Related-party transactions and post-earnings announcement drift: Evidence from the Korean stock market

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A B S T R A C T

Post-earnings announcement drift (PEAD) is a market anomaly that contradicts the efficient market hypothesis, which assumes that all publicly available information is reflected in security prices. This study uses multivariate regression analysis to examine the effect of disclosing related-party transactions on PEAD. The empirical results show that greater related-party transactions increase the magnitude of PEAD. This positive association is more pronounced in Korean chaebol firms than in non-chaebol firms. The results suggest that investors have difficulty understanding earnings news of chaebol firms involved in related-party transactions due to their unique and complex corporate governance structure. This study contributes to the literature by showing that there is high information asymmetry between firms and outside investors regarding related-party transactions in chaebol firms; as a result, investors underreact to firms' earnings information.

1. Introduction

Post-earnings announcement drift (PEAD) refers to the tendency for a stock's cumulative abnormal returns to continue to drift after an earnings announcement in the direction of unexpected earnings (Bernard and Thomas, 1990). This market anomaly contradicts the efficient market hypothesis, which assumes that all publicly available information is reflected in security prices. Previous studies document that PEAD is primarily caused by investors underreacting to new financial information because they do not fully understand the information about a firm's future earnings (Freeman and Tse, 1990). Moreover, investor underreaction increases when firms incorporate less transparent future earnings information in unexpected earnings (Soffer and Lys, 1999; Louis and Sun, 2011).

We investigate investors' response to transactions among the firm's related-parties to examine if such transactions affect PEAD because a firm's information environment is an important factor (Foster et al., 1984; Bartov et al., 2000). Related-party transactions are defined as transactions between a firm and its principal shareholders, directors, and affiliated companies. Compared to arm's length transactions in which both the buyer and seller are independent, related-party transactions are arbitrary and one party is likely to influence the other (Jian and Wong, 2010). Moreover, there is no disclosure of the detailed terms and conditions of each related party's business. Therefore, related-party transactions increase information asymmetry between firms and outside investors (Lee et al., 2016). Jian and Wong (2010) document that firms disclosing higher levels of related-party sales have incentives to inflate earnings to avoid being delisted or restricted from issuing new equity.

Considering that outside investors have insufficient information about related-party transactions and, unlike firms, do not fully

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understand the transaction information, we use Korean firm data to investigate whether firms that disclose related-party transactions experience stronger PEAD. This study focuses on chaebols, which is the term used for large business conglomerates in Korea. These firms have many affiliated companies which allows for more related-party transactions. Further, chaebols have pyramidal and circular ownership structure, which is controlled by members of a founding family[1] along with cross-shareholdings among the firms that belong to the larger business group. Due to this complex governance structure, outside investors have difficulty monitoring and controlling the firms' internal business decisions (Bae et al., 2002; Kim and Yi, 2006). Hence, we expect that related-party transactions in chaebol firms significantly increase PEAD as investors have difficulty interpreting the earnings news of such firms.

The empirical results of 1,286 firm-year observations for 2015–2018 show that related-party transactions increase the magnitude of PEAD. This magnitude is greater for related-party transactions of chaebol firms than non-chaebol firms. The finding suggests that investors do not fully understand the information conveyed in the related-party transactions of chaebol firms; thus, they underreact to earnings news after earnings announcements. Additional analysis reveals a significantly positive association between related-party transactions and PEAD when actual earnings are lower than expected earnings. It also reveals investors' underreaction to unexpected negative earnings of chaebol firms with related-party transactions. Further analyses show that an alternative measure of PEAD enhances the robustness of this study's results.

This study makes the following contributions to the extant literature. First, it adds to the growing research investigating the determinants of PEAD with additional evidence on investors underreaction to earnings news of firms with active related-party transactions. Second, this study shows the pronounced positive association between related-party transactions and PEAD in chaebol firms. Using Korean firm data, our study suggests that investors' delayed reactions to related-party transactions are more pronounced in unique corporate governance settings, as in chaebol firms.

The remainder of the paper is organized as follows. Section 2 presents the literature review. Section 3 provides the study's two main hypotheses and describes the sample selection process and research design. Section 4 presents the main empirical results, and Section 5 concludes.

2. Literature review

2.1. Related-party transactions

Researches examining related-party transactions document that controlling shareholders can expropriate wealth from minority shareholders in companies with concentrated ownership. Related-party transactions could destroy firm value because they are caused by conflict of interest between controlling shareholders and minority shareholders (Shin and Park, 1999; Chang and Hong, 2000; Johnson et al., 2000). Cheung et al. (2006) find that firms listed on the Hong Kong stock market experience higher negative abnormal stock returns when they disclose related-party transactions, indicating that the market assigns lower values to such firms. In the U.S., related-party transactions are negatively associated with current and future market prices (Gordon et al., 2004; Kohlbeck and Mayhew, 2010).

Prior studies document that firms have incentives to utilize related-party transactions to manipulate earnings because a firm can exert considerable influence on its affiliated firms. Jian and Wong (2010) report that firms listed in China use related sales to prop up earnings. Kim and Yi (2006) reveal that related-party transactions are an example of opportunistic earnings management that benefits controlling shareholders.

2.2. Post-earnings announcement drift (PEAD)

PEAD indicates positive (negative) earnings surprise to result in an upward (downward) drift in cumulative abnormal returns after an earnings announcement. PEAD is caused by investor underreaction to earnings surprises that provide information about firms' future earnings (Ball and Bartov, 1996; Soffer and Lys, 1999).

Predominant literature show that firms' information environment is a critical factor that impacts PEAD. Mikhail et al. (2003) report that firms followed by experienced analysts issuing earnings forecast have lower PEAD. Bartov et al. (2000) show that firms with high institutional ownership, representing sophisticated investors who have competitive advantage in processing earnings information, experience lower magnitude of PEAD. Louis and Sun (2011) argue that earnings management is likely to be associated with the market's delayed response to earnings news.

3. Hypotheses development and Research design

3.1. Hypotheses development

As prior studies suggest that related-party transactions are internal transactions between a firm and its affiliated parties, detailed information about related-party transactions is not available to outside investors. This leads to increased information asymmetry between the firms and outside shareholders. Therefore, it is highly likely that investors experience difficulty in interpreting earnings

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[1] Annually, the Korea Fair Trade Commission (KFTC) announces a list of large business groups whose assets are worth more than KRW 10 trillion. The firms included in the list are faced with greater anti-trust scrutiny in their intra-group transactions and have more disclosure requirements.

information of firms that disclose related-party transactions, resulting in a greater magnitude of PEAD. Firms that provide quantitatively and qualitatively less information to investors are more likely to have an increased PEAD.

Based on the evidence that PEAD is amplified in an information environment that is inadequate to predict future earnings, we expect that firms involved in related-party transactions show a greater magnitude of PEAD. Outside investors are likely to have difficulty interpreting earnings news of firms with related-party transactions as they lack sufficient detailed information. Therefore, we hypothesize that greater related-party transactions increase the magnitude of PEAD.

Hypothesis 1. Related-party transactions are positively associated with the magnitude of PEAD.

The complex ownership structure of a chaebol allows few controlling shareholders to exert full control over all affiliated firms although they have a relatively small portion of cash flow rights (Claessens et al., 2000; Kim and Lee, 2003; Hwang et al., 2013).[2] In particular, chaebol firms utilize related-party transactions for tunneling, in which minority shareholders' wealth is transferred to controlling shareholders (Bae et al., 2002; Baek et al., 2006; Jiang et al., 2010). Further, this corporate governance structure makes it difficult for outside stakeholders to monitor internal business decisions (Bae et al., 2002; Kim and Yi, 2006). Due to the presence of many affiliated companies, related-party transactions in chaebol firms are likely to trigger increased information asymmetry. Based on this, we predict that investors will experience difficulty in interpreting earnings news of chaebol firms with related-party transactions than non-chaebol firms with related-party transactions. Investors would be unable to quickly respond to the earnings news, resulting in PEAD. Therefore, we hypothesize that related-party transactions produce greater PEAD in chaebol firms than in non-chaebol firms.

Hypothesis 2. The positive association between related-party transactions and the magnitude of PEAD is stronger in chaebols.

3.2. Sample selection

The study sample consists of Korean firms listed on the Korean Stock Exchange from 2015–2018. To select chaebols, we use the Korea Fair Trade Commission's annual list of large business groups, which is based on total assets and includes firms affiliated with large business groups. We extract financial and stock return data from the KISValue database provided by Korea Investors Services. We obtain analyst forecast data from FnGuide and collect earnings announcement dates from the Financial Supervisory Service in Korea. Moreover, we include companies that close their accounts in December. Financial firms and firms missing analyst forecast and earnings announcement data are eliminated. The final sample yields 1,286 firm-year observations, which are winsorized at the top and bottom 1% to eliminate the effect of outliers.

3.3. Regression model

To investigate the impact of related-party transactions on PEAD, we estimate the following regression model:

$$CAR_{it}(n) = \beta_0 + \beta_1 SUE + \beta_2 SUE \times RPT + ControlTerms + Industry\&YearDummy + \in \tag{1}$$

where CAR measures the cumulative abnormal return after the annual earnings announcement. Specifically, CAR is the sum of a firm's daily abnormal returns over the 60 days starting from the day after the earnings announcement; we also compute CAR over 90 and 120 trading-day intervals to examine if the drift exists in longer periods. Consistent with previous studies of drift, the daily abnormal return is calculated as the difference between a firm's daily return, and the daily market return computed using the value weighted index.

The variable SUE represents standardized unexpected earnings. First, we compute unexpected earnings as the actual earnings per share minus the one-month-ahead mean analyst forecast of earnings per share reported in the annual earnings announcement.[3] Subsequently, SUE is divided by the adjusted closing stock price. RPT is a proxy for related-party transactions. Moreover, we include the control variables affecting PEAD that were highlighted in prior literature. Firm-specific characteristics such as firm size (SIZE), financial leverage (LEV), and the market-to-book ratio (MB) are controlled, as well as the value of abnormal accruals (ABAC), number of analysts following a firm (ANAL), and LOSS, which equals 1 if a firm incurs a loss and 0 otherwise. The regression model also includes controls for year and industry-fixed effects.

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[2] Cash flow rights are shares directly controlled by controlling shareholders and indicate claims on profits or dividends.

[3] We compute unexpected earnings by using annual earnings. In Korea, quarterly earnings are not audited, and only annual earnings are audited by auditors. To retain reliable earnings data to calculate SUE, we use annual earnings instead of quarterly earnings. Further, quarterly earnings forecasts are rarely issued in Korean stock market, except for large companies. Thus, annual earnings forecasts are used to measure SUE to obtain sufficient data. Finally, earnings announcement and shareholders' meeting announcement share the same date, when firms publicly disclose condensed financial statements through electronic system called Data Analysis, Retrieval and Transfer System (DART) provided by the Financial Supervisory Service in Korea. Condensed financial statements are reported on the day of shareholders' meeting announcement annually; therefore, we use yearly earnings to compute SUE (Na and Shin, 2013; Choi and Park, 2017; Lee et al. 2011).

4. Empirical results

4.1. Univariate tests

Table 1 reports the descriptive statistics for the variables used in our main regression analysis. The mean (median) values for daily abnormal returns over the 60 (CAR(60)), 90 (CAR(90)), and 120 trading days (CAR(120)) subsequent to earnings announcements show that most sample firms here have negative stock returns. The mean of unexpected earnings (SUE) is consistent with the optimistic forecasts from analysts.

4.2. Multivariate analysis

Table 2 presents the results of the regression model used to investigate if related-party transactions increase PEAD. Columns 1 through 3 report the regression results when RPT1 is used as the independent variable. Columns 4 through 6 use RPT2, while columns 7 through 9 use RPT3. Across all models, the estimated coefficients of SUE are positive and significant for the cumulative abnormal returns for 60 (CAR(60)), 90 (CAR(90)), and 120 trading days (CAR(120)) following the earnings announcement. Consistent with previous studies, the results indicate that PEAD exists in the Korean market (Shin and Park, 2018).

The key variable in Table 2 is the interaction term between SUE and RPTs, SUE × RPTs. This variable examines if increase in RPTs affects PEAD. The coefficients of SUE × RPT1 and SUE × RPT2 are positive and significant in all columns, indicating that related-party transactions significantly increase the magnitude of PEAD. However, the coefficient of SUE × RPT3 is not significant when CAR(60) is used as the dependent variable. The results in Table 2 suggest that investors underreact to earnings news of firms that disclose related-party transactions as they do not have a clear understanding of the transactions among affiliated companies.

In Table 3, we use subgroup analyses to examine whether the effect of related-party transactions on PEAD varies between the chaebol and non-chaebol firm samples, and report the results in Panels A and B, respectively. In Panel A, the coefficients of SUE × RPT1, SUE × RPT2, and SUE × RPT3 are significantly positive, whereas in Panel B they are insignificant, except when CAR(60) is used as the dependent variable for the coefficient of SUE × RPT1. The results in Panels A and B show that related-party transactions significantly increase PEAD only for chaebol firms. The finding in Table 3 provide evidence that investors have difficulty interpreting information about related-party transactions, especially for chaebol firms, which have complex corporate governance mechanisms. Thus, investors underreact to the earnings news of chaebol firms with related-party transactions.

4.3. Robustness tests

4.3.1. Subgroup analyses for positive SUEs and negative SUEs

Here we divide our samples into positive and negative SUEs and test hypotheses 1 and 2. The regression results of hypothesis 1 show that related-party transactions significantly increase the magnitude of PEAD when SUEs are negative. The results reveal that significantly positive association exists between related-party transactions and PEAD when actual earnings are lower than expected earnings; thus, investors underreact to the bad news. The regression results of hypothesis 2 indicate that related-party transactions of chaebol firms have positive and significant effect on PEAD for negative SUEs. The findings provide evidence that investors underreact to negative unexpected earnings of chaebol firms with related-party transactions. The results suggest that investors may show different reactions to unexpected good news and bad news (untabulated).

4.3.2. Alternative measure of PEAD

To confirm the robustness of our main findings, we use the equally weighted index to measure CAR as an alternative method of analyzing PEAD. The results are consistent with the main findings, which uses the value weighted index (untabulated).

Table 1
Descriptive Statistics.

Variables	Mean	Q1	Median	Q3	Std. Dev.
CAR(60)	0.022	-0.129	-0.010	0.129	0.271
CAR(90)	-0.009	-0.190	-0.047	0.127	0.294
CAR(120)	-0.025	-0.218	-0.056	0.126	0.324
SUE	-0.028	-0.046	-0.010	0.000	0.041
RPT1	0.332	0.095	0.226	0.527	0.285
RPT2	0.205	0.026	0.092	0.353	0.231
RPT3	0.112	0.025	0.076	0.182	0.104
SIZE	27.456	26.463	27.174	28.272	1.220
LEV	0.391	0.232	0.389	0.539	0.174
MB	1.360	0.715	1.096	1.787	0.815
LOSS	0.135	0.000	0.000	0.000	0.342
ABAC	0.041	0.015	0.033	0.061	0.031
ANAL	5.382	0.000	2.000	10.000	6.860

The variables are defined in Appendix A.

5. Conclusion

This study investigates if related-party transactions are positively associated with PEAD. Using Korean firm data, we find that higher related-party transactions increase the magnitude of PEAD; in particular, related-party transactions of chaebol firms lead to a significant increase in PEAD. These results are consistent with our conjecture that investors do not fully understand information conveyed in related-party transactions of chaebol firms due to their unique ownership structures and complex corporate governance systems. Thus, investors have delayed reactions to earnings news of chaebol firms involved in related-party transactions. In subgroup analysis for positive and negative SUEs, we find that the main results are significant only for negative SUEs, suggesting that investors may have different reactions to unexpected good news and bad news. Furthermore, our results are robust to an alternative proxy for PEAD. This study adds to the literature on the determinants of PEAD by providing additional evidence that related-party transactions in chaebol firms increase information asymmetry between firms and outside investors and could be a contributor to an increase in PEAD.

CRediT authorship contribution statement

Hyunjung Choi: Conceptualization, Methodology, Writing - original draft, Writing - review & editing, Formal analysis. **Jungeun Cho:** Conceptualization, Methodology, Writing - original draft, Writing - review & editing, Formal analysis.

Declarations of interest

None.

Table 2
Related-party transactions and PEAD
$CAR_{it}(\text{n}) = \beta_0 + \beta_1 SUE + \beta_2 SUE \times RPT + \beta_3 RPT + Control\ Terms + Industry\ \&\ Year\ Dummy + \epsilon$

	Dependent Variable								
	CAR (60)	CAR (90)	CAR (120)	CAR (60)	CAR (90)	CAR (120)	CAR (60)	CAR (90)	CAR (120)
Intercept	0.750	0.261	0.277	0.767	0.270	0.302	0.352	0.442	0.002
	(2.19) **	(0.69)	(0.67)	(2.24) **	(0.71)	(0.73)	(1.42)	(1.63)	(0.01)
SUE	1.095	0.804	0.894	0.950	0.669	0.778	0.501	0.519	0.509
	(3.37) ***	(2.24) **	(2.29) **	(3.19) ***	(2.03) **	(2.17) **	(2.09) **	(1.98) **	(2.06) **
SUExRPT1	2.214	1.626	1.622						
	(3.39) ***	(2.25) ***	(2.07) **						
SUExRPT2				2.753	1.892	2.044			
				(3.48) ***	(2.16) **	(2.15) **			
SUExRPT3							4.822	5.691	5.188
							(1.62)	(1.75) *	(1.69) *
RPT1	0.028	0.023	0.055						
	(0.76)	(0.57)	(1.26)						
RPT2				0.068	0.001	0.001			
				(1.50)	(0.01)	(0.03)			
RPT3							0.073	0.054	0.127
							(0.97)	(0.65)	(1.63)
SIZE	-0.026	-0.008	-0.009	-0.027	-0.009	-0.010	-0.014	-0.005	-0.009
	(-0.10)	(-0.64)	(-0.57)	(-1.17)	(-0.69)	(-0.69)	(-1.51)	(-0.59)	(-0.96)
LEV	0.094	0.050	0.069	0.100	0.055	0.085	0.111	0.087	0.148
	(1.61)	(0.78)	(1.00)	(1.50)	(0.85)	(1.20)	(0.79)	(1.01)	(1.62)
MB	0.005	0.011	-0.016	0.004	0.010	-0.017	0.008	0.010	0.000
	(0.38)	(0.75)	(-1.03)	(0.32)	(0.74)	(-1.09)	(0.84)	(1.02)	(0.01)
LOSS	-0.008	-0.024	-0.048	-0.007	-0.021	-0.044	0.002	0.001	-0.013
	(-0.28)	(-0.75)	(-1.40)	(-0.24)	(-0.67)	(-0.30)	(0.01)	(0.64)	(-0.59)
ABAC	0.142	0.082	0.202	0.144	0.083	0.198	-0.167	-0.269	-0.070
	(1.03)	(0.54)	(1.22)	(1.04)	(0.54)	(1.19)	(-0.77)	(-1.13)	(-0.31)
ANAL	0.003	0.003	0.004	0.003	0.003	0.004	-0.003	0.001	0.002
	(1.41)	(1.09)	(1.69) *	(1.44)	(1.10)	(1.72) *	(-0.04)	(0.64)	(1.39)
IND	Included	Included	Included	Included	Included	Included	Included	Included	Included
YR	Included	Included	Included	Included	Included	Included	Included	Included	Included
Adj. R^2	0.10	0.06	0.08	0.10	0.05	0.08	0.50	0.51	0.20
F-value	4.25 ***	2.41 ***	3.60 ***	4.21 ***	2.28 ***	3.35 ***	78.84 ***	90.22 ***	21.32 ***
Observations	1,286	1,286	1,286	1,286	1,286	1,286	1,286	1,286	1,286

The variables are defined in Appendix A.
T-statistics are reported in parentheses.
*, **, and *** denote statistical significance at the 0.10, 0.05, and 0.001 levels, respectively.

Table 3
Related-party transactions and PEAD: Chaebol and non-chaebol firms
$CAR_{it}(n) = \beta_0 + \beta_1 SUE + \beta_2 SUE \times RPT + \beta_3 RPT + Control\ Terms + Industry\&Year\ Dummy + \epsilon$

	Panel A: Chaebol firms								
	Dependent Variable								
	CAR(60)	CAR(90)	CAR(120)	CAR(60)	CAR(90)	CAR(120)	CAR(60)	CAR(90)	CAR(120)
Intercept	0.413	0.659	0.309	1.556	0.663	0.236	0.711	0.347	0.501
	(0.71)	(1.14)	(0.49)	(3.09) ***	(1.15)	(0.38)	(1.29)	(0.61)	(0.84)
SUE	1.599	0.778	1.703	0.976	0.731	1.319	1.228	1.391	1.396
	(2.57) **	(1.73) *	(2.56) **	(2.73) ***	(1.78) *	(3.02) ***	(2.20) **	(3.31) ***	(2.30) **
SUExRPT1	2.497	1.787	2.537						
	(2.17) **	(1.91) *	(2.03) **						
SUExRPT2				3.346	2.578	1.919			
				(3.30) ***	(2.20) **	(1.97) *			
SUExRPT3							5.889	5.182	7.161
							(1.77) *	(2.11) **	(1.98) **
RPT1	0.047	0.006	0.087						
	(0.74)	(0.12)	(1.28)						
RPT2				0.132	0.048	0.046			
				(2.20) **	(0.70)	(0.56)			
RPT3							0.149	0.176	0.250
							(0.86)	(0.98)	(1.33)
SIZE	-0.011	-0.023	-0.007	-0.057	-0.024	-0.009	-0.024	-0.013	-0.020
	(-0.53)	(-1.11)	(-0.33)	(-1.10)	(-1.14)	(-0.43)	(-1.21)	(-0.62)	(-0.92)
LEV	0.005	0.070	0.005	0.100	0.069	0.056	0.063	0.069	0.080
	(0.04)	(0.88)	(0.05)	(1.38)	(0.86)	(0.50)	(0.70)	(0.73)	(0.81)
MB	0.031	0.009	-0.004	0.004	0.007	-0.005	0.022	0.022	-0.021
	(1.38)	(0.46)	(-0.16)	(0.24)	(0.39)	(-0.19)	(1.03)	(0.98)	(-0.55)
LOSS	-0.046	-0.026	-0.078	-0.001	-0.027	-0.038	-0.024	-0.021	-0.048
	(-1.05)	(-0.59)	(-1.61)	(-0.02)	(-0.61)	(-0.65)	(-0.57)	(-0.47)	(-1.03)
ABAC	-0.376	-0.466	-0.727	-0.323	-0.423	-0.804	-0.026	-0.023	-0.269
	(-0.78)	(-1.10)	(-1.39)	(-0.88)	(-1.00)	(-1.48)	(-0.05)	(-0.05)	(-0.52)
ANAL	-0.000	0.003	0.003	0.002	0.003	0.004	0.002	0.002	0.006
	(-0.02)	(0.79)	(0.75)	(0.72)	(0.86)	(1.14)	(0.69)	(0.74)	(1.90) *
IND	Included	Included	Included	Included	Included	Included	Included	Included	Included
YR	Included	Included	Included	Included	Included	Included	Included	Included	Included
Adj. R^2	0.11	0.07	0.10	0.15	0.07	0.08	0.06	0.04	0.07
F-value	1.67 **	2.25 ***	1.72 **	4.30 ***	2.26 ***	1.44 *	1.86 **	1.44 *	2.28 ***
Observations	472	472	472	472	472	472	472	472	472

	Panel B: Non-chaebol firms								
	Dependent Variable								
	CAR(60)	CAR(90)	CAR(120)	CAR(60)	CAR(90)	CAR(120)	CAR(60)	CAR(90)	CAR(120)
Intercept	1.551	0.120	0.633	0.355	0.050	0.654	0.978	0.459	0.486
	(3.07) ***	(0.20)	(1.00)	(0.61)	(0.08)	(1.04)	(2.01) **	(0.83)	(0.80)
SUE	1.042	1.198	0.693	1.174	0.864	0.601	-0.371	0.283	1.196
	(2.67) ***	(1.91) *	(1.40)	(2.06) **	(1.50)	(1.31)	(-1.03)	(0.69)	(0.44)
SUExRPT1	2.315	1.689	1.267						
	(2.85) ***	(1.43)	(1.23)						
SUExRPT2				2.096	1.184	1.941			
				(1.56)	(0.85)	(1.50)			
SUExRPT3							1.491	1.720	0.784
							(0.65)	(0.66)	(0.27)
RPT1	0.070	0.105	0.062						
	(1.46)	(1.64)	(1.05)						
RPT2				0.046	0.117	0.018			
				(0.59)	(1.48)	(0.25)			
RPT3							0.106	0.097	0.289
							(0.86)	(0.70)	(1.89)
SIZE	-0.057	-0.001	-0.022	-0.009	0.001	-0.027	-0.035	-0.017	-0.020
	(-1.07)	(-0.07)	(-0.93)	(-0.45)	(0.03)	(-1.17)	(-1.96) *	(-0.83)	(-0.91)
LEV	0.104	-0.026	0.115	0.011	-0.022	0.109	0.186	0.111	0.177
	(1.45)	(-0.26)	(1.32)	(0.10)	(-0.21)	(1.23)	(0.81)	(1.47)	(1.14)
MB	0.005	0.030	-0.014	0.033	0.032	-0.009	0.011	0.016	-0.007
	(0.32)	(1.30)	(-0.66)	(1.45)	(1.40)	(-0.46)	(0.67)	(0.85)	(-0.36)
LOSS	0.001	-0.040	-0.048	-0.038	-0.032	-0.044	0.014	-0.007	-0.031
	(0.02)	(-0.88)	(-0.97)	(-0.88)	(-0.70)	(-0.86)	(0.36)	(-0.17)	(-0.67)
ABAC	-0.364	-0.329	-0.082	-0.411	-0.389	0.089	-0.379	-0.425	-0.050
	(-0.99)	(-0.67)	(-0.18)	(-0.85)	(-0.79)	(0.19)	(-1.05)	(-1.03)	(-0.11)
ANAL									

Table 3 (*continued*)

| | Panel B: Non-chaebol firms Dependent Variable | | | | | | | | |
	CAR(60)	CAR(90)	CAR(120)	CAR(60)	CAR(90)	CAR(120)	CAR(60)	CAR(90)	CAR(120)
	0.002	-0.000	0.001	-0.001	-0.001	0.001	-0.001	0.001	0.001
	(0.64)	(-0.01)	(0.31)	(-0.12)	(-0.13)	(0.33)	(-0.14)	(0.50)	(0.24)
IND	Included	Included	Included	Included	Included	Included	Included	Included	Included
YR	Included	Included	Included	Included	Included	Included	Included	Included	Included
Adj. R^2	0.14	0.08	0.10	0.10	0.07	0.08	0.09	0.04	0.07
F-value	4.16 ***	1.44 *	3.04 ***	1.49 *	1.46 *	2.89 ***	4.68 ***	2.06 **	3.83 ***
Sample Size	814	814	814	814	814	814	814	814	814

The variables are defined in Appendix A.

T-statistics are reported in parentheses.

*, **, and *** denote statistical significance at the 0.10, 0.05, and 0.001 levels, respectively.

Acknowledgments

Appendix A

Variable definitions

Variable name	Description
CAR(n)	Cumulative abnormal return after annual earnings announcement
	= Sum of a firm's daily abnormal return over the n days starting from the day after the earnings announcement (n=60, 90, 120).
SUE	Standardized unexpected earnings
RPT	*RPT1, RPT2,* or *RPT3*
RPT1	Sum of related-party sales, purchases, other revenues, and other expenses scaled by sales revenue
RPT2	Sum of related-party sales and other revenues scaled by sales revenue
RPT3	Sum of related-party purchases and other expenses scaled by sales revenue
SIZE	Natural logarithm of total assets
LEV	Total liabilities divided by total assets
MB	Market value divided by book value of shareholders' equity
ABAC	Absolute value of discretionary accruals (Kothari et al., 2005)
ANAL	Number of analysts following the firm
LOSS	An indicator variable that equals 1 if a firm incurs a loss, and 0 otherwise.

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