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The Market Reaction to Internal Control Weakness by Investor Types^{*} - Evidence from the Korean Stock Market -

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〈Abstract〉

Prior literature found that investors react negatively to the disclosure of material weakness in internal control (hereafter ICW) due to the lower financial reporting quality or higher cost of capital. Investors, however, are a heterogeneous group of individuals in terms of the ability of understanding financial information. Therefore, this paper examines how different types of investors react to the disclosure of ICW in Korean stock market. First, we examine investor reaction in terms of abnormal trading volume. Second, using the unique data of order imbalance from Korean stock market, we investigate whether trading behavior during the event window varies by investor types : domestic individuals, domestic institutions, and foreigners. We find that trading volume significantly decreases around the ICW disclosure. Additionally, we find that foreigners and domestic institutions tend to net sell while domestic individuals tend to net buy at the disclosure of ICW. This finding indicates that domestic individual investors react to ICW less negatively than other investors or their understanding of the ICW disclosure is less sophisticated. This study is the first to examine market reaction to ICW by investor types. Given that individual investors show a tendency to overlook an important accounting information, we suggest that regulators focus more on the disclosure activities to draw individual investors' attention on the potential risk of investing in ICW firms.

〈Key words〉 abnormal trading volume, internal control over financial reporting, internal control weakness, market reaction, order imbalance

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I. Introduction

Sarbanes—Oxley Act (SOX), enacted in 2002, has significantly changed the U.S. financial reporting environment. Under Section 302, CEO and CFO are required to evaluate the effectiveness of internal control system and explicitly report their conclusion about internal controls. In addition to Section 302, Section 404 requests external auditors issue their audit opinion on the firm’s internal control over financial reporting. Similar to SOX, Korea has adopted a regulation related to internal control system over financial reporting (Choi et al. 2013). The “Act on External Audit of Stock Companies” requires managements to design and operate effective internal control system and statutory auditor to evaluate the effectiveness of the system and report weaknesses they found to the board of directors and external auditors. The act also mandates external auditors to assess the internal control over financial reporting and provide a review report. Through the practice, policy makers intend to induce managers to take efforts in improving the firm’s internal control system. The effective internal control system would prevent accounting frauds and increase financial reporting quality.

Prior research has documented that firms disclosing internal control weakness (hereinafter ICW) provide low quality financial information (Ashbaugh—Skaife et al. 2008 ; Chan et al. 2009 ; Cho and Yoo 2007 ; Doyle et al. 2007) and operate and invest ineffectively (Cheng et al. 2013 ; Feng et al. 2015 ; Lee 2015). Thus, market reacts negatively to the disclosure of the ICW (Ashbaugh—Skaife et al. 2009 ; Beneish et al. 2008 ; Choi et al. 2009 ; Hammersley et al. 2008). However, prior literature examines only aggregated investor reaction to the ICW disclosure and does not distinguish investor reactions by investor types. Most of market reaction studies investigate price reactions to the ICW disclosure during the event window by the characteristics or the severity of ICW. It is not investigated which investors react more or less negatively to the ICW disclosure although investors are not homogeneous. Sophisticated investors such as foreign investors may obtain more information, better understand the impact of it, and react more sensitively than other naïve investors (Menon and Williams 2010).

We investigate whether market participants, who are domestic institutions, foreigners, and domestic individuals react differently to the ICW disclosure. Since unique trading volume information is available in Korean database, it provides an excellent research opportunity. Using order imbalance data, we examine whether there exists any distinguishable trading patterns among different types of investors by comparing their trading volume patterns.

Using 459 observations reporting ICW during the 2005 to 2010 period, we find that trading

volume dramatically drops on the ICW disclosure. Together with the negative return reaction, the trading volume reduction implies that investors consider ICW disclosure as a bad news homogeneously. Second, we find that foreign investors react most negatively to ICW disclosure among investors. Foreign investors short ICW firm stocks at the ICW announcement. Their significant abnormal selling of ICW firm stocks persists after the ICW announcement. This trading behavior suggests that they interpret ICW as a bad signal about the value of the firm and react instantly at the news. Interestingly, domestic institutions significantly short ICW firm stocks one day before ICW disclosure and the trading volume is not significantly different from zero on and after the ICW disclosure. The ex-ante trading activities on the bad news disclosure suggests the possibility of informational advantage of the institutional investors. Domestic individuals, however, net purchase ICW stocks around ICW disclosure against other investors (institutions and foreign investors). This finding implies that individual investors are less sophisticated than institutions and foreign investors, and ignore the significance of ICW.

The primary contributions of the paper are as follows : First, we provide additional evidence on the usefulness of ICW information. This paper is the first to examine trading volume reaction to the ICW disclosure.¹⁾ Since trading volume reflects the level of consensus on the news, it provides empirical evidence on the investors' reaction incremental to the studies examining return reaction to ICW disclosure (e.g., Beaver 1968 ; Bamber and Cheon 1995 ; Bamber et al. 2011 ; Garfinkel 2009). Second, using the unique daily order imbalance data by investor groups, we examine trading reaction by investor types around ICW disclosure. Our finding that individual investors net purchase stocks while foreigners and institutional investors net sell on the ICW disclosure has an important policy implication. Investing in ICW firms is risky because those ICW firms invest and operate inefficiently and are more likely to be delisted in Korea. Thus, this paper awakens the necessity to inform the individual investors of the riskiness of investing in ICW firms and suggests that ICW disclosure should be more focused on drawing attention of the individual investors.

The remainder of the paper is organized as follows. We review prior literature and develop our hypotheses in Section 2. Section 3 presents empirical models and expected test results. Section 4 describes sample selection and variables. Section 5 concludes the paper.

1) In Korea, Choi et al. (2009) is the only study revealing the short-term market reaction on ICW. The study investigates price reaction (market return) like U.S. studies.

II. Literature Review and Hypotheses development

It is reported that ICW firms provide low quality financial information (Ashbaugh—Skaife et al. 2008 ; Chan et al. 2009 ; Cho and Yoo 2007 ; Doyle et al. 2007). Prior literature also documents that ICW firms operate ineffectively and invest ineffectively (Cheng et al. 2013 ; Feng et al. 2015 ; Lee 2015). The cost of equity capital (Ashbaugh—Skaife et al. 2009 ; Beneish et al. 2008²⁾) and the cost of debt capital (Costello and Wittenberg—Moerman 2011 ; Dhaliwal et al. 2011 ; Kim et al. 2011 ; Tang et al. 2015) are larger for ICW firms. Thus, ICW disclosure is bad news to equity market investors.

Prior studies on U.S. firms have examined market reactions to the disclosure of ICWs under Section 302 or Section 404. Beneish et al. (2008) find that there is negative stock price reaction to Section 302 ICW disclosures, but not to Section 404 ICW disclosures. They report that cumulative abnormal return around ICW disclosure (3 days) is -1.8% for their sample of 330 firms reporting material weakness under Section 302. Ashbaugh—Skaife et al. (2009) find negative reactions to Section 404 ICW disclosure. Hammersely et al. (2008) also observe negative reaction to Section 302 ICW disclosure and document that the negative reaction is larger when the weakness is more material, more ambiguous, and less detectable. Similarly, using Korean stock market data from 2005—2007, Choi et al. (2009) document negative reaction to ICW disclosure and the mitigating effect of quality auditors on the reaction. Lee et al (2009) document that the value relevance of ICW firm is lower than non—ICW firms. Overall, prior literature suggests that stock market reacts negatively to the ICW disclosure.

However, all the studies mentioned above investigate market reaction in terms of price. Beaver (1968) states that price reaction reflects the average change in investors' beliefs on the information and trading volume reveals investors' heterogeneous interpretation on the information. Kim and Verrechia (1997) develop a model describing trading activity and investors' heterogeneous beliefs. They show that the discrepancy in acquired information and different interpretation on the information increase trading volume. Thus, trading volume reaction provides additional evidence on the effect of disclosure. In addition to price reaction, studies investigating trading volume can enrich the line of research and help to reconcile the mixed results found in prior studies. For example, while Ashbaugh—Skaife et al. (2009) and Beneish et al. (2008) document mixed

2) Ogneva et al. (2007) do not find differences in implied cost of equity capital between ICW firms and non—ICW firms. They argue that the findings of Ashbaugh—Skaife et al. (2009) is misled by limited sample and univariate test.

evidence for the market reaction to Section 404 disclosure, trading volume reaction can provide further evidence on the effectiveness of Section 404 disclosure.

Prior studies suggest that investors would interpret ICW disclosure as bad news. If they react homogeneously, we would expect to observe a decrease in abnormal trading volume on the ICW disclosure. Our first hypothesis follows :

H1 : Abnormal trading volume decreases after disclosure of ICW.

Prior research documents negative stock return at the ICW disclosure. Investors, however, are not homogeneous group. Information environment, information interpretation capacity, limitation in trading, and trading cost vary across investor types and affect trading decision of each investor group. They lead to different responses in terms of the speed or the direction of trading. In general, institutional investors such as banks, mutual funds, insurance companies, or hedge funds are assumed to be sophisticated investors and have superior ability to understand disclosure (e.g., Bartov et al. 2000 ; Collins et al. 2003 ; Ke and Ramalingegowda 2005 ; Kim and Verrecchia 1994). Kim and Cheon (2004) empirically compare trading patterns and ex – post returns subsequent to earnings surprise by investor types and examine which of foreign or domestic investors are better informed in the Korean stock market. They document that foreign and domestic institutional investors earn abnormal returns while domestic individuals experience negative returns. Regarding information asymmetry between investors, Park and Kim (2012) find that domestic institutions net buys before earnings surprise and net sells before earnings shock. In case of foreign investors, they net purchase after earnings surprise and net sells before and after earnings shock. However, domestic individuals act conversely. Likewise, Cho and Min (2015) document that domestic institutions and foreign investors have high quality information while domestic individuals have low quality information.

Little research has been conducted on the market reaction to ICW disclosure by investor types. We investigate this issue by examining the data of order imbalance (i.e. net sell or net buy) by investor types. Order imbalance data are available for three investor groups ; domestic institutions, domestic individuals, and foreign investors. We expect that difference in informational environment and ability of information interpretation among the investor groups would lead to different responses to the announcement of ICW, specifically in terms of order imbalance. Our expectation of different trading pattern across investors leads to our second hypothesis :

H2 : The reaction to ICW is different between groups of investors (domestic individuals, domestic institutions, and foreigners) in terms of order imbalance (net buy or net sell).

III. Sample and research design

1. Sample

Our sample consists of the firms listed in KOSPI and KOSDAQ for the fiscal year 2005 to 2010. We identify the firms disclosing weaknesses in its internal control over financial reporting from their audit reports available on the DART (Data Analysis, Retrieval and Transfer System) website. Firms with internal control weakness are defined as the firms whose auditors report material weaknesses regarding the firm's internal control system or disclaim to provide any assurance because of a scope limitation. We exclude firms with trading suspension or investment concern notification around the disclosure of ICW to prevent the effect of other material news in the event window. For the firms reporting ICW after the market closes, we adjust their event dates as the next trading days of the disclosure dates to accurately capture market reaction to ICW disclosure (Baik et al. 2012). We obtain daily transaction and ownership data aggregated by investor types from DataGuidePro, which provides price data as well.

2. Research design

A. Trading volume reduction

To measure investors' reaction reflected in the change of trading volume, we compute daily abnormal trading volume of stocks around the disclosure of ICW. Abnormal trading volume (*AVOL*) is obtained by adjusting trading volume for the average trading volume during non-event period. We define *AVOL* as the natural log of the ratio of event date trading volume to non-event period trading volume, following Landsman et al. (2012) and DeFond et al. (2007) :

$$AVOL_{i,t} = \ln(1 + V_{i,t} / V_i)$$

where,

$V_{i,t}$: Daily trading volume around ICW disclosure, shares of firm *i* traded during day *t*, relative to ICW announcement day (*t*=0). Trading volume is scaled by the number of outstanding shares.

V_i : Median daily trading volume for firm i for days $t-90$ to $t-10$ (80 day non-event period) relative to ICW announcement day t .

B. Trading volume reaction by investor types

To investigate the reaction to ICW by investor types, we run a multi-variate regression of order imbalance (hereafter, OI) on investor class dummies for the full sample. OI represents the difference between buy trade and sell trade for each investor group. Following Gerlach and Yook (2016)'s order imbalance regression, we include market returns and stock returns to control for the effect of feedback strategy (return-motivated orders). The regression equation is as follows :

$$OI_{i,t} = \text{Intercept} + \beta_1 Rm_{i,t} + \beta_2 R_{i,t} + \beta_3 Inst_d_{i,t} + \beta_4 For_d_{i,t} + \varepsilon_{i,t} \quad (1)$$

Where OI is sum of daily order imbalance(OI) of firm i between buy trade and sell trade for each investor group for $(t-1, t+1)$ window around ICW announcement day t . Rm is cumulative market return for $(t-1, t+1)$ window and R represents cumulative stock return for $(t-1, t+1)$ window. $Inst_d$ equals one if the investor is a domestic institution and zero otherwise. For_d equals one if the investor is a foreigner and zero otherwise. The intercept represents the level of OI for domestic individuals relative to domestic institutions and foreign investors. Significant coefficient for institution dummy ($Inst_d$) or foreigner dummy (For_d) would support H2, indicating that each investor class reacts differently in terms of trading pattern to the disclosure of ICW relative to other investor groups. For example, if β_4 is negative and significant, foreigners tend to sell (net-seller) the stock at the disclosure of ICW relative to domestic individuals.

Among the variables, OI , the variable of our primary interest, requires a further explanation. Adopting the methodology of Choe et al. (1999), the daily order imbalance for each firm is defined as the net buy volume divided by daily total volume averaged over the previous ten trading days, where net buy volume is the number of shares bought minus the number of shares sold such that :

$$OI_{it} = \frac{\text{Shares of Firm } i \text{ Purchased on Day } t - \text{Shares of Firm } i \text{ Sold on Day } t}{\text{Average Total Volume from Day } t-11 \text{ through Day } t-1} \quad (2)$$

As seen in the above equation, the variable OI is adjusted for the average trading volume. For example, positive $OI_{i,t}$ for individual investors means that the aggregated order by domestic

individuals was net buy for the firm i at day t . Similarly, negative OI means that the investor group of domestic individuals was a net seller.

C. Additional tests

To measure investors' reaction, we also calculate returns of the firms in total sample around the disclosure of ICW. Returns are calculated as daily abnormal returns (AR) and cumulative abnormal returns for three days around ICW disclosure, adjusted for the market return using the CAPM. The measured returns will show whether investors regard the disclosure of ICW as bad news on average, giving the direction of the market reaction to ICW disclosure.

IV. Empirical Results

1. Descriptive statistics

Table 1 provides descriptive statistics for $OI3$ by investor types and other control variables of the ICW firms in the sample. We hand-collected the data of the firms reporting ICW and the total number of firm-year observations used in the analyses is 459.

〈Table 1〉 Descriptive Statistics

Variable	N	Mean	Std. Dev.	Q1	Median	Q3
$OI3_for$	459	-0.0003	0.00273	-0.00017	0	0.00015
$OI3_inst$	459	-0.0001	0.0006743	0	0	0
$OI3_indi$	459	0.0004	0.00361	-0.00036	0	0.00052
$Volume$	459	1,109,373	2,698,226	0	132,431	1,010,197
$Volume_AMT$	459	1,310,688,297	3,432,012,524	0	171,845,270	979,609,200
R	459	-0.0209	0.1160786	-0.067	0	0.0172
Rm	459	0.0107	0.0211228	0	0.011	0.024

The variables are defined as follows ; $OI3$ is sum of daily OIs for each investor group for $(-1, 1)$ window. Definition of OI is provided in Figure 2. $OI3_for$ is $OI3$ for foreign investors, $OI3_inst$ is $OI3$ for domestic institutional investors. $OI3_indi$ is $OI3$ for domestic individual investors. $Volume$ is three-day average of trading volume for $(-1, 1)$ window. $Volume_AMT$ is $Volume$ in monetary value (KRW). Rm is cumulative market return for $(t-1, t+1)$ window, and R is cumulative stock return for $(t-1, t+1)$ window.

The mean *OIB* for foreigners, domestic institutions, and domestic individuals, scaled by the number of outstanding shares, are -0.0003 , -0.0001 , and 0.0004 , respectively. During the three-day window $(-1, 1)$ around ICW disclosure, foreign investors tend to sell (net sell) but domestic individuals tend to buy (net buy). The mean three-day return of ICW firms (R) is -2.09% , negative and less than the market return (R_m) of 1.07% for the same period, suggesting that on average, investors react negatively to the ICW disclosure.

2. Abnormal trading volume after ICW disclosure

Table 2 presents mean daily abnormal trading volumes of the ICW firms during the 10 day period around the ICW disclosure. Figure 1 graphically shows these results. When the ICW is announced (day=0), the abnormal trading volume drops dramatically and discontinuously. The mean abnormal trading volume significantly drops from 0.8423 to 0.5732 at the date of ICW disclosure. These results support our first hypothesis that abnormal trading volume decreases after the announcement of ICW because of the homogeneous belief of stock market investors on the firm's performance. Together with the negative stock return response to ICW disclosure, the sharp decline in trading volume indicates that investors interpret ICW as bad news in general.

<Table 2> Abnormal trading volume around ICW disclosure $(-5, 5)$

Daily abnormal trading volume		
Day	Mean	t-value
-5	0.8642	25.34
-4	0.8390	24.7
-3	0.8953	24.34
-2	0.8937	23.43
-1	0.8423	21.77
0	0.5732	16.76
1	0.5675	16.66
2	0.6228	18.11
3	0.6534	18.74
4	0.6697	19.01
5	0.6226	19.34

Table 2 presents mean abnormal trading volumes of the ICW firms during the 10 day period around the ICW disclosure. The graphical presentation of the results in Table 2 is provided in Figure 1. See Figure 1 for definition of abnormal trading volume (*AVOL*).

〈Figure 1〉 Abnormal trading volume around ICW disclosure

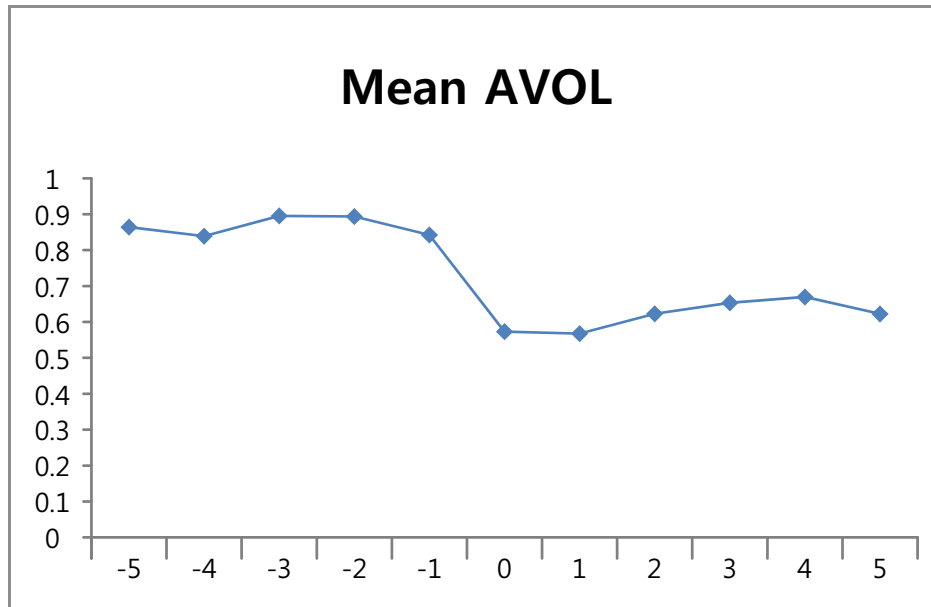


Figure 1 illustrates the mean abnormal trading volume around ICW disclosure (*AVOL*). The details and significances are provided in Table 2. *AVOL* is defined as follows ; $AVOL_{i,t} = \log(V_{i,t} / \bar{V}_i)$, where $V_{i,t}$ is daily trading volume for around ICW disclosure for firm i traded during day t , relative to ICW announcement day $t=0$. Trading volume is scaled by the number of outstanding shares. $\bar{V}_i$ is the median daily trading volume for firm i for days $t-90$ to $t-10$ (80 day non-event period) relative to ICW announcement day t .

3. The reaction to ICW disclosure by investor type

Table 3 reports the mean *OIs* for investors for the $(-3, 3)$ window around ICW disclosure by investor type. As shown in Table 3, we find that investor groups show different trading patterns around ICW disclosure. Foreigners and institutional investors appear to react negatively by showing negative *OIs* (net sell) around ICW disclosure, while the magnitude of net sell is much greater for foreign investors. Domestic institutions report negative *OI* (net sell) on day -1 , one day prior to the ICW announcement, hinting the possibility that domestic institutions are better informed traders than others. Foreigners also show negative *OI* on day 0 and day 1 and are net sellers up to day 3. In contrast, individual investors tend to net buy (positive *OIs*) before and after the announcement of ICW. Individual investors do not appear to react negatively to ICW disclosure.

<Table 3> Order Imbalance by Investor Type

Day	Domestic Individuals		Foreign Investors		Domestic Institutions	
	Mean	t-value	Mean	t-value	Mean	t-value
-3	0.0005207	2.26	-0.0000435	-0.34	-0.0000214	-0.4
-2	0.0002641	1.88	-0.0001384	-1.14	0.0000022	0.14
-1	0.0002224	1.43	-0.0000638	-0.45	-0.0000434	-1.66
0	0.0001651	1.22	-0.0002048	-1.83	-0.0000277	-1.1
1	0.0004308	2.58	-0.0002677	-2.72	0.0000013	0.06
2	0.0001915	1.27	-0.0002161	-1.55	-0.0000004	-0.02
3	0.0003045	2.04	-0.0001968	-2.28	-0.0000424	-0.92

Table 3 reports the mean *OIs* for each investor type for the (-3, 3) window around ICW disclosure. The graphical presentation of the results in Table 3 is provided in Figure 2. See Figure 2 for definition of *OI*.

Figure 2 is a graphic representation of Table 3. The dashed line is for domestic individual investors. The dot and dash combined line is for domestic institutional investors. The solid line is for foreigners. This figure clearly shows the dramatic difference in trading patterns in terms of order imbalance between domestic individuals and foreigners, consistent with our second hypothesis. Foreign investors react negatively by showing negative *OIs* after ICW disclosure while individual investors showing positive *OIs* after ICW disclosure being the trading counterparts of net-selling foreign investors. The results are consistent with the findings of Park and Kim (2012) that domestic institutions act before disclosure of the news and foreign investors act after the news, while individual investors act conversely.

Collectively, these results may suggest that foreign and domestic institutional investors understand the negative implication of ICW on the firm value, consistent with the argument that institutional investors are more sophisticated than individual investors (Field and Lowry 2009). In addition, the results support that institutions and foreign investors have informational advantage against individual investors (Cho and Min 2015 ; Kim and Cheon 2004 ; Park and Kim 2012).

〈Figure 2〉 Order Imbalance (OI) around ICW disclosure by investor type

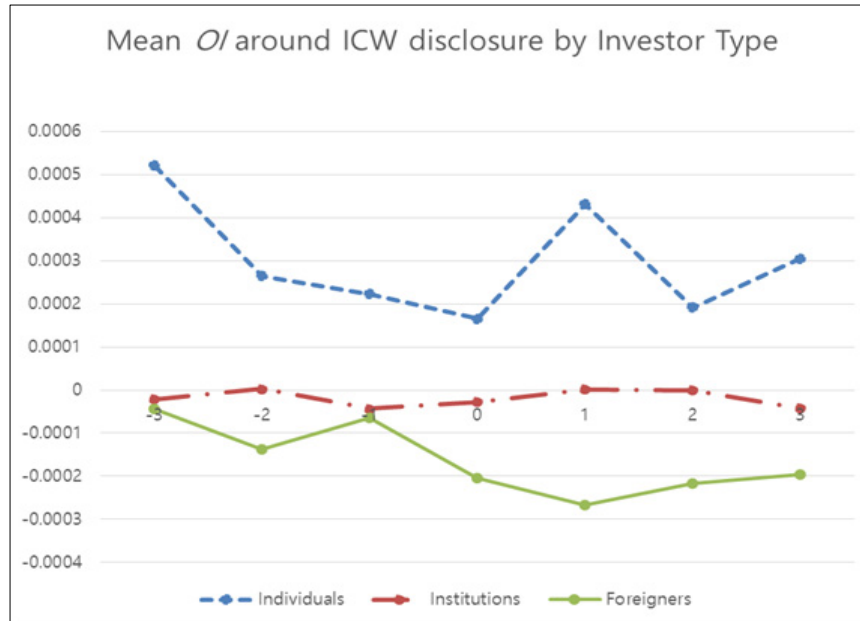


Figure 2 displays the mean order imbalance (*OI*) for the $(-3, 3)$ window around ICW disclosure by investor types. The dashed line is for individual investors. The dot and dash combined line is for domestic institutional investors. The solid line is for foreign investors. The daily order imbalance (*OI*) for each firm is defined as the net buy volume divided by daily total volume averaged over the previous ten trading days, where net buy volume is the number of shares bought minus the number of shares sold. The details and statistical significance are provided in Table 3.

Further, we calculate cumulative *OIs* around ICW disclosure for three investor groups to examine which group of investors are eventually net sellers or net buyers. Table 4 presents the mean cumulative *OIs* for three-day event period $(-1, 1)$ around ICW disclosure. The mean cumulative *OIs* for individual and foreign investors are 0.00044 and -0.00024 , respectively, consistent with the previous results that foreign (individual) investors tend to net sell (net buy). Based on the results in Table 4, the negative cumulative *OI* of institutional investors is not statistically significant.

〈Table 4〉 Cumulative Order Imbalances for event-period (−1,1)

Investor Type	Mean	t-value	p-value
Individuals	0.00044	2.47	0.014
Institutions	−0.00007	−1.41	0.158
Foreigners	−0.00024	−1.82	0.070

Table 4 presents the mean cumulative *OI* for three-day event period (−1, 1) around ICW disclosure. See Figure 2 for definition of *OI*.

We provide multi-variate analysis and run a regression eq. (1) including market returns and stock returns to control for the effect of feedback strategy (return-motivated orders) (Gerlach and Yook 2016). Table 5 reports the results from the regression analysis. Coefficients for *Inst_d* and *For_d* are −0.00051 (p-value<0.01) and −0.00068 (p-value<0.01), respectively. These negative and statistically significant coefficients suggest that domestic institutional and foreign investors tend to sell more compared with individual investors around ICW disclosure. Therefore, the results from the multivariate analysis also support our second hypothesis.

〈Table 5〉 Order Imbalance by Investor Type

$$OI_{i,t} = \text{Intercept}_{i,t} + \beta_1 Rm_{i,t} + \beta_2 R_{i,t} + \beta_3 Inst_d_{i,t} + \beta_4 For_d_{i,t} + \varepsilon_{i,t}$$

Variable	Coefficient	t-value	p-value
Intercept	0.00042	3.07	0.002
<i>Rm</i>	0.00079	0.22	0.823
<i>R</i>	−0.00057	−0.92	0.358
<i>Inst_d</i>	−0.00051	−2.76	0.006
<i>For_d</i>	−0.00068	−3.67	0.000
Adj.R ²	0.01		
N	1,377		

Table 5 reports the results from the regression analysis of equation (1). Because three types of investor *OI* are used in the regression (for domestic individual, domestic institutional, and foreign investors), the number of observations in the regression is 1,377 (=459×3). *Inst_d* equals one if the investor is a domestic institution and zero otherwise. *For_d* equals one if the investor is a foreigner and zero otherwise. See Table 1 for the definitions of other variables.

4. Additional test : Excess returns related to ICW disclosures

As an additional test, we examine the direction of reaction to understand, on average, how investors react to the announcement of ICW. Panel A and Panel B of Table 6 report the mean daily excess stock returns (CAPM-adjusted stock returns) and the mean cumulative abnormal returns for $(-1, 1)$ window, respectively. Panel A shows that daily excess returns around ICW disclosure are mostly negative and statistically significant. The cumulative abnormal returns for the window of $(-1, 1)$ in Panel B is -1.72% and statistically significant ($p\text{-value} < 0.01$). Consistent with the previous results found in Choi et al. (2009) and Beneish et al. (2008), we find that on average, investors react negatively to ICW disclosure.

〈Table 6〉 Excess Returns Related to ICW Disclosures

Panel A : Daily Excess Returns		
Day	Mean	t-value
-3	-0.0076	-2.3348
-2	-0.0120	-3.6106
-1	-0.0110	-3.4953
0	0.0003	0.1212
1	-0.0066	-2.0156
2	-0.0058	-1.6719
3	-0.0084	-2.1319
Panel B : Cumulative Abnormal Returns $(-1, 1)$		
Mean	t-value	p-value
-0.0172	-2.84	0.0048

Panel A and Panel B of Table 6 report the mean daily excess stock returns (CAPM-adjusted stock returns) around ICW disclosure and the mean cumulative abnormal returns for $(-1, 1)$ window, respectively. $N=459$

V. Conclusion

After a series of accounting scandals such as Enron and Worldcom, Sarbanes-Oxley Act (SOX) was enacted in 2002 to prevent accounting failure and restore public trust on the financial reporting. Korean auditors are also required to review internal control over financial reporting and

provide their assurance on it since 2005, similar to SOX Section 404. Although more than 10 years have elapsed since the adoption of the regulation, there are still widespread criticism that the compliance with the rule is too costly but not beneficial. Especially, some critics argue that Korean auditor's ICW reviewing process and attestation are just perfunctory and do not provide any useful information to the investors. Therefore, it is important to investigate the effectiveness of the ICW disclosure, find out the limitation, and discuss ways of improvement. This paper provides evidence that ICW disclosure has information content and the reaction to the ICW disclosure varies across investor types.

Specifically, we observe negative abnormal returns around ICW disclosure, consistent with Choi et al. (2009) and Beneish et al. (2008). The price drop shows that investors consider ICW disclosure as bad news. Additionally, we find a sharp decline in trading volume after ICW disclosure. The decrease in trading volume implies that investors interpret the news homogeneously in general. The trading volume and price reactions show that investors take ICW disclosure into account when they make trading decisions. It repudates the argument that ICW disclosure is only implemented as a perfunctory process and meaningless.

Furthermore, we investigate trading patterns by investor types – domestic individuals, domestic institutions, and foreign investors. Our order imbalance (net sell or net buy) tests reveal that foreign investors react more negatively to ICW disclosure, compared with domestic individual investors. Foreign investors significantly net sell while individual investors net buy on ICW disclosure. Interestingly, it is observed that institutional investors net sell *prior to* ICW disclosure. The trading activity of institutional investors shows that domestic institutions have more informational advantage compared to domestic individuals and foreigners. The difference in reaction to ICW disclosure across investor types presents that each investor group has different view on the future performance of ICW firms. Given that informational environment is different across investor groups and the ability to understand information is also different across investors, our findings suggest that individual investors may lack information and ability to interpret ICW disclosure. Our findings have a policy implication that regulators should consider means to draw individual investors' attention on the potential risk of investing in ICW firms.

This paper has three contributions. First, this paper investigates not only price reaction but also trading reaction of the stock market. Prior literature examines market reaction to ICW disclosure only in terms of return, and studies with Korean data are scarce. This paper provides evidence that ICW disclosure has information content for equity market investors. In general, investors interpret ICW disclosure homogeneously as bad news. Second, this paper is the first to examine

different trading responses by investor types around ICW disclosure. The unique order imbalance dataset available for Korean firms enables the investigation of investor reactions to ICW disclosure by different types of investors – domestic institutional, domestic individual, and foreign investors. Additionally, we use the exact time of disclosure and contents of all ICW disclosure provided by Korean regulation. Korean regulation requires that all listed companies make public disclosures through a single channel, DART. The single channel and exact time information makes event study more precise and effective by limiting the confounding effect of other types of news. Third, we find that institutional and foreign investors net sell stocks of ICW firms while individual investors net purchase those stocks. The result implies that individual investors may be in inferior information environment and their ability to interpret information may be relatively low compared with other investor groups. The result also provides a lesson to policy makers that more ideas and efforts are required to make individual investors aware of potential risks of investing in ICW stocks. All in all, the findings of the paper suggest that the reinforced disclosure policy should be focused more on individual investors for a more efficient resource allocation in the economy.

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내부회계관리제도 취약점 공시에 대한 투자자별 반응*

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<요 약>

선행연구들에서 내부회계관리제도의 취약점을 보고하는 기업들은 낮은 재무보고 품질, 더 높은 자본조달비용의 부담 등으로 인하여 주식시장이나 채권시장에서 투자자들이 부정적인 반응을 보인다는 것을 발견하였다. 그러나 투자자들은 단일한 성격의 집단이 아니며 투자자별로 재무정보에 대한 이해도를 비롯한 정보의 처리 능력에는 차이가 있다. 따라서 내부회계관리제도의 취약점을 보고하는 기업에 대하여 모든 투자자들이 동일한 반응을 보일 것인지는 알 수 없다. 본 논문은 외국인, 국내 기관, 국내 개인 투자자로 투자자를 구분하여 내부회계관리제도의 취약점 보고에 대하여 투자자들이 상이한 반응을 보이는지를 검증하였다. 구체적으로 내부회계관리제도의 취약점을 보고할 때, 취약점 보고 전후의 거래일에서 거래량이 증가 또는 감소하는지를 검증하였다. 그리고 어떠한 투자자가 순매수 또는 순매도(order imbalance)를 하는지 투자자별 거래량을 검증하였다. 검증 결과 내부회계관리제도의 취약점을 공시하는 경우에 전체적으로 거래량이 유의하게 감소하는 것을 발견하였다. 순거래량을 투자자별로 살펴보았을 때 외국인 투자자와 기관투자자는 순매도 행태를 보이는 반면, 개인투자자는 기관이나 외국인투자자에 비해 순매수 행태를 보였다. 이것은 개인 투자자들이 내부회계관리제도의 취약점 공시에 대하여 다른 투자자에 비하여 상대적으로 덜 부정적으로 해석하거나 내부회계관리제도의 취약점을 가진 기업의 부정적인 특성에 대하여 잘 이해하지 못하기 때문으로 보인다. 본 연구는 내부회계관리제도의 취약점 공시에 대하여 투자자별 반응을 나누어서 살펴 본 최초의 연구이다. 개인투자자들이 중요한 회계정보를 간과하고 투자하는 성향을 보이는 것을 감안할 때, 본 연구의 발견은 어떠한 투자자에게 보다 집중하여 공시활동 등을 강화해야 할지에 대한 근거자료가 될 수 있다.

<주제어> 내부회계관리제도의 취약점, 비정상거래량, 순매수, 순매도, 시장반응, 투자자별 반응

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