

The Effect of Labor Union and its Power on Information Opacity: Evidence Based on Stock Price Crash Risk

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Abstract

This study investigates the effect of labor union and its power on information opacity. Given that the information opacity ultimately leads to the stock price crash, this study examines the relationship between labor unions and future stock price crash risk. Further, by assuming a strike by labor union as the actual power of the unionization in firms, whether labor union's power subrogated by the activity (i.e., a strike) makes a significant difference in the likelihood of future stock price crash between unionized firms is also examined. The work place survey data provided by Korea Labor Institute is used to test the hypotheses. The data is for the periods of 2004 - 2012 on firms listed on Korea Stock Exchange and KOSDAQ. The results show that while labor unionization has a positive impact on future stock price crash risk, on which labor union's power has a negative impact. This means that the existence of labor union itself might facilitate firm's information to be opaque by tolerating manager opportunism, while its power mitigates the managerial opportunism, which leads to lower future stock price crash risk. This study adds to the literature on the role of labor unions as nonfinancial stakeholders and its power in accounting environment, and also on the determinants of stock price crash. It is also valuable to examine the unions' role in terms of the economic consequences of both presence and power of the labor unions.

Key words: Labor Unions, Union's Power, Strike, Stock Price Crash Risk, Information Opacity, Stock Market

1. Introduction

Stock price crash is referred to as the state of extremely low returns compared to firm-based or market-based normal returns (Hutton et al. 2009, Chen et al. 2001, Kim et al. 2014). Since stock price crash event results in severe economic losses of individual firms and their investors, many researches seek to explore factors leading stock price crash. This study investigates how labor unions have an effect on future stock price crash risk in Korean stock market.

Labor unions, as a significant group of nonfinancial stakeholders, have received attention from academics and policymakers. Particularly, Korean labor unions are known for a long tradition of making credible threats through heavy labor disputes. This motivates the study to examine the implication of labor union and its activity on stock price crash. The activity represents the labor union's power, which determines their bargaining position (Myers and Saretto 2010). Given that the stock crash occurs due to managerial opportunism to withhold the firm's information (Jin and Myers 2006, Kothari et al. 2009), the activity of labor union as a determinant influencing managers' decision making (Faleye et al. 2006) is expected to have effect on the stock crash risk.

In this paper, I examine the relationship between the existence of labor union and the future stock price crash, and then investigate whether the strike as the proxy of the unions' power has a different effect from that of the labor existence on the future stock price crashes. Based on prior studies that shows the monitoring effect of labor union as well as union's collusion with manager, whether the existence of labor union has a positive or negative effect on the stock price crashes is open question. Also, how the labor union's power proxied by unions' strikes have an effect on the future crash risk is not expected. This study would answer to such research question in terms of the effect of labor union on information opacity in firms.

I test the hypotheses using work place survey data provided biyearly by Korea Labor Institute (www.kli.re.kr). The findings show the positive relation between the existence of labor union and future stock price crash risk, on which the union's power has a negative impact. This means that the existence of labor union itself might facilitate firm's information to be opaque by tolerating manager opportunism, while its power mitigates the managerial opportunism, which leads to lower future stock price crash risk. This study makes a several contributions to academic and practical fields in that this study adds to the literature on the role of labor unions in capital market, suggesting nonfinancial stakeholders and also their activity is related to stock

price crash risk. In addition, this study is practically important in that the economic consequence of unions' activities such as strikes helps market participants understand their target firms' value.

The remainder of this study consists of 4 sections. Section 2 introduces research background and hypotheses. In section 3, I provide the measurement of main test variables and specify the regression model. Then, section 4 shows the analysis results and finally section 5 concludes.

2. Research Background and Hypothesis Development

A few literature on the relationship between labor union and firm management documents that the unionized workers can play a stronger monitoring role in constraining managers' excess risk-taking decisions. As documented by Faleye et al. (2006) suggesting that employees are fixed claimants like debt-holders, the union members just receive a largely fixed payment, and do hardly benefit from improvements in firm's performance. Therefore, labor unions behave with a higher risk aversion than shareholders or managers, and try to protect shifts in wealth from fixed claimants by curving manager's inefficient investment decision (Chen et al. 2012). More importantly, the labor union can play a role in monitoring corporate policies and future plans sooner than shareholders (Schwab and Tomas 1998, Chyz et al. 2013). This is because the labor union, as an insider, is more easily accessible to information, as compared with outsiders, which prevents accumulation in the bad performance from manager's inefficient investment and reduces the likelihood of stock price crashes (Bleck and Liu, 2007).

However, the existence of labor union in organization is not absolutely effective in financial reporting. Some studies document that labor unions may collude with managers for private benefits and tolerate managerial opportunism (Pagano and Volpin, 2005; Cronqvist et al., 2009). Hilary (2006) argues that unionized firms often intentionally increase information asymmetry, which facilitates managerial bad news hoarding. Indeed, Chun and Shin (2017) document, using Korean labor union data, that managers collude with the labor union to receive cash-based bonus incentive and labor unions push managers to increase real earnings management, and it creates a favorable negotiation environment for wage maximization. This means that that the labor unions may also serve as a mediator to increase financial reporting opacity, which results in higher future stock price crash risk.

After all, the relationship between the stock price crash risk and labor union is not explained only by the existence of labor union.¹⁾ Here, I focus on labor unions' power in the unionized firms, and examine how labor union has an influence on the future stock price crash risk. The labor union's power is captured by the activity, which determines their bargaining position (Myers and Saretto 2010). The representative activity that reveals labor union's bargaining power is a strike. A strike is defined as a temporary suspension of work by workers claiming their demands for improvement of rights and interests. It is a representative industrial action, and through strikes, workers stop working away from the command and order of the user (Shin, 2003). This means that the strike works as a means of pressure for the user to actively engage in negotiations, representing the practical power of the labor union affecting the manager's decision.

Chun and Shin (2017) and Ahn et al. (2011), as the Korean evidence, show that the existence of labor union increases the financial reporting opacity. Since the stock price crashes occur largely due to the information asymmetry by manager's disclosure opacity (Jin and Myers 2006; Kothari et al. 2009), I expect that the existence of labor unionization is positively related to the future crash risk. However, based on prior studies that shows the monitoring effect of labor union, whether the existence of labor union still has a positive effect on the stock price crashes is open question. Also, how the labor union's power proxied by unions' strikes have an effect on the future crash risk is not expected. Accordingly, I form the null hypotheses as follows.

H1: The existence of labor union is not significantly associated with stock price crash risk.

H2: The labor union's power in unionized firm is not significantly associated with stock price crash risk.

1) There are some studies reporting that labor unionization strength as measured by the unionization rate is negatively related with future stock price crash in the perspective of the rent-seeker or monitoring role of labor union (Chen et al. 2017, Liao and Ouyang 2017), while Ben-Nasr et al. (2015) show the positive relation between them in the collusion perspective.

3. Methodology

3.1 Sample

The work place survey data provided by Korea Labor Institute (www.kli.re.kr) is used to test the hypotheses. The data is for periods of 2004 - 2012 on firms listed on Korea Stock Exchange (KSE) and KOSDAQ. The analysis is conducted with the observations which exclude the financial insurance industry and firms with non-December year end. For the test variables, financial data are retrieved from Data Guide Pro database provided by FnGuide (<http://www.fnguide.co.kr>). Restricted to the firm-years with non-missing data on financial variables, the final sample is 704 firm-year observations. Specifically, the sample shows firms with labor union accounting for 66.76% (470) of the total sample. Firms that experience a strike of labor union, 3.62% (17) of firms with labor union.

3.2 Test Model Specification

This study aims at examining the effect of the existence and also labor union's power, which is subrogated by a strike, on firm's future stock price crash. I test first whether the presence of labor union in firms makes a difference in firm's future stock price crash. Next, I investigate the relationship between the labor union's power and future stock crash risk, within unionized firms. First of all, I measure the stock price crash risk as a dependent variable. Hutton et al. (2009) defined stock price crash, assuming that firm-specific weekly returns follow normal distribution, as the event which firm-specific weekly returns belongs to less than 0.1% of their distribution occurs. I measure firm-specific weekly returns the residuals from estimation of equation (1), according to Hutton et al. (2009).

$$r_{j,t} = \alpha_0 + \alpha_1 r_{m,t-1} + \alpha_2 r_{m,t} + \alpha_3 r_{m,t+1} + \alpha_4 r_{ind,t-1} + \alpha_5 r_{ind,t} + \alpha_6 r_{ind,t+1} + \epsilon_{j,t} \quad (1)$$

$r_{j,t}$ = weekly returns for firm j and week t

$r_{m,t}$ = weekly returns for market of week t

$r_{ind,t}$ = weekly returns for industry to which firm i belongs of week t

Then, firm-specific weekly returns ($\epsilon_{j,t}$) is transformed to linear function form ($W_{j,t}$) as the equation (2). The crash is a binary measure coded 1 if a firm experiences 1 or more

firm-specific weekly returns falling at least 3.2 standard deviations below its mean value in a given year, and 0 otherwise.

$$W_{j,t} = \ln(1 + \epsilon_{j,t}) \quad (2)$$

The models for tests are as follows.

$$\begin{aligned} CRASH_{t+1} = & Const. + \beta_1 EXIST_t + \beta_2 CRASH_t + \beta_3 DTURN_t + \beta_4 STEDRET_t + \beta_5 MRET_t \\ & + \beta_6 SIZE_t + \beta_7 MB_t + \beta_8 LEV_t + \beta_9 SDA_t + LIST + \sum YEAR Dummy \\ & + \sum INDUSTRY Dummy + \varepsilon \end{aligned} \quad (3)$$

$$\begin{aligned} CRASH_{t+1} = & Const. + \beta_1 POWER_t + \beta_2 CRASH_t + \beta_3 DTURN_t + \beta_4 STEDRET_t + \beta_5 MRET_t \\ & + \beta_6 SIZE_t + \beta_7 MB_t + \beta_8 LEV_t + \beta_9 SDA_t + LIST + \sum YEAR Dummy \\ & + \sum INDUSTRY Dummy + \varepsilon \end{aligned} \quad (4)$$

Where,

- CRASH = Crash risk measure (indicator) estimated from Hutton et al.(2009) model;
- EXIST = 1 if firms allow the union, 0 otherwise;
- POWER = 1 if firms experience a strike within unionized firms, 0 otherwise;
- DTURN = Average monthly share turnover over the current fiscal-year period minus the average monthly share turnover over the previous fiscal-year period, where monthly share turnover is calculated as the monthly trading volume divided by the total number of shares outstanding during the month;
- STDRET = Standard deviation of firm-specific weekly returns over the fiscal-year period;
- MRET = Mean of firm-specific weekly returns over the fiscal-year period, times 100;
- SIZE = Firms size, measured as the logarithms of total assets;
- MB = Firm growth, measured as market value to book value ratio;
- LEV = Firms leverage , measured as debt to total assets ratio;
- ROA = Return on assets, measured as net income divided by average total assets;
- SDA = Average absolute discretionary accruals over the past three years, where discretionary accruals are estimated from the modified Jones model (Dechow et al., 1995).

The subscripts js (firm) are omitted from all variables.

The interesting independent variables are EXIST in equation (3) and POWER in equation (4). EXIST denotes the indicator variable of the unionized firms and POWER denotes the firms facing a strike within unionized firms. These models include several factors (i.e., DTURN, CRASH, STDRET, MRET, SIZE, MB, LEV, ROA, SDA) affecting stock price cash risk documented in prior studies (Chen et al. 2001; Hutton et al. 2009; Dechow et al. 1995). A one-year lag between dependent variables and independent variables are imposed in the models to test whether EXIST or POWER of year $t-1$ are associated with stock price crash risk of year t . All reported t -values are based on robust standard errors corrected for firm and year clustering to alleviate concern about potential cross-sectional and time-series dependence in the data (Petersen 2009).

4. Empirical Results

4.1 Descriptive Statistics

<Table 1> presents the descriptive statistics of the test variables. For the main variables, the mean values of EXIST and POWER are 0.668 and 0.024, respectively, indicating the percentage of respective variables in pooled sample (i.e., 704). The mean value of 0.121 for

<Table 1> Descriptive Statistics (n=704)

Variables	Min	1%p	1Q	Mean	Median	3Q	99%p	Max	Std. Dev
EXIST	0.000	0.000	0.000	0.668	1.000	1.000	1.000	1.000	0.471
POWER	0.000	0.000	0.000	0.024	0.000	0.000	1.000	1.000	0.154
CRASH	0.000	0.000	0.000	0.121	0.000	0.000	1.000	1.000	0.326
DTURN	-0.072	-0.072	-0.003	-0.002	0.000	0.001	0.057	0.057	0.014
STDRET	2.244	2.244	4.468	6.076	5.555	7.158	14.838	14.838	2.364
MRET	-1.519	-1.519	-0.199	0.375	0.283	0.819	3.208	3.208	0.868
SIZE	22.970	22.970	24.883	26.283	26.017	27.478	31.131	31.131	1.845
MB	0.183	0.183	0.522	1.113	0.844	1.379	5.865	5.865	0.931
LEV	0.096	0.096	0.348	0.479	0.492	0.615	0.867	0.867	0.182
ROA	-0.204	-0.204	0.011	0.049	0.046	0.087	0.284	0.284	0.076
SDA	-0.490	-0.490	-0.135	-0.044	-0.044	0.049	0.392	0.392	0.150
LIST	0.000	0.000	0.000	0.739	1.000	1.000	1.000	1.000	0.440

CRASH indicates firm-year observations with stock price crash account for 12.1% of total sample.

Definitions of variables:

- CRASH = Crash risk measure (indicator) estimated from Hutton et al.(2009) model;
- EXIST = 1 if firms are unionized, 0 otherwise;
- POWER = 1 if firms experience a strike within unionized firms, 0 otherwise;
- DTURN = Average monthly share turnover over the current fiscal-year period minus the average monthly share turnover over the previous fiscal-year period, where monthly share turnover is calculated as the monthly trading volume divided by the total number of shares outstanding during the month;
- STDRET = Standard deviation of firm-specific weekly returns over the fiscal-year period;
- MRET = Mean of firm-specific weekly returns over the fiscal-year period, times100;
- SIZE = Firms size, measured as the logarithms of total assets;
- MB = Firm growth, measured as market value to book value ratio;
- LEV = Firms leverage, measured as debt to total assets ratio;
- ROA = Return on assets, measured as net income divided by average total assets;
- SDA = Average absolute discretionary accruals over the past three years, where discretionary accruals are estimated from the modified Jones model (Dechow et al., 1995).

The subscripts j_s (firm) are omitted from all variables.

4.2 Correlation Analysis Result

<Table 2> presents the results of both Pearson and Spearman correlation analysis. While EXIST is positively correlated with future stock price crash risk ($CRASH_{t+1}$), POWER is negatively correlated with $CRASH_{t+1}$, similar to the difference test results showing higher crash risk in firms with strikes. Specifically, the coefficient is 0.039 for EXIST and -0.058 for POWER, respectively, but both are not statistically significant. In the next section, I examine more elaborately the relation among them by using the mean difference test and multiple regression analysis.

<Table 2> Correlation Analysis Results

	EXIST	POWER	CRASH _{t+1}
EXIST	1.000	0.111 (0.003)	0.039 (0.297)
POWER	0.111 (0.003)	1.000	-0.058 (0.122)
CRASH _{t+1}	0.039 (0.297)	-0.058 (0.122)	1.000

The Pearson correlation coefficients () are indicated on the left and Spearman coefficients () on the right of the empty diagonal. The figures in parentheses are t -values. Variables are defined in <Table 1>. The subscripts js (firm) are omitted from all variables.

<Table 3> provides the test result on the difference in firm characteristics between unionized firms and non-unionized firms and also between firms with - strikes and -non-strikes. With respect to CRASH, unionized - and non- unionized firms are statistically not different, but within unionized firms, the likelihood of future stock price crash of a strike and non-strike appears different. While the frequency of the crash in firms with non-strikes makes up about 9% of labor unionized firms, that in firms with strikes is 0%. The statistical significance of the difference also shows t -value of -4.65, significant at 1% level.

4.3 Regression Analysis Results

In this section, a multiple regression for test the hypothesis is implemented to investigate more elaborately the relation between the existence of labor union or the union's power, and the crash risk. <Table 4> provides test results, showing the impact of the presence of labor union on

<Table 3> Mean Difference Test

Variables	Pooled Sample			Within Unionized firms		
	Union (a)	Non- (b)	t -value (a-b)	Strike (a)	Non- (b)	t -value (a-b)
CRASH	0.1298	0.1026	1.08	0.000	0.0927	-4.65 ***
#. Of Obs.	470	234		17	205 ^{b)}	

a) This table reports the mean difference test results on test variables across unionized - vs. non-unionized firms or strike experiencing - vs. non-strike experiencing firms. The t -value represents the statistical significance of mean difference. Variables are defined in <Table 1>. The notations ***, **, and * denote two-tailed significance levels of 0.01, 0.05, and 0.10, respectively.

b) The figures in this column indicate the number of respondents on the strike within unionized firms.

future stock crash risk in the left column (i.e., Equation (3)) and that the union’s power in the right one (i.e., Equation (4)). The result shows that unionized firms have higher likelihood of stock price crash than non-unionized firms, consistent with Ben-Nasr et al. (2015). The coefficient of EXIST is 0.5968 and significant at 10% level (robust t-statistic=1.84). This means that the stock price crash is likely to occur in firms with the labor union. However, the likelihood of stock price crash in the unionized firms is different in the power of the labor union subrogated by the strike. POWER shows significantly negative coefficient of -6.3842 (robust t-statistic=-3.54), indicating that firms facing strikes shows lower likelihood of stock price crash in the future within unionized firms. Taken together, this suggests that the labor union is not good at playing a monitoring role in manager’s disclosure or seems to collude with managers

<Table 4> Regression Analysis Results

Dependent variable = CRASH_{t+1}

	Model: Equation (3)		Model: Equation (4)	
	Coefficient	t-value	Coefficient	t-value
Const.	-2.0263	-1.10	-14.2552	-2.29 **
EXIST	0.5968	1.84 *		
POWER			-6.3842	-3.54 ***
CRASH	-0.9563	-2.15 **	0.9264	0.68
DTURN	-15.0014	-2.00 **	-34.5256	-1.95 *
STDRET	-0.0412	-0.57	0.2098	1.04
MRET	-0.2378	-1.28	-0.9976	-1.83
SIZE	0.0015	0.02	0.3924	1.78 *
MB	0.2295	1.49	0.473	1.20
LEV	-0.4286	-0.45	0.7364	0.29
ROA	0.0162	0.01	-2.8079	-0.27
SDA	0.9338	1.16	2.8361	1.20
LIST	0.0101	0.03	0.0001	0.00
Year FE	YES		YES	
Industry FE	YES		YES	
Firm clust.SE	YES		YES	
R-sq	0.0605		0.1910	
#. Of Obs.	704		222	

- 1) The notations ***, **, and * denote two-tailed significance levels of 0.01, 0.05, and 0.10, respectively. Statistical significance of estimated coefficient is based on firm clustered standard error.
- 2) Please refer to <Table 1> for definitions of variables. The subscripts js (firm) are omitted from all variables.

for its benefits, but it can mitigate the manager's opportunism by relying on its power through the influential activity (i.e., strike) affecting manager's decision making, resulting in lower future crash risk.

However, a crucial issue for the test of the effects of labor unionization is self-selection. The issue is that firms self-select as unionized firms vs. non-unionized firms based on factors that are associated with the relation between future stock price crash and labor unionization. Although not tabulated, the correlation analysis or mean difference test results show that unionized firms have larger size, higher leverage, and more volatile firms in returns than non-unionized firms. To control for the endogeneity, I estimate the test models using the

<Table 5> Regression Analysis Results with Endogeneity Issue

Dependent variable = CRASH_{t+1}

	Model: Equation (3) with IMR		Model: Equation (4) with IMR	
	Coefficient	t-value	Coefficient	t-value
Const.	7.0920	0.60	353.7000	0.61 **
EXIST	0.5715	1.77 *		
POWER			-6.5336	-3.70 ***
CRASH	-0.9567	-2.16 **	0.8878	0.66
DTURN	-16.3638	-2.09 **	-37.5757	-1.92 *
STDRET	-0.0364	-0.50	0.1986	0.90
MRET	-0.2476	-1.34	-0.9876	-1.77 *
SIZE	-0.2833	-0.77	-7.6496	-0.60
MB	0.5848	1.27	13.5538	0.65
LEV	-1.7520	-0.91	-42.5973	-0.62
ROA	-0.6226	-0.28	-41.0633	-0.64
SDA	0.9649	1.18	3.1747	1.24
IMR	-2.4192	-0.76	-60.9261	-0.63
LIST	-0.0449	-0.12	-0.0413	-0.03
Year FE	YES		YES	
Industry FE	YES		YES	
Firm clust.SE	YES		YES	
R-sq	0.0614		0.1922	
#. Of Obs.	704		222	

1) The notations ***, **, and * denote two-tailed significance levels of 0.01, 0.05, and 0.10, respectively.

Statistical significance of estimated coefficient is based on firm clustered standard error.

2) Please refer to <Table 1> for definitions of variables. The subscripts js (firm) are omitted from all variables.

two-stage approach of Heckman (1979).

In the first stage, the unionization choice equation is estimated as a Probit model and, using the parameters from this model, the inverse Mills ratio is computed for all firms. In the second stage, the stock crash regression is estimated, including the inverse Mills ratio as a control, and allowing its coefficient to vary between the two groups. Similar to this, I apply this methodology to estimate the test model with strikes. <Table 5> provides the results, showing that the main findings still hold even after controlling for the endogeneity.

4.4 Additional Analysis

In this section, a regression analysis on an equation including both EXIST and POWER by using pooled sample is conducted. This analysis is required to test whether the effect of the labor union’s power on stock price crash risk is different from that of the existence of labor union. Although the results in section 4.2 and 4.3 show the effect of EXIST and POWER by analyzing each equation model, the individual estimation limits the presentation of the relation between the effects of them. <Table 6> show the regression results, showing the positive coefficient of EXIST (0.6083, t-value= 1.89) and the negative coefficient of POWER (-12.9290, t-value=-23.75). It indicates that POWER lowers incrementally the future stock crash risk on which the labor unionization has an impact compared to non-unionization in firms.

<Table 6> The Effect of Labor Union and the Union’s Power on Future Stock Price Crash Risk

Dependent variable = CRASH_{t+1}

	Coefficient	t-value
Const.	-2.4272	-1.30
EXIST	0.6083	1.89 *
POWER	-12.9290	-23.75 ***
Control Variables	Included	Included
Year FE		YES
Industry FE		YES
Firm clust.SE		YES
R-sq		0.0654
#. Of Obs.		704

5. Conclusion

Based on the notion that labor union's activities such as a strike by labor union indeed represents the power of unionization in firms, I examine the relationship between labor unions and future stock price crash risk, and more importantly, whether the union's power subrogated by a strike has an effect on the likelihood of future stock price crash within unionized firms. Using the work place survey data of 704 firm-year observations for the periods of 2004-2012, I find that labor unionization itself is positively associated with future stock price crash risk, but on which a strike has a negative impact within unionized firms. These results indicate that the union's activity (i.e., a strike) as a proxy for the labor union's power may mitigate the increased stock price crash risk in unionized firms in Korea stock market. Thus, this study suggests that while labor unions may collude with managers for their better benefits by tolerating manager's opportunism in general, labor unions who exercise their power through the activity such as a strike may mitigate the managerial opportunism, which leads to lower future stock price crash risk.

This study contributes to the academic and practical fields. This study adds to the literature on the role of labor union as a stakeholder in accounting environment, by suggesting not only the existence of labor union as one of the nonfinancial stakeholders but its power is related to stock price crash risk. Moreover, the finding that the stock price crash risk in unionized firms differs in unions' power helps market participants understand their target firms' value. However, there's also a limitation in this study in that the data reliability problem can be raised because of using survey data and it needs to concern the endogeneity problem with regard to the willingness to response by respondents or firm characteristics. Also, the analysis period needs to be extended further to generalize the research findings.

Reference

- [1] Ahn, T., Shim, H., and Park, J., 2011, "The impact of labor union on the frequency of information disclosed under fair disclosure system", *Korean Accounting Review*, 36(4), pp. 55~94.
- [2] Ben-Nasr, H., Al-Dahmash, A., and Ghouma, H., 2015, "Do labor unions affect stock price crash risk?" *International Journal of Financial Research*, 6(2), pp. 11~22.
- [3] Bleck, A., and Liu, X., 2007, "Market transparency and the accounting regime", *Journal of Accounting Research*, 45, pp. 229~256.
- [4] Chen, J., Hong, H., and Stein, J., 2001, "Forecasting crashes: Trading volume, past returns, and conditional skewness in stock prices", *Journal of Financial Economics*, 61, pp. 345~381.
- [5] Chen, H. J., Kacperczyk, M., and Ortiz-Molina, H., 2012, "Do nonfinancial stakeholders affect the pricing of risky debt? Evidence from unionized workers", *Review of Finance*, 16, pp. 347-383.
- [6] Chun, H. M., and Shin, S. Y., 2017. "Labor union and real earnings management", *Global Business and Finance Review*, 22(4), pp. 30~49.
- [7] Chyz, J., Leung, W., Li, O., and Rui, O., 2013, "Labor unions and tax aggressiveness", *Journal of Financial Economics*, 108, pp. 675~698.
- [8] Cronqvist, H., Heyman, F., Nilsson, M., Svaleryd, H., and Vlachos, J., 2009, "Do entrenched managers pay their workers more?" *The Journal of Finance*, 64(1), pp. 309~339.
- [9] Dechow, P. M., Sloan, R. G., and Sweeney, A. P., 1995, "Detecting earnings management", *The Accounting review*, 70(2), pp. 193~225.
- [10] Faleye, O., Mehrotra, V., Morck, R., 2006, "When labor has a voice in corporate governance", *Journal of Financial and Quantitative Analysis*, 41, pp. 489~510.
- [11] Heckman, J., 1979, "Sample selection bias as a specification error", *Econometrica*, 47(1), pp. 153~161.
- [12] Hilary, G., 2006, "Organized labor and information asymmetry in the financial markets" *Review of Accounting Studies*, 11, pp. 525~548.
- [13] Hutton, A., Marcus, A., and Tehranian, H., 2009, "Opaque financial reports, R², and crash

- risk”, *Journal of Financial Economics*, 94, pp. 67~86.
- [14] Jin, L., and Myers, C., 2006, “R² around the world: New theory and new tests” *Journal of Financial Economics*, 79, pp. 257~292.
- [15] Kim, Y., Li, H., and Li, S., 2014, “Corporate social responsibility and stock price crash risk”, *Journal of Banking and Finance*, 43, pp. 1~13.
- [16] Kothari, S., Shu, S., Wysocki, P., 2009, “Do managers withhold bad news?” *Journal of Accounting Research*, 47, pp. 241~276.
- [17] Myers, B. W., and Saretto, A., 2010, “Union strikes and the impact of non-financial stakeholders on capital structure”. SSRN eLibrary.
- [18] Pagano, M., and Volpin, P. F., 2005, “The political economy of corporate governance”, *The American Economic Review*, 95(4), pp. 1005~1030.
- [19] Petersen, M., 2009, “Estimating standard errors in finance panel sets: Comparing approaches.” *Review of Financial Studies*, 22, pp. 435~480.
- [20] Schwab, S. J., Thomas, R., 1998, “Realigning corporate governance: Shareholder activism by labor unions”, *Michigan Law Review*, 96(4), pp. 1018~1094.
- [21] Shin, C. W., 2003, *Human Resource Management*. SamyoungSA, Seoul.

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