DIVIDEND SIGNALING AND FIRMS' STRATEGIC BEHAVIOR IN DIVIDEND ANNOUNCEMENT POSITION

Kyung Jae Rhee[a*] and Kyung Suh Park[b]

[a] Principal Research Engineer, Korea Civil Aviation Association
[b] Professor, Korea University Business School
[*] Corresponding author. E-mail: kkr107@korea.ac.kr

Abstract: We examine whether firms are strategic in changing dividend announcement position when factors that commonly affect the values of firms in the same industry exist. We find that firms that change dividend announcement position from a late to the first enjoy more favorable market reaction than those that change from the first to a late. Moreover, firms with higher investments, lower profitability, and higher cash flows tend to announce dividends by changing the announcement position from the first to a late in an industry.

Keywords: Dividend timing; dividend signaling; dividend announcement position; stock market reaction

1. INTRODUCTION

If a dividend announcement conveys private information, positioning a dividend announcement order in an industry is likely to be an important strategic decision for corporate managers. Studies on dividend announcements have examined the informativeness of announcement timing or spillover effects between announcing firms and their rivals. This article attempts to improve the literature on changing an early or a late dividend announcement position in an industry by examining stock market reactions. We measure the market reactions to dividend announcements by rival firms in an industry over a whole dividend season and compare the announcement effects for each firm to evaluate the benefits of changing dividend announcement position.

The dividend signaling theory indicates that announcing dividends is an informative mechanism as information asymmetries exist between managers and the market (Miller and Rock, 1985; Ohlson, 1991; Kalay and Lowenstein, 1986). However, paying dividends require hard cash, and firms would weigh the order of dividend announcements in an industry. Individual factors certainly exist for changing dividend announcement position from the previous season. Firms will consider changing the announcement position as a strategic option only if the immediate effect of negative information from changing the announcement position is large enough to outweigh the lower value effects.

By observing the pattern of past dividend announcements, Kalay and Loewenstein (1985) develop a model for predicting the timing of the next dividend announcement date and confirm that bad news is likely to be delivered late. Brown, Choi, and Kim (1994) find that dividend timing affects its informativeness and earnings timing does not. Firms are strategic in the timing of dividend announcements in an industry (Rhee, Kim, and Park, 2017). Studies have examined the prediction of the timing of dividend announcements and information contents in dividend announcements, but the market reaction to change in dividend announcement positions has not been examined. We measure and use the cumulative announcement effects to evaluate dividend announcement position changes and find that the market reacts more favorably for firms that change their announcement position from a late to the first announcer in an industry regardless of their dividend changes. The results suggest that changing dividend announcement position might be a more important decision than dividend changes.

We also identify the common features of changing dividend announcement position to determine what corporate factors are induced. Our empirical analyses show that a firm's propensity to change dividend announcement position from the first to a late is closely related to higher investments, lower profitability, and higher cash flows. Our findings suggest that changing dividend announcement position is an important strategic tool for complementing the decision on dividend changes.

The rest of the study is organized as follows. The hypotheses and data are introduced in Sections 2 and 3, respectively. How the market reacts to changing dividend announcement position is analyzed in Section 4. The common factors affecting the decision on changing the announcement position are discussed in Section 5. The results and the concluding remarks are presented in Section 6.

2. HYPOTHESES AND METHODOLOGY

2.1. Hypotheses

Over the years, financial economists have shown that the market reacts to dividend announcements. Miller and Rock (1985) argue that information asymmetries between firms and outside investors may induce a signaling role for dividends. Firms in the same industry tend to share common macro factors and market situations. If any of the common factors are private, managers may change dividend announcement position from the previous dividend season. As the time gap increases by changing the announcement position from the previous season, a new piece of information related to the industry or firm can be delivered to the market. Therefore, firms with unpleasant information can reduce or minimize the effect of information by changing the dividend announcement position from the first to a late announcer. Thus, we propose the following:

H1. The market reactions to firms that change dividend announcement from the first to a late announcer are smaller than those that change from a late to the first in an industry.

Accordingly, we develop hypotheses on the company characteristics affecting the decision to change dividend announce position from the first to a late announcer. Research suggests that the decision on dividends is associated with several firm characteristics, such as dividend level, profitability, investment, leverage, size, and free cash flow. Fama and French (2001) find that profitability, investment opportunities, and size are the three main characteristics affecting the decision to pay dividends. We expect some of these firm characteristics also play an important role in changing dividend announcement position. Therefore, we propose the following:

H2. Firms that change dividend announcement position from the first to a late announcer tend to have lower payout ratios, higher investments, lower profitability, smaller firm sizes, and higher cash flows than those that change from a late to the first.

The basic notion of the payout ratio is to examine how well a company's earnings support the dividend payment. Paying at a low ratio means that the company keeps most or all of its earnings to reinvest in growing the business. If the shareholders of a firm prefer sharing profits to retaining them, the firm's low-level dividend announcement can be harsh news to shareholders. When delivering dividend news to the market, a company must balance between sharing profits with shareholders through dividends and retaining profits to reinvest in the business. In this case, firm management may have a strong incentive to position the dividend announcement order. Thus, we conjecture that changing dividend announcement position from the first to a late announcer is influenced by the dividend payout ratio.

Return on assets is used to measure a firm's profitability because profitability is a main factor affecting the cost and benefit of dividend signaling. Fama and French (2001), Jensen, Solberg, and Zorn (1992), Li and Zhao (2008), and Miller and Rock (1985) find that paying out dividends is positively related to a firm's profitability. Less profitable firms are likely to avoid the attention of the market by changing the announcement position from the first to a late announcer. We conjecture that a firm with a low return on assets ratio is likely to change announcement position from the first to a late announcer.

Small firms appear to face larger financial friction (Hennessy and Whited, 2007) and greater difficulties in raising external capital (given their lack of reputation). Atiase (1985) and Bhushan (1989) assert that the precision of preannouncement information is lower for small firms than for large firms. Therefore, dividend announcements of small firms are less likely to draw attention in the market because of these limitations. Therefore, the management of small firms may tend to convey information with a time lag unless its contents are beneficial to overcome their limitations and support their stock prices. Accordingly, we hypothesize that changing dividend announcement position from the first to a late announcer is preferred for small firms.

2.2. Empirical models

To examine the stock reaction, the market adjusted model is employed to measure the cumulative abnormal returns (CARs). The cumulative abnormal returns are measured as follows:

$$CAR_i = \Sigma_{t=-1}^{1}(r_{i,t} - r_{m,t}), \qquad (1)$$

where $r_{i,t}$ represents the return on security i at date t and $r_{m,t}$ represents the return on the market indices m at date t.

To examine the relationship between firm characteristics and changing dividend announcement position, logit regressions are employed by using the following model.

$$Y = \alpha_1 + \beta_1 PayR + \beta_2 INV + \beta_3 ROA + \beta_4 SIZE + \beta_5 FCF + IND + YR + \varepsilon, \qquad (2)$$

where Y is a dummy variable with the value of 1 if the dividend announcer is an order changer from the first announcer in a previous season ($t–1$) to a late announcer in current season ($t0$) in an industry, and 0 otherwise. According to Schnaars (1994), entering late is more common than entering first because only one company can be the first mover in any market. We define the first announcer as the first firm that announces a dividend within an industry in a given quarter, and the remaining firms in the same industry during the same quarter are late announcers with respect to dividend announcements. The payout ratio (PayR) is the percentage of a company's earnings paid out to investors as cash dividends. INV represents the firm's level of investment and is measured as the ratio of a firm's capital expenditures to total assets. We use return on assets (ROA), measured as the ratio of income before extraordinary items divided by total assets, to measure a firm's profitability. SIZE is measured as a function of the natural log of a firm's total assets. A firm's free cash flow (FCF) is the operating income before depreciation minus interest expenses, taxes, preferred dividends, and the firm's capital expenditures, and normalized with total assets. YR and IND are the dummy variables used to control for year and industry effects, respectively.

3. DATA

We obtain our sample from Compustat and stock data from the Center for Research in Security Prices (CRSP) daily files from 1998 to 2007. Specifically, the announcement date information is obtained from the declaration date of the CRSP files. We exclude non-December fiscal year firms to avoid the dividend–quarter overlap (i.e., firm i's quarter t can be firm j's quarter $t-1$ or $t+1$). By excluding these items, we obtain synchronized

Table 1
Number of industries, firms, and changing order of dividend announcements, 1998–2007

Year	Number of Industries	Number of Firms	Number of 1st'→Late	Number of Late→1st
1998	149	2003	190	196
1999	151	1933	250	255
2000	141	1811	219	221
2001	131	1647	194	209
2002	130	1571	200	193
2003	134	1649	194	188
2004	138	1690	191	192
2005	142	1756	197	195
2006	144	1790	222	219
2007	138	1778	202	205
1998-2007	183	3803	761	755

The sample includes NYSE, NASDAQ, and AMEX firms from CRSP with SIC codes outside the ranges of 4900 and 9100–9999. The sample only includes CRSP distribution event data for the distribution codes between 1200 and 1299. 1st→Late (Late→1st) represents change in a firm's dividend announcement position from the first (late) announcer to a late (first) announcer.

fiscal quarters. Declaration decisions and accounting reports are usually made in sequential order. First announcer and late announcers are based on the sequential setting of the declaration dates.

We also exclude firms in the public service or utility industry (SIC 4900), firms in public administration (SIC 9111–9999), closed-end funds, stock certificates, REITs, and ADRs. Unlike other dividend studies, we include firms in the financial industry because they are subject to common market situations, and the performance of financial firms in the same industry shows some

commonality. We classify the industry using the three-digit header SIC industry code.

Table 1 presents the number of industries, announcing firms, and firms that change dividend announcement position from *t-1* to *t0*. These criteria resulted in 183 industries and 3,803 firms. During the sample period, 761 firms change their dividend announcement position from the first announcer to a late announcer (1st→Late), and 755 firms change announcement position from late to the first (Late→1st).

Table 2
Summary statistics

Announcement Position Change		PayR	INV	ROA	SIZE	FCF
1st→Late	Mean	0.287	0.014	0.039	7.645	0.004
	Stdev	3.612	0.020	0.208	1.799	0.028
	Med	0.106	0.010	0.024	7.632	0.006
	N	2253	2048	2175	2175	2091
Late→1st	Mean	0.236	0.013	0.039	7.634	0.003
	Stdev	2.548	0.015	0.148	1.801	0.026
	Med	0.122	0.010	0.025	7.638	0.005
	N	2267	2079	2203	2206	2114
t-value		−0.544	−0.545	0.029	−0.203	−1.901*

PayR is the dividend payout ratio of a firm. INV is the level of investment of a firm and is measured as the ratio of a firm's capital expenditures to total assets. We use ROA to measure the profitability of a firm. SIZE is measured as a function of the natural log of a firm's total assets. A firm's FCF is calculated as the operating income before depreciation minus interest expenses, taxes, preferred dividends, and the firm's capital expenditures, and it is normalized using total assets. 1st'!Late (Late'!1st) represents change in a firm's dividend announcement position from the first (late) announcer to a late (first) announcer. Parametric t-test statistics are provided to test the difference in means between the two groups. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 2 provides the summary statistics for the characteristics of the explanatory variables. The average PayR of "1st→Late" is 0.287, higher than the 0.236 of "Late→1st." The average ratio of "1st→Late" INV is 0.014, higher than the 0.013 of "Late→1st." The average ROA of "1st→Late" is 0.039, similar to that of "Late→1st." The average size of "1st→Late" is 7.645, larger than the 7.634 of "Late→1st." The average free cash flow of "1st→Late" is 0.004, again higher than the 0.003 of "Late→1st." In sum, firms that change dividend announcement position from the first in *t-1* to a late announcer in *t0* significantly have higher cash flows than

firms from a late to the first announcer. Firms that change dividend announcement position from the first to a late announcer seem to pay higher dividends, invest more, are more profitable, and are larger than firms from a late to the first announcer but insignificantly so.

4. RESULTS OF THE STOCK PRICE REACTION

To examine our hypothesis on price reactions to dividend announcements, we compare the CARs for the three-day window of day –1 through +1. Table 3 presents the

market reactions of "1st→Late" and "Late→1st" to their own dividend announcement dates and to dividend changes.

Table 3
The market reactions

CAR of Announcement Position Change		(–1+1)	Decrease	Increase
1st→Late	Mean	0.0018	0.0022	0.0000
	Stdev	0.0465	0.0456	0.0491
	Med	0.0006	0.0006	0.0003
	N	2253	1596	569
Late→1st	Mean	0.0044	0.0049	0.0022
	Stdev	0.0490	0.0488	0.0509
	Med	0.0021	0.0010	0.0024
	N	2252	1426	644
t-value		1.834*	1.591	0.784

CAR represents the daily average of the three-day cumulative abnormal return, days –1 through +1, (day 0 is the dividend announcement day). CARs are measured as follows: $CAR_i = \sum_{t=-1}^{1}(r_{i,t} - r_{m,t})$, where $r_{i,t}$ represents the return on security i at date t and $r_{m,t}$ represents the return on the market indices m at date t. Increase (Decrease) represents firms that announce an increased (decreased) payout ratio in comparison with the previous season. Parametric t-test statistics are provided to test the difference between the means of the two groups. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 3 presents the market reactions when firms change their announcement position. Increase (decrease) represents firms that announce an increased (decreased) payout ratio from *t-1* to *t0*. 1st→Late (Late→1st) represents firms that change announcement position from the first (late) announcer in *t-1* to a late (first) announcer in *t0*. When dividend announcements are made public in an industry, the price reactions for the three-day windows are 0.18% for "1st→Late" in comparison with 0.44% for "Late→1st," thus supporting the hypotheses. The market significantly and positively reacts to dividend announcements not only for "1st→Late" but also for "Late→1st." However, the market reaction is lower for "1st→Late" as we conjecture. In addition to the market reaction to changing announcement position, we also examine how the market reacts to dividend changes. We divide the samples into two groups: payout

ratio increase and decrease. When firms make dividend decrease (increase) announcements, the market reacts at the level of 0.22% (0.00%) for "1st→Late" and 0.49% (0.22%) for "Late→1st." When firms announce dividend changes, the market still reacts positively but less so for "1st→Late" for both increase and decrease. This result indicates that the market reacts more favorably to firms that change announcement position from a late to the first announcer regardless of dividend changes. The results from the market reaction analysis confirm the hypothesis that firms that change announcement position from a late in *t-1* to the first announcer in *t0* enjoy a favorable market reaction.

5. REGRESSION ANALYSES RESULTS ON THE CHANGE IN DIVIDEND ANNOUNCEMENT ORDER

Table 4
Pearson's correlation coefficients

	Y	PayR	INV	ROA	SIZE	FCF
Y	1					
PayR	–0.01	1				
	(0.59)					
INV	–0.01	0.00	1			
	(0.58)	(0.99)				
ROA	0.00	0.00	0.08**	1		
	(0.98)	(0.89)	(0.00)			
SIZE	0.00	–0.01	–0.06**	–0.10**	1	
	(0.84)	(0.54)	(0.00)	(0.00)		
FCF	–0.03	–0.04*	–0.51**	0.19**	0.04*	1
	(0.06)	(0.01)	(0.00)	(0.00)	(0.02)	

The Pearson's correlation matrix for the variables used in our analysis is presented. The correlation measures the strength of the relationship among the variables, and the p-values are reported in parenthesis under the values. * and ** denote statistical significance at the 5% and 1% levels, respectively.

Table 4 presents the Pearson correlation and p-values among the variables. Y denotes the change in dividend announcement position from the previous dividend season. The results show that investment is positively and significantly correlated with return on assets and is negatively and significantly correlated with size and cash flows. ROA is negatively and significantly correlated with

Table 5
Estimated logit regressions on the change in dividend announcement order

	(1)		*(2)* *Increase*		*(3)* *Decrease*	
	Coeff	*P*	*Coeff*	*P*	*Coeff*	*P*
Intercept	−0.540	0.565	18.599	0.993	−1.602	0.179
PayR	0.009	0.420	0.001	0.959	0.022	0.345
INV	6.412	0.014	6.520	0.204	5.071	0.139
ROA	−1.206	0.082	2.110	0.397	−2.131	0.011
SIZE	0.006	0.798	−0.119	0.019	0.064	0.037
FCF	5.236	0.002	3.418	0.329	5.553	0.011
Ind, YR	Y		Y		Y	
R_sq	0.014		0.207		0.065	

Logit regressions of the relationship between the change in dividend announcement order and the characteristics of firms are presented. Estimation is by model (2). *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

size and is positively and significantly correlated with cash flows. Size is positively and significantly correlated with cash flows.

Table 5 shows the results of the empirical estimation of the logit model (2). Industry and year effects are controlled in this regression. Each regression explains 1.4%–21% of the cross-sectional variation in the change in dividend announcement order.

Regression (1) in Table 5 estimates the relationship between change in dividend announcement position and firm characteristics. The regression results show that the coefficients of INV, ROA, and FCF are 6.412, −1.206, and 5.236 and that the p-values are 0.014, 0.082, and 0.002, which are significant at the 5%, 10%, and 1% levels, respectively. The results explain the 1.4% of the cross-sectional variation in the change in dividend announcement position. The regression results indicate that firms with higher investments, lower profits, and higher cash flows significantly change dividend announcement position from the first announcer in (*t-1*) to a late announcer (*t0*) announcer in (t0) in an industry. By contrast, a firm's payout ratio and size are not significantly related to the change in dividend announcement position.

Regressions (2) and (3) in Table 5 present the regression results between change in dividend announcement position and firm characteristics when firms increase/decrease dividends. In regression (2), the

coefficient of SIZE is −0.119 and significant at the 5% level. In regression (3), the coefficients of ROA, SIZE, and FCF are −2.131, 0.064, and 5.553, and the p-values are 0.011, 0.037, and 0.011, which are significant at the 5% levels, respectively. Payout ratio and investments are not significant in both regressions. The results suggest that smaller firms that increase dividends tend to change dividend announcement position from the first announcer in (*t-1*) to a late announcer in (*t0*). Moreover, firms making dividend decrease announcements that are less profitable, larger in size, and have higher cash flows tend to change announcement position from the first announcer in (*t-1*) to a late announcer in (*t0*) in an industry.

6. CONCLUSION

This study addresses the strategic positioning of dividend announcements by changing the announcement order in an industry. We attempt to confirm whether externality exists when firms change dividend announcement position from the previous dividend season and how such externality affect firms' positioning of dividend announcements.

We find that firms that change dividend announcement position from a late announcer in (*t-1*) to the first announcer in (*t*–1) enjoy more favorable market reactions. This result confirms that some industry factors exist that commonly affect the value of firms in an industry and that information on these common factors is signaled

through the dividend announcement position change in an industry. We also observe higher market reactions for firms from a late to the first announcer regardless of dividend changes. This result indicates that the market prefers dividend announcement positioning regardless of dividend changes.

Lastly, we find that a firm's decision to change dividend announcement position from the first announcer in (*t-1*) to a late announcer in (*t0*) is closely related to firm's investment level, profitability, and cash flow. The result suggests that firms with high investments, low profits, and high cash flows are more likely to change dividend announcement position from the first announcer in a previous season (*t-1*) to a late announcer in (*t0*).

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