	2015	2016	ALL	2015	2016
HH	0.402*** (8.91)	0.469*** (6.83)	0.337*** (5.87)	33.150*** (10.07)	38.986*** (7.54)	27.886*** (7.17)
HL	0.030 (0.68)	0.361*** (7.78)	-0.299*** (-5.69)	17.811*** (4.52)	47.530*** (9.22)	-12.051*** (-3.81)
LH	0.137*** (4.49)	-0.051 (-1.22)	0.335*** (9.73)	26.949*** (8.27)	6.614 (1.56)	47.977*** (11.64)
ROA	0.005*** (5.14)	0.005*** (4.03)	0.003*** (2.70)	0.291*** (5.60)	0.331*** (4.21)	0.192*** (3.03)
M/B	0.034*** (2.92)	0.030* (1.96)	0.038** (2.15)	1.116** (2.08)	0.502 (0.64)	1.747** (2.37)
ΔTA	-0.002*** (-4.27)	-0.002*** (-3.43)	-0.001** (-2.44)	0.038* (1.71)	0.016 (0.51)	0.066** (2.42)
LEVERAGE	0.001** (2.40)	0.001** (2.35)	0.001 (1.15)	0.073*** (2.71)	0.091** (2.28)	0.051 (1.47)
SALEG	0.001*** (3.91)	0.001** (2.55)	0.001*** (2.67)	0.036** (1.96)	0.031 (1.33)	0.026 (1.10)
ΔCASH	0.004*** (3.56)	0.005*** (3.00)	0.003* (1.87)	0.280*** (3.87)	0.265** (2.58)	0.227** (2.57)
LARGE	0.029 (1.37)	0.054 (1.62)	0.003 (0.11)	1.175 (0.68)	1.368 (0.50)	1.232 (0.61)
FOREGIN	-0.001 (-0.65)	-0.002 (-1.32)	0.001 (0.91)	0.110 (1.64)	0.189* (1.66)	0.046 (0.70)
INSIDER	0.000 (0.27)	-0.000 (-0.52)	0.001 (1.22)	0.039 (1.15)	0.006 (0.12)	0.088** (2.27)
Intercept	-0.115*** (-2.87)	-0.096* (-1.78)	-0.146** (-2.51)	-5.130** (-2.27)	-3.870 (-1.19)	-6.877** (-2.30)
N	3022	1456	1566	2888	1387	1501
adj. R-sq	0.073	0.123	0.112	0.139	0.188	0.249

Note: t-statistics in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Table 12. Logit Analysis: HH, HL, and LH groups

	(1)	(2)	(3)	(4)	(5)	(6)
Dep. variables	HH	HL	LH	HH	HL	LH
Sample	All			Dividend-paying firms		
ROA	0.123*** (6.47)	0.076*** (4.53)	0.076*** (5.50)	0.103*** (4.61)	0.034* (1.67)	0.029 (1.64)
M/B	-0.027 (-0.22)	-0.421*** (-2.95)	-0.081 (-0.83)	0.051 (0.40)	-0.238 (-1.64)	0.093 (0.89)
Δ TA	-0.002 (-0.31)	0.002 (0.46)	0.004 (1.12)	-0.002 (-0.27)	0.004 (0.83)	0.005 (1.32)
LEVERAGE	-0.013** (-2.13)	-0.006 (-1.19)	-0.002 (-0.36)	-0.012* (-1.80)	-0.004 (-0.77)	-0.002 (-0.37)
SALEG	0.000 (0.03)	0.001 (0.27)	0.001 (0.23)	0.002 (0.35)	0.003 (0.88)	0.003 (0.94)
Δ CASH	0.013 (0.91)	0.000 (0.04)	0.001 (0.13)	0.016 (1.02)	0.000 (0.02)	0.003 (0.22)
LARGE	0.082 (0.27)	-0.119 (-0.42)	-0.588** (-2.15)	-0.032 (-0.10)	-0.182 (-0.64)	-0.759*** (-2.76)
FOREIGN	0.003 (0.45)	-0.006 (-0.84)	0.011** (1.96)	0.001 (0.17)	-0.013 (-1.56)	0.008 (1.33)
INSIDER	0.030*** (4.56)	0.000 (0.06)	-0.001 (-0.20)	0.026*** (3.89)	-0.006 (-1.04)	-0.009* (-1.70)
RE/TE	0.774*** (3.86)	0.992*** (4.51)	0.740*** (4.73)	0.421 (1.17)	1.007*** (3.03)	-0.114 (-0.33)
L. Δ ADV	1.101*** (6.03)	0.722*** (3.87)	0.075 (0.46)	0.960*** (5.30)	0.578*** (3.14)	-0.042 (-0.27)
Intercept	-5.404*** (-10.66)	-3.121*** (-7.17)	-3.272*** (-9.15)	-4.679*** (-8.29)	-2.460*** (-5.00)	-1.836*** (-4.20)
N	2771	2771	2771	1559	1559	1559
Pseudo R-sq	0.212	0.103	0.086	0.133	0.035	0.031

Note: z-statistics in parentheses, *** p<0.01, ** p<0.05, * p<0.1