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Dividend Adjustment Speed of Diversified Corporate under Financial Constraints

Chanil Boo[1], Sooeun Kim[2]
[1](School of Global Finance and Management, Sangmyung University, Korea)
[2](School of Global Finance and Management, Sangmyung University, Korea)
Corresponding author: Sooeun Kim

Abstract: *In this study, I conduct an empirical analysis on the dividend adjustment speed of diversified corporates under financial constraints with corporates listed on KOSPI Stock Market at Korea Stock Exchange from Jan. 1, 2000 to Dec. 31, 2019. The main point is that a corporate has its target payout ratio and adjusted its dividend partially if its actual dividend tendency is deviated from its target payout ratio. And its dividend adjustment speed is principally devised by the previous dividend per share and the current profit per share, the core variables in Lintner's model and the proxy variables in the existing dividend theories - residual dividend theory, dividend signaling theory, agency theory, catering theory, and transaction cost theory, influenced limitedly on its dividend adjustment speed. The capital market accessibility, which is a financial constraints variable, has a significant effect on its dividend adjustment speed, the accessible corporate has much faster dividend adjustment speed than the inaccessible corporate towards capital markets. These results indicate that if its accessibility at capital markets is good, such corporate adjusts its dividend per share quickly to reach its target payout ratio due to the convenience of the external financing. In other words, the dividend adjustment speed is principally decided by the previous dividend per share and the current profit per share, and can be partially adjusted by its accessibility at capital markets. Credit ratings, which is a financial constraints variable, has a significant effect on its dividend adjustment speed as well. The dividend adjustment speed of the corporate with high credit ratings is faster than the corporate with low credit ratings. This result is a proof that if the corporate with high credit ratings is easy to maintain its stable dividend policy due to the external financing available at low cost. In other words, its dividend adjustment speed is principally prepared by the previous dividend per share and the current profit per share, but its dividend adjustment speed is partially adjusted by credit ratings.*

Key words: *Lintner's dividend adjustment model, target payout ratio, dividend adjustment speed, dividend per share, financial constraints*

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I. INTRODUCTION AND LITERATURE REVIEW

The dividend policy is one of corporate major policy variables along with investment and financing decisions. The executive is to plan its dividend policy as considering its growth & existence, dividend stability, and investors' manners towards the profitability of re-invested retained earnings comprehensively. If the re-investment return of retained earnings is exceeded the minimum rate, and stockholders' opportunity costs as business activities are favorable, stockholders want to re-invest by reserving dividend in a company instead of cash dividend payout. As the dividend policy of a company is a decision-making for sharing its net profit into cash dividend and retained earnings, the policy fits into financial policies to significantly influence on stockholders' wealth maximization. Lease et al. (1999) mentioned that the dividend policy of a company affects its investment and financing decision-making; ultimately, the policy affects its capital structure as well. If future investment funds are decreased due to the increase of its cash dividend by the policy, the issuance of new shares might be increased to supplement this decreased amount.

Since Miller and Modigliani (1961) asserted that corporate value is irrelevant to its dividend policy in perfect capital markets, numerous studies on the dividend policy lessened in perfect capital markets assumption have been reported. In actual capital markets, imperfect market drivers are existed such as tax, agency cost, transaction cost, and information asymmetry, etc. As considering these imperfect market drivers, diverse theories are suggested; residual dividend theory, dividend signaling theory, agency theory, catering theory, and transaction cost theory, etc. According to the residual dividend theory, a corporate reserves owner's equity required to maintain its optimal capital structure from profits available for its dividend at financing investment funds to successfully perform highly profitable investment plans, and pays the residual income by dividend if any unreserved profits are remained. In the dividend signaling theory, a corporate pays dividend as a means to

deliver the prominent information about its future value into markets under the information asymmetry. In the agency theory, a corporate pays dividend as a means to lessen agency issues between stockholders and the executive. In the catering theory, a corporate formulates as embracing requests for dividend by market participants. In the transaction cost theory, the dividend policy is irrelevant to its corporate value because investors could copy dividend for free by transactions at stock markets.

Lintner (1956) measured its dividend adjustment speed by a dividend adjustment model for the first time. He asserted the previous dividend per share and the current profit per share have effects on its dividend adjustment speed significantly with the occurrence of its dividend smoothing to adjust the partial dividend payouts if dividend payouts deviate from its target payout ratio due to "Regression toward the mean" attribute. Fudenberg and Tirole (1995) explained the theorical basis of this dividend smoothing occurrence by dividend adjustments. Fama and Babiak (1968) measured the dividend adjustment speeds of US companies; Behm and Zimmerman (1993) conducted an empirical study on the relationship between profits and dividend payouts of German companies; Goergen et al. (2005) measured the dividend adjustment speeds of German companies on a study of dividend adjustments. Adoaglu (2000) studied the instability in the dividend policy of companies listed on Turkey stock exchange market; Aivazion et al. (2003) measured dividend adjustment speeds in emerging markets on a study of "whether emerging markets corporates maintain their policies consistent to the US dividend policies. And Dewenter and Warther (1998) mentioned that stable dividend policies are important in the stock market centered US financial system more than the bank-centered Japan financial system. Aivazian et al. (2006) found that the dividend adjustment speed of a corporate with high credit ratings is faster than the one of a corporate with low credit ratings from the result of the analysis on the influence of credit ratings on the dividend adjustment speed by the dividend adjustment model of Lintner (1956).

In this study, the dividend adjustment speed is measured by Lintner's model and the extended model; the prior studies of the existing dividend theories and dividend decision variables are required to examine due to the use of dividend decision variables as control variables suggested in the existing dividend theories other than the previous dividend per share and the current profit per share suggested in Lintner's model. However, not only the existing dividend theories are very diverse, but also the explaining methods are different respectively, many cases of the empirical analysis results are in discord each other. Therefore, dividend policies fit into important financial policies in real, but there are unsolved mystical parts left in the dividend. Black (1976) said that the dividend policy is like a puzzle hard to fit; Brealey and Myers (2005) pointed that the dividend policy is one of 10 assignments difficult to settle in financial theories. In the residual dividend theory, a corporate pays its dividend from its cash balance after the satisfaction of investment demands. Bhattacharya (1979), John & Williams (1985), and Miller & Rock (1985) used the dividend as a signal of its cash flow level; on the other hand, Kale and Noe (1990) used the dividend as a signal of its cash flow distribution. Therefore, as any operation profit volatility or management risk are increased, they estimated this factor as a negative influence on dividend payouts. In the dividend signaling theory, Kale and Noe (1990) used the dividend as a signal of its cash flow distribution, they estimated it as a negative effect on dividend payouts due to the increase of any operation profit volatility or management risk. In the agency theory, Jensen (1986), Stulz (1990), and others mentioned that liabilities might be used as the means to control managerial opportunistic behaviors - excessive compensation, unnecessary staff secretary, excessive operational costs, luxury business trip, and other perquisite expenditures if free cash flow is decreased due to the increase on the cost of debt at the increase of leverage. Baker and Wurgler (2004) suggested catering theory; dividend formulates its payouts as accepting market participants' requests for dividend. They said that stock price is a tendency to be overvalued in an average dividend − paying a company than a non-dividend cohort, and the difference reflects its premium dividend; Miller and Modigliani (1961) suggested transaction cost theory; the dividend policy of a company is irrelevant to corporate value because investors could clone dividend for free by stock transactions.

In this study, I conduct an empirical analysis on the dividend adjustment speed of diversified corporates under financial constraints about a diversified corporate cohort listed in KOSPI Stock Market at Korea Stock Exchange from Jan. 1, 2000 to Dec. 31, 2019; the primary analysis results are as follows:

First of all, I analyze the influence of financial constraints on its dividend adjustment speed as utilizing Lintner's dividend adjustment model (hereinafter "Lintner's model") and the extended model - dividend adjustment model (hereinafter "the extended mode") (1956). In the extended model, I use proxy variables in the existing theories - residual dividend theory, dividend signaling theory, agency theory, catering theory, and transaction cost theory as control variables. I judge companies are under financial constraints or not by its capital market accessibility and credit ratings mainly used in the prior studies. In a nutshell, if any corporate has a good accessibility on capital markets or high credit ratings, such companies are assumed as under lesser financial constraints. In this study, corporates under lesser financial constraints are predicted faster dividend adjustment speeds than corporates under higher financial constraints, Furthermore, policy implications concerning dividend adjustments are suggested based on these analysis results.

II. MODELS AND VARIABLES

In this study, I analyze the dividend adjustment speeds of diversified corporates under financial constraints by utilizing Lintner's model. The most core point is that a corporate pays target dividend per share as the value in formula (1) (target payout ratio × earnings per share) under the assumption of the maintenance of constant target payout ratio. This means that if its current profit per share (EPS_t) is changed, its current dividend per share (DPS_t) is changed as well.[1] The model adjusted partially from Lintner's model is produced as in formula (4). In this study, formula (1) is estimated as follows;

$$DPS_t = \beta_0 + \beta_1 DPS_{t-1} + \beta_2 EPS_t + \varepsilon_t \quad (1)$$

But, $\beta_1 = 1 - \theta$

$\theta = 1 - \beta_1$

$\Omega = \beta_2/\theta = \beta_2/(1-\beta_1) \cong DPS_t^*/EPS_t$ = target payout ratio

T-year dividend per share (DPS_t) with the dependent variable in formula (1) is measured by [(t-year total dividend payouts)/ (t-year number of issued shares)], and t-year total dividend payout is measured by dividend and the alternative hypothesis of treasury stock purchase by Grullon and Michaely (2002) (t-year cash dividend amount + t-year treasury stock purchase price).

In this study, the dividend per share by Lintner's model is utilized as the dependent variable. And t-year dividend per share (DPS_t) is determined by two variables; t-1 year dividend per share (DPS_{t-1}) and t-year earnings per share (EPS_t). Through the regression analysis, if the regression coefficient (β_1) of dividend per share (DPS_{t-1}) in parallax 1 is estimated: dividend adjustment speed (θ) is measured by the value ($\theta = 1 - \beta_1$); dividend per share regression coefficient (β_1) subtracted from 1: and target payout ratio (Ω) is measured by $\beta_2/(1-\beta_1)$.

And formula (2) is a partially adjusted model extended from Lintner's model. In the extended model, the previous dividend per share and the current profit per share suggested in Lintner's model are utilized as descriptive variables, five dividend decision variables suggested in the existing dividend theories are utilized as control variables. In the existing dividend theories - residual dividend theory, dividend signaling theory, agency theory, catering theory, and transaction cost theory, diverse dividend decision variables explained its dividend policy are presented significantly, but in this study, representative five variables are used as the control variables of the extended model.

$$DPS_t = \beta_0 + \beta_1 DPS_{t-1} + \beta_2 EPS_t + \beta_3 LEV_t + \beta_4 ROA_t + \beta_5 RISK_t + \beta_6 TURN_t + \beta_7 DPREM_t + \varepsilon_t \quad (2)$$

But, LEV_t = t-year leverage ratio

ROA_t = t-year operation earnings ratio

$RISK_t$ = t-year management risk

$TURN_t$ = t-year turnover ratio

$DPREM_t$ = t-year premium dividend

First of all, leverage ratio (LEV_t) is as a proxy variable in residual dividend theory and agency theory, predicted as a negative effect on dividend payouts, measured by [(t − year total liabilities)/ (t − year total assets)]. Profitability ratio (ROA_t) is as a proxy variable in residual dividend theory, dividend signaling theory and agency theory, predicted as a positive effect on dividend payouts, gauged by [(t − year EBITDA)/ (t − year total asset)]. Management risk ($RISK_t$) is as a proxy variable in dividend signaling theory, predicted as a negative effect on dividend payouts, calculated by financial risk adjusted by CAPM in the model of Hamada (1972) among total risks in corporate [(t − year β coefficient) / {1+ (t − year total liabilities) / (t − year total owner's equities)}]. Turnover ratio ($TURN_t$) is as a proxy variable in transaction cost theory, predicted as a negative effect on dividend payouts, and commutated by [(t − year annual stock trading volume)/ (t − year total issued shares)]. Premium dividend ($DPREM_t$) is as a proxy variable in transaction cost theory, predicted as a positive effect on dividend payouts, determined by [ln (t − year an average dividend − paying company M/B

[1] For simplifying models and variables, year mark subscript (t) is indicated, and individual company mark subscript (i) is omitted.

ratio) - ln (t − year a non-dividend cohort M/B ratio mean)] by the methodology of Kale et al. (2006), and M/B ratio is assessed by [(t − year total liabilities + t − year owner's equity market value)/ (t − year total asset).

III. DATA AND DESCRIPTIVE STATISTICS

In this study, sample companies are selected by the following standards among a corporate cohort listed in KOSPI Stock Market at Korea Stock Exchange. First of all, companies without available data about finance & stock price from Jan. 1, 200 to Dec. 31, 2019 in KIS Value Library, FnGuide & TS2000 are excluded from sample companies with finance sectors related to bank, securities, insurance due to the difference from the general manufacturing industry. Secondly, companies delisted during this analysis period are excluded as well because of continuity issues on the financial data due to its merger or regulatory oversight object during this analysis period. In addition, according to the study of Grullon and Michaely (2002), share buyback and cash dividend are in substitutive relationship; in this study, share buyback is included in cash dividend. And companies with total assets less than one billion won or zero sales result are excluded from sample companies due to the risk of any occurrence of outliers on variables; to control the influence of outliers on this analysis result, each variable is winsorizing +/- 1%. The number of diversified corporates to satisfy the above conditions is 3,584. Diversified corporates define companies with more than two business divisions in different codes on Korean Standard Industry Classification (KSIC) (Tong, 2011). The diversified companies are classified into financially constrained group and financially unconstrained group. The sub-samples due to the accessibility on capital markets are classified as accessible corporates if new debt issue amount or new issued share price, debt redemption amount or capital decreased amount is more than 5% of total assets; otherwise, they are classified as inaccessible corporates by the methodology of Faulkender and Smith (2007); The sub-samples due to the credit ratings are classified as companies with high credit ratings and low credit ratings based on the median of Korea Investors Service Inc. by the methodology of Aivazian et al. (2006).

In <Table 1>, basic statistics are indicated by the mean, the standard deviation, and the median of characteristic variables in average dividend − payout company samples.[2] Such characteristic variables are used as descriptive variables and control variables for the analysis models (1) and (5). First of all, the mean of dividend per share (DPS) is 695 won, bigger than the median, 310 won; the mean of earnings per share (EPS) is 1,517 won, bigger than the median, 721 won. And the mean of leverage ratio (LEV) is 54.69%, bigger than the median, 52.08%; the mean of profitability ratio (ROA) is 12.57%, bigger than the median, 10.02%; the mean of management risk (RISK) is 0.3755, bigger than the median, 0.3486. The mean of turnover ratio (TURN) is 0.1965, bigger than the median, 0.1083; the mean of premium dividend (DPREM) is -0.0473, bigger than the median, -0.2017.

<Table 1> Basic statistical analysis

Variables		Diversified Corporate			
		Observation Number (n)	Mean	Standard Deviation	Median
DPS	dividend per share	3,958	0.6958	1.6258	0.3105
EPS	earnings per share	3,958	1.5174	2.0996	0.7210
LEV	leverage ratio	3,958	0.5469	0.2627	0.5205
ROA	profitability ratio	3,958	0.1257	0.0856	0.1002
RISK	management risk	3,958	0.3755	0.3104	0.3486
TURN	turnover ratio	3,958	0.1965	0.2783	0.1083
DPREM	premium dividend	3,958	-0.0473	0.6950	-0.2017

[2] In the process to interpret this analysis result, year mark subscript (t) on variables is omitted for the simplicity.

Footnote) The unit of dividend per share and earnings per share is 1,000 won.

In <Table 2>, the correlation among variables in average dividend − paying company samples is indicated by Pearson's correlation coefficient. Earnings per share (EPS) has a positive correlation with dividend per share (DPS) meaningfully at 1% level. Leverage ratio (LEV) has a negative correlation with dividend per share (DPS) significantly at 1% level; profitability ratio (ROA) a positive correlation suggestively at 1% level; management risk (RISK) a negative correlation pointedly at 1% level. Turnover ratio (TURN) has a negative correlation with dividend per share (DPS) expressively at 1% level; premium dividend (DPREM) has a positive correlation with dividend per share (DPS) knowingly at 5% level. These results are generally consistent with residual dividend theory, dividend signaling theory, agency theory, catering theory, and transaction cost theory. And the absolute value of correlation coefficient among independent variables does not give any cause for concern about multicollinearity (Kennedy, 1992). In addition, as the result of measurement of variance inflation factors (VIFs) of regression coefficient individually, the VIFs value of profitability ratio is the biggest as 1.42, but the scope is in the statistical acceptable range. Therefore, in this study, there is not to be concerned about multicollinearity, which is occurred in the regression analysis used financial variables quite often.

<Table 2> Correlation Analysis

	DPS	EPS	LEV	ROA	RISK	TURN	DPREM	VIF
DPS	1							
EPS	0.429**	1						1.156
LEV	-0.025**	-0.074**	1					1.328
ROA	0.058**	0.107**	-0.411**	1				1.421
RISK	-0.036**	-0.031*	-0.069**	0.124**	1			1.069
TURN	-0.139**	-0.130**	-0.055**	0.071**	0.149**	1		1.047
DPREM	0.030*	0.018*	-0.407**	0.463**	0.062**	0.134**	1	1.350

Footnote) **, * indicate that they are significant at 1%, 5% level respectively.

IV. EMPIRICAL RESULTS

In this study, the effect on its dividend adjustment speed of a company is analyzed by the capital market accessibility and credit ratings as proxy variables with financial constraint factor.

In <Table 3>, the analyzed result concerning the influence of its capital market accessibility on its dividend adjustment speed. In the analysis result of examining each dividend adjustment speed in a capital market accessible corporate sample group, the regression coefficients (β_1) of t-1 year dividend per share (DPS_{t-1}) are estimated as 0.176 and 0.284 in Lintner's model and the extended model respectively; and the dividend adjustment speeds ($\theta=1-\beta_1$) are estimated as 0.824 and 0.716 respectively. And the regression coefficients (β_2) of t-year earnings per share (EPS_t) are estimated as 0.062 and 0.046 in Lintner's model and the extended model respectively; and target payout ratios (Ω) are respectively measured as 0.075 and 0.064 by $\Omega = \beta_2 / (1-\beta_1)$. The meaning of 0.824 and 0.716 values in the dividend adjustment speed (θ) is that a gap between its target payout ratio and its actual dividend tendency adjusted about annually 82.4% and 71.6% respectively. And the regression coefficients (β_1) of t-1 year dividend per share (DPS_{t-1}) are 0.176 and 0.284 respectively, which are much higher values than the regression coefficients (β_2) of t-year earnings per share (EPS_t), 0.062 and 0.046; these values are a strong evidence that the previous dividend per share has much higher effect on its dividend adjustment speed than the current profit per share. Therefore, companies seem to prefer a stable dividend policy sustained the previous dividend per share level unless there is any special reason.

As examining the analysis result about 5 control variables in the extended model of the capital market accessible corporate samples, leverage ratio (LEV) has a negative effect on dividend per share (DPS) significantly at 5% level, and profitability ratio (ROA) has a positive effect on dividend per share (DPS) meaningfully at 1% level. Therefore, if its leverage ratio is increased as its interest expense is increased, the

dividend payout is decreased; however, if its cash balance is increased as its profitability is increased, the dividend payout is increased. Kale and Noe (1990), John and Williams (1985), and others mentioned, in a view of the dividend signaling theory, if any corporate with a high profitability has its dividend increased, it delivers into markets as a favorable factor about its future value; on the other hand, if any corporate with a high management risk has its dividend increased, it delivers into markets as an unfavorable factor about its future value. And turnover ratio (TURN) as a proxy variable in the transaction cost theory has a negative effect on dividend per share (DPS) significantly at 5% level. Therefore, if a corporate has a high flexibility at stock markets, its dividend is easier to be clone by transaction costs decreased, which leads its dividend payout to be decreased. Premium dividend (DPREM) has a positive effect on dividend per share (DPS) meaningly at 10% level. Therefore, if the stock price of an average dividend − paying company is increased more than a non-dividend cohort, the premium dividend of an average dividend − payout company should be naturally increased, investors demand dividend to be increased correspondingly. However, management risk (RISK) is not significant.

<Table 3> The influence of capital market accessibility on dividend adjustment speed

Variables		Corporate Diversification			
		Accessible Corporate		Inaccessible Corporate	
Variables Name	Coefficient	Lintner's model	extended model	Lintner's model	extended model
Constant	β_0	0.364*** (15.80)	0.369*** (3.86)	0.506*** (13.97)	0.511*** (4.55)
DPS_{t-1}	β_1	0.176*** (2.86)	0.284*** (3.07)	0.471*** (7.20)	0.529*** (7.06)
EPS_t	β_2	0.062*** (14.96)	0.046*** (6.96)	0.038*** (9.16)	0.040*** (9.19)
LEV_t	β_3		-0.188** (-2.33)		-0.194* (-1.70)
ROA_t	β_4		1.214*** (3.63)		0.326** (2.52)
$RISK_t$	β_5		-0.001 (1.08)		-0.002 (-1.43)
$TURN_t$	β_6		-0.104** (-2.49)		-0.243* (-1.85)
$DPREM_t$	β_7		0.096* (1.69)		0.066 (1.57)
adjusted speed (θ)	$1-\beta_1$	0.824	0.716	0.529	0.471
target payout ratio (Ω)	$\frac{\beta_2}{1-\beta_1}$	0.075	0.064	0.071	0.084
observation number (n)		894	894	2,690	2,690
$\text{Adjusted} - R^2$		0.4018	0.3668	0.4576	0.4480
$F - \text{value}$		159.10***	36.94***	78.36***	28.61***

Footnote ( ) indicates t-value, and ***, **, * indicates they are significant respectively at 1%, 5%, 10% level (both).

In comparison of the dividend adjustment speed between accessible corporate samples and inaccessible corporate samples towards capital markets, as the former group has 82.4% and 71.6% in Lintner's model and the extended model respectively, which are much faster than the latter, 52.9% and 47.1%. This result indicates evidence that as the capital market accessible corporate has lesser financial constraints due to the external financing available at capital markets, it may adjust its dividend per share swiftly to reach its target payout ratio. On the other hand, as the capital markets inaccessible corporate has more financial constraints due to the external financing difficulty at capital markets, it may not adjust its dividend per share swiftly. Therefore, if its capital market accessibility is good, the corporate is easy to maintain its stable dividend policy due to the external financing available at capital markets; on the other hand, if its capital market accessibility is not good, the consistency of its stable dividend policy is hard due to the inconvenient for the external financing.

In <Table 4>, the analyzed results indicate the influence of credit ratings on dividend adjustment speed. In the comparison of the dividend adjustment speed between a company with high credit ratings and a company with low credit ratings, the former has 82.4% and 70.5% in Lintner's model and the extended model respectively, which are much faster than the latter, 64% and 69.1%. These results indicate evidence that as the corporate with high credit ratings has lesser financial constraints due to the external financing available by its favorable credit, it may adjust its dividend per share swiftly to reach its target payout ratio. On the other hand, as the corporate with low credit ratings has more financial constraints due to the external financing struggle by its unfavorable credit, it may not adjust its dividend per share swiftly. Therefore, if the corporate with high credit ratings is easy to maintain its stable dividend policy due to the external financing available at low cost; on the other hand, if the corporate with low credit ratings, the consistency of its stable dividend policy is hard due to the inconvenient for the external financing. In other words, the corporate with high credit ratings is accessible for the swift dividend adjustment due to its favorable credit than the corporate with low credit ratings.

<Table 4> The influence of Credit ratings on dividend adjustment speed

Variables		Corporate Diversification			
		Corporate with high credit ratings		Corporate with low credit ratings	
Variable Name	Coefficient	Lintner's model	extended model	Lintner's model	extended model
Constant	β_0	0.419*** (7.43)	0.657*** (3.88)	0.355*** (13.86)	0.443* (1.73)
DPS_{t-1}	β_1	0.176*** (6.13)	0.295*** (6.44)	0.360*** (4.07)	0.309*** (6.59)
EPS_t	β_2	0.073*** (8.86)	0.069*** (7.99)	0.065*** (10.88)	0.050*** (4.63)
LEV_t	β_3		-0.658** (-2.08)		-0.152** (-2.49)
ROA_t	β_4		0.163*** (2.76)		1.055*** (3.24)
$RISK_t$	β_5		-0.004 (-1.50)		0.003 (1.46)
$TURN_t$	β_6		-0.394** (-2.01)		-0.231* (-1.77)
$DPREM_t$	β_7		0.042* (1.70)		0.038 (1.60)

adjusted speed (θ)	$1-\beta_1$	0.824	0.705	0.640	0.691
target payout ratio (Ω)	$\frac{\beta_2}{1-\beta_1}$	0.088	0.097	0.101	0.072
observation number (n)		1,792	1,792	1,792	1,792
$\text{Adjusted}-R^2$		0.4198	0.4086	0.3864	0.3687
$F-\text{value}$		89.15***	28.86***	74.93***	33.05***

Footnote ( ) indicates t-value, and ***, **, * indicates they are significant respectively at 1%, 5%, 10% level (both).

V. CONCLUSIONS AND DISCUSSION

In this study, I conduct an empirical analysis on the dividend adjustment speed of diversified corporates under financial constraints with corporates listed on KOSPI Stock Market at Korea Stock Exchange from Jan. 1, 2000 to Dec. 31, 2019. The main point is that a corporate has its target payout ratio and adjusted its dividend partially if its actual dividend tendency is deviated from its target payout ratio. And its dividend adjustment speed is principally devised by the previous dividend per share and the current profit per share, the core variables in Lintner's model and the proxy variables in the existing dividend theories - residual dividend theory, dividend signaling theory, agency theory, catering theory, and transaction cost theory, influenced limitedly on its dividend adjustment speed. The capital market accessibility, which is a financial constraints variable, has a significant effect on its dividend adjustment speed, the accessible corporate has much faster dividend adjustment speed than the inaccessible corporate towards capital markets. These results indicate that if its accessibility at capital markets is good, such corporate adjusts its dividend per share quickly to reach its target payout ratio due to the convenience of the external financing. In other words, the dividend adjustment speed is principally decided by the previous dividend per share and the current profit per share, and can be partially adjusted by its accessibility at capital markets. Credit ratings, which is a financial constraints variable, has a significant effect on its dividend adjustment speed as well. The dividend adjustment speed of the corporate with high credit ratings is faster than the corporate with low credit ratings. This result is a proof that if the corporate with high credit ratings is easy to maintain its stable dividend policy due to the external financing available at low cost. In other words, its dividend adjustment speed is principally prepared by the previous dividend per share and the current profit per share, but its dividend adjustment speed is partially adjusted by credit ratings.

In conclusion, Korean listed companies have their target payout ratios, and they are partially adjusted dividend if their actual dividend tendencies are deviated from their target payout ratios. And the dividend adjustment speed is mostly measured by Lintner's model, but that is partially adjusted by they are under financial constraints or not. Therefore, the executives believe that their stable dividend policies are maintained by the adjustment of dividend payouts as considering the dividend smoothing by Lintner's model and financial constraints comprehensively. However, in this study, only diversified corporates listed on KOSPI Stock Market at Korea Stock Exchange are used as the subjects, and this analysis is conducted on the companies selected by the strict sampling standards, which has many limitations for the generalization in interpretations about this analysis result. Thus, in the further studies, I think that sample corporates need to be extended by more advanced measurement methods on its target payout ratio & dividend adjustment speed with much diversified control variables & analysis methods.

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