How Does Regulation Fair Disclosure Affect Share Repurchases? Evidence from an Emerging Market

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Abstract

This paper analyzes how Regulation Fair Disclosure (Reg FD hereinafter) affects share repurchases in an emerging market where information asymmetry problem is severe. The results indicate that the frequency of bad news disclosures and the size of negative excess return in the KOSDAQ market increase in a statistically significant manner prior to share repurchase, while the frequency of good news disclosures increases after share repurchase. This is consistent with the hypothesis that firms show opportunistic behavior of buying their own stocks at a low price by taking advantage of fair disclosures. In order to analyze the cause of the opportunistic behavior, we examine variables, such as the number of stock options held by the management and the ratio of shareholding by CEO and related parties. We find empirical evidence that the stock compensation ratio for the management shows a positive relationship with good news disclosures following the completion of share repurchase. Our findings suggest that there exists information distortion in Reg FD in order to protect the management's ownership interest in Korean stock market.

Keywords: regulation fair disclosure, share repurchase, KOSDAQ market, opportunistic behavior, Korea

1. Introduction

Government regulations on the stock market system are designed to keep the management in check and to protect investors. In addition, Reg FD, introduced by the U.S. Securities Exchange Commission (SEC) in October 2000, was put in place as part of a larger scheme to protect investors (Note 1). Reg FD is a provision requiring firms to make information available to individual investors, which used to be accessible by specific groups, such as analysts or institutional investors, prior to promulgation of Reg FD. This regulation was passed to eliminate asymmetry in information delivery and to improve the market's efficiency. Reg FD contains a significant amount of profit outlooks and projections on profit and loss.

However, a gap can exist between the principle and the practice, especially when the principle is related to the management's incentives. Granted that a regulation is created to unconditionally ban the benefits that firms used to enjoy by selectively limiting the audience who can access information, the management can take advantage of its monopoly on internal information and distort the information that will go out to investors in order to enjoy the same pre-regulation benefits. Gomes et al. (2007) insist that rather than addressing the agency problem, the introduction of Reg FD in the United States rather complicated the channel of information delivery. Gye-won Lee et al. (2005) also note that there is a possibility of less information being made available after the introduction of Reg FD in Korea because firms would rather explore more diversified and clandestine channels of communication.

This paper focuses on why Reg FD, intended to provide clear information to all, is, in practice, associated with information distortion caused by the management. We conduct empirical analyses on data related to fair disclosures made prior to or following share repurchases, as well as regular fair disclosures with no relationships to share repurchases. The purpose of this paper is to verify whether or not the management's opportunistic behaviors occur through fair disclosures either prior to or following share repurchase.

Brockman et al. (2008) confirm that there is statistically significant information distortion between disclosures on profit outlooks and on share repurchases by US firms. In particular, the authors find that bad news disclosures made within the 30-day window prior to share repurchase and negative excess return increased in a statistically

significant manner. This indicates that a firm's disclosures are related to the management's intent to distort information so that they can buy their firm's shares at a low price.

In this paper, we apply the research methodology adopted by Brockman et al. (2008) in order to study the relationship between fair disclosures and share repurchases using the KOSDAQ market for empirical analysis. Firms listed on the KOSDAQ market are smaller in size than those on the Korean Stock Exchange (KSE hereinafter) market, and the KOSDAQ market has higher information delivery cost than the KSE market. This suggests that the KOSDAQ market may have more serious information asymmetry issue than the KSE market, and that the management of KOSDAQ firms can cause information distortion through fair disclosures.

Since Reg FD was introduced in Korea in November 2002, there had been little research conducted on fair disclosures in Korea. Henceforth, the portion of share repurchases has been steadily growing in the dividend policies of domestic firms, and quite a few studies have been done on share repurchases. However, studies that link Reg FD with share repurchases are almost non-existent in Korea.

In this paper, we empirically analyze whether Reg FD lives up to its original purpose of reducing agency cost and information asymmetry and protecting investors. Our analysis uses points prior to and following firms' share repurchases in the KOSDAQ market. According to our study, when compared to "regular" times when no share repurchase is taking place, there is a significantly higher probability that fair disclosures made within the 30-day window prior to share repurchases come out as bad news disclosure. Also, due to these fair disclosures, the firms' stocks have a statistically significant negative excess return for three days prior to and three days following the disclosure date.

This paper is organized into six sections. In Section 2, we review background information on Reg FD and share repurchases, and examine the relationship between them. Section 3 describes the sample and the methodology of the study. Section 4 presents the empirical evidence, and Section 5 presents the robustness analysis results. Our conclusions are presented in Section 6.

2. Literature Review

Though it has been approximately 10 years since Reg FD was introduced, there still is a lack of research on this regulation in emerging markets, whereas studies in the developed markets, such as US and UK, have been active on the subject of eliminating information asymmetry and on efficiency in information delivery that may have been affected by the introduction of Reg FD.

Gomes et al. (2007) insist that implementation of Reg FD brought about welfare loss for small-sized firms and show that the capital cost of these firms actually went up. They could prove neither that agency cost went down after the implementation of Reg FD, nor that there was a decreased risk of litigation stemming from information asymmetry. This, they argue, indicates that Reg FD caused unintended side effects on information flow. Results of studies on stock price volatility observed before and after introduction of Reg FD are mixed. Heflin et al. (2003) insist that volatility dropped; Bailey et al. (2003) claim that they were not able to find significant changes.

In Korea, Kim et al. (2005) insist that Reg FD induced some positive changes in terms of stock volatility before and after the disclosure date. They found that volatility was reduced and deviations of excess return became smaller. However, Lee et al. (2005) present a different view, mentioning that volatility has grown larger in small-sized firms, and less information is available due to the fact that analysts' profit estimates are mostly targeted at larger firms and smaller firms are marginalized. In summary, views are mixed on whether or not Reg FD, both domestic and foreign, has brought about significant changes to the information environment.

In the meantime, Fried (2001) takes note of the management's intentional behaviors that are beyond the function of information delivery, and proposes a hypothesis of the management's opportunism. This means that the management may send false undervaluation signals to the market through disclosures with a view to selling their stocks. Agapova et al. (2012) find that after Reg FD, information efficiency deteriorates in firms that do not provide public guidance and for new guiders, while it does not change for firms that continue issuing public guidance.

Unlike the literatures on Reg FD, research papers on share repurchases, both domestic and foreign, carry quite in-depth debates. Ahn et al. (2011) show that the financial executives regard undervaluation of the stock price as the most significant factor in determining share repurchase policy. On the matter of information delivery effect, Choi and Jung (2012), by analyzing disclosure data on share repurchases between 2000 and 2007, discover that disclosures aimed at share repurchases have an effect of information delivery as they find out that disclosures aim at share repurchases, which correspond to cheap talk neither costly nor binding, can affect the market both in the short and long term.

This research suggests that it is important to test whether Fried (2001)'s hypothesis of opportunism by the management holds in emerging markets' share repurchases through abusing Reg FD. Cheng and Lo (2006) show that insider trading happens because of plans and intent of the management, and that specifically the contents and the timing of bad news disclosures made prior to share repurchases are controlled by the management. Brockman et al. (2008) also state that there is a clear trend that the management tries to buy stocks at low prices prior to share repurchases through intentional and voluntary bad news disclosures on profit prospects. They suggest that the incentivizing force behind this behavior is the management's tendency to protect the value of its stock options and shareholdings.

In this paper, we aim at verifying, from the perspective of the management's opportunism hypothesis, whether the management's intentional information distortion can be detected in the course of fair disclosures and disclosure of share repurchases in an emerging market. In our analysis, we use six years of Korea Securities Dealers Automated Quotation (KOSDAQ) market data, from November 2002 to September 2008. The reason we picked the KOSDAQ market over the KSE market is that the former has greater information asymmetry, and that the opportunistic behaviors of the management can be more pronounced in smaller sized firms (Gomes et al. 2007). Korea is a good representative example of emerging markets to provide an essential insight as to whether Reg FD has been put to use as intended to protect investors or solidify the private interest of management.

3. Sample and Methodology

3.1 Sample

In order to measure the momentum variable of the stock market and accounting data in the years before Reg FD was introduced, we set our research time window (January 2001-September 2008) beginning from two years prior to November 2002 when Reg FD was first implemented. Data on the relevant firms' fair disclosures and disclosures on share repurchases come from the electronic disclosure system (www.dart.fss.or.kr), and we use the FNGuide for corporate financial data and stock returns.

We set the event period for the relationship between fair disclosures and share repurchase as 30 days prior to the disclosure dates of share repurchases and 30 days after the disclosure dates of completed share repurchases. As sample firms for our study, we select those firms that made more than one fair disclosure during either one of the above two periods. Those firms that made more than one fair disclosure during the 30-day window prior to the disclosure dates of share repurchases were taken as samples for "pre-share repurchase disclosure," and those firms that made more than one fair disclosure during the 30-day window following the disclosure dates of completed share repurchases were taken as samples for "post-share repurchase disclosure".

Table 1 provides the details of the total samples used for this paper. The key to the data analysis for this paper is how much more explanatory the disclosure data within the event period is than the disclosure data outside of the event period. For instance, as for pre-share repurchase samples for the KOSDAQ market, those firms made 289 fair disclosures during the event period. If we can show that these disclosures have statistically more significant positive or negative relationships with the firms' stock returns than 4,767 fair disclosures made outside of the event period, this can be considered as supporting evidence for the hypothesis that fair disclosures made within the event period have some ulterior motives.

Table 1. Sample selection

Number	Pre-share repurchase disclosures	Post-share repurchase disclosures
Number of share repurchases of sample firms	264	240
Number of sample firms	150	139
Number of fair disclosure of sample firms during the event period	289	271
Number of fair disclosure of sample firms except during the event period	4767	4051
Total number of fair disclosure of sample firms	5056	4322
Good News	2812	2421
Bad News	2244	1901

Description: Our sample firms are selected based upon whether they provide fair disclosures 30 days before the share repurchase announcement and 30 days after the completed share repurchases from October 2002 to September 2008. Those firms that made more than one fair disclosure during the 30-day window prior to the disclosure date of share repurchases are taken as samples for "pre-share repurchase disclosures," and those firms that made more than one fair disclosure during the 30-day window following the disclosure date of completed share repurchases are taken as samples for "post-share repurchase disclosures." Criteria to classify fair disclosures into good news or bad news is a positive or negative sign of excess return on the basis of KOSDAQ100 index for the three day period running from one day prior to the disclosure to one day after the disclosure [-1, 1].

Criteria to classify fair disclosures into good news or bad news is a positive or negative sign of excess return on the basis of KOSDAQ 100 index for the three day period running from one day prior to the disclosure to one day after the disclosure [-1, 1]. Namely, if the index's excess return had a positive sign, the disclosures were considered good news, and if negative, bad news.

3.2 Methodology

In order to examine whether the management shows opportunistic behaviors of strategically and systematically distorting information in the context of the relationship between fair disclosures and share repurchases, we run two regression analyses.

The first step is logit regression analysis using a dummy variable called GN as its dependent variable. As for GN, if a firm's fair disclosure is considered good news, 1 is assigned as its value. If bad news, 0 is assigned. In other words, it means that the closer GN is to 1, the more likely it is that fair disclosures will be good news.

The next step is multiple regression analysis using a continuous variable called SRET as a dependent variable. SRET is the size of excess return based on the stock price index for a given KOSDAQ 100 company from one day prior to the disclosure to one day after it [-1, 1]. Namely, SRET is a continuous variable of GN, the aforementioned discrete variable. If SRET is positive, GN has 1 as its value. If negative, 0.

More specifically, this paper employs the following regression analysis model to conduct empirical analysis.

$$\Pr(GN_t) = \alpha + \beta_0 DRepD_t + \beta_1 LOG\_MKT_{t-1} + \beta_2 MB_{t-1} + \beta_3 ROE_{t-1} + \beta_4 ABRET_{t-1} + \varepsilon_t \qquad (1)$$

$$SRET_t = \alpha + \beta_0 DRepD_t + \beta_1 LOG\_MKT_{t-1} + \beta_2 MB_{t-1} + \beta_3 ROE_{t-1} + \beta_4 ABRET_{t-1} + \varepsilon_t \qquad (2)$$

Definitions of independent variables from the regression analysis formulas (1) and (2) are as follows.

DRepD: This is a dummy variable that has a value of either 1 or 0. If a given firm's fair disclosure falls within the 30-day window event period before and after share purchases, the dummy variable has 1 as its value. If the fair disclosure occurs outside of the 30-day window, it has 0 as its value.

LOG_MKT: This is the natural logarithm of market capitalization for the fiscal year before the implementation date of a given fair disclosure (t-1).

MB: This is the market to book ratio, where market capitalization for the fiscal year before the implementation date of a given fair disclosure (t-1) is divided by book value (total capital – preferred stock).

ROE: This is the return on equity for the fiscal year before the implementation date of a given fair disclosure (t-1).

ABRET: This is a variable representing excess return of a given company vis-à-vis KODAQ 100 from 90 days prior to the implementation date of a given fair disclosure to two days prior [-90, -2].

Of these independent variables, LOG_MKT serves as a control variable for corporate size; MB for firms' growth opportunities; and ROE for business results and performance; and ABRET is used as an independent variable to control for momentum effect of a firm's stock return.

We are looking to see if we can state with empirical evidence that DRepD, or a fair disclosure made within the 30-day window before or after share repurchases, has a significant influence on frequency of good and bad news for the given stocks' return and on excess return. If we can, this can be used as supporting evidence of the opportunist hypothesis that fair disclosures are driven by the management's incentives. In other words, our results will indicate whether fair disclosures are made by Korean corporate management with intentions other than to eliminate information asymmetry or to make information delivery more efficient as was originally intended by Reg FD.

4. Empirical Results

4.1 Sample Description

Table 2 shows descriptive statistics on the samples before and after share repurchases in the KOSDAQ market. Market capitalization for the KOSDAQ market firms that had share repurchases is 83 billion won prior to share repurchases, and 125.2 billion won after share repurchases. Their average ROEs are 8 percent before share repurchases, and 11.3 percent after share repurchases. Their markets to book ratios are 1.78 and 1.80 respectively for before and after share repurchases, which are higher than figures from the KSE market.

Table 2. Descriptive statistics of sample firms

Variable	Number	Average	Standard deviation	First quartile	Median	Third quartile
Pre-share repurchase disclosure						
DRepD (Dummy)	5,056	0.057	0.232	0.000	0.000	0.000
SRET	5,056	0.008	0.045	-0.016	0.005	0.029
Good news	2,812	0.037	0.036	0.011	0.025	0.049
Bad news	2,244	-0.026	0.026	-0.034	-0.018	-0.009
GN	5,056	0.556	0.497	0.000	1.000	1.000
MKTCAP(100 million won)	5,056	830	1242	147	351	982
MB	5,056	1.787	1.679	0.792	1.338	2.268
ROE	5,056	0.080	0.404	0.030	0.125	0.220
ABRET	5,056	0.047	0.351	-0.157	-0.015	0.158
Post-share repurchase disclosure						
DRepD (Dummy)	4,322	0.063	0.242	0.000	0.000	0.000
SRET	4,322	0.008	0.045	-0.016	0.005	0.028
Good news	2,421	0.035	0.036	0.010	0.024	0.047
Bad news	1,901	-0.027	0.027	-0.037	-0.020	-0.009
GN	4,322	0.560	0.496	0.000	1.000	1.000
MKTCAP(100 million won)	4,322	1252	4939	154	383	1042
MB	4,322	1.806	1.998	0.747	1.280	2.222
ROE	4,322	0.113	0.270	0.039	0.131	0.223
ABRET	4,322	0.054	0.353	-0.148	-0.007	0.159

Description: The table shows descriptive statistics on the sample firms in the KOSDAQ market from 2001 to 2008. DRepD is a dummy variable. If a given firm's fair disclosure falls within the 30-day event periods before and after share purchases, the dummy variable equals 1, 0 otherwise. SRET is the excess return on the basis of KOSDAQ 100 index for the three-day period running from one day prior to the disclosure to one day after the disclosure [-1, 1]. Positive excess return means good news, and negative excess return means bad news. GN is a dummy variable that has a value of 1 if the fair disclosure is good news, and 0 otherwise. MKTCAP is the market capitalizations for the fiscal year before the implementation date of a given fair disclosure. MB is the market to book ratio, where market capitalization for the fiscal year before the implementation date of a given fair disclosure is divided by book value (total capital – preferred stock). ROE is the return on equity for the fiscal year before the implementation date of a given fair disclosure. ABRET is a variable representing excess return of a given company compared to indices of a firm's stock return (KODAQ 100) from 90 days prior to the implementation date of a given fair disclosure to two days before [-90, -2].

4.2 Univariate Analysis

Table 3 lays out the results of our analysis to see whether or not fair disclosures, falling within the 30-day event period before or after share repurchases, affect independence of sample firms' fair disclosures. To this end, a matrix is created for the total fair disclosures by sample firms on a univariate basis of good or bad news, or of within or outside the event period. Following this is a chi-square test to examine whether a fair disclosure is within or outside of the event period and if it affects independence of whether a fair disclosure is good or bad news.

The results show that those firms that made fair disclosures within 30 days prior to share repurchases were making bad news disclosures with a significantly higher frequency compared to those firms that made disclosures more than 30 days prior to share repurchases. Also, the chi square value is 4.68, statistically significant within the 1 percent significance level. On the other hand, firms made good news disclosures significantly more frequently within 30 days after share repurchases. We are also able to see that the subsequent size of excess return changed.

In the pre-share repurchase samples, if fair disclosures do not fall within the event period, excess return is around 0.87 percent, but if fair disclosures occur during the event period, excess return is close to 0 percent, meaning excess return is unattainable. The t-test coefficient for the difference of return distribution is -3.13, displaying difference at a quite high significance level. In the case of post-share repurchase samples, significance turns out to be a bit lower. Overall, our results in Table 3 show that fair disclosures of bad news prior to share repurchases and fair disclosures of good news following share repurchases affect excess returns of the firms as well as the frequency of good or bad disclosures.

Table 3. Univariate analysis

Panel A : Univariate Test of Good/Bad FD dummy						
	Pre-Share Repurchase Disclosure			Post-Share Repurchase Disclosure		
	Good news	Bad news	Total	Good news	Bad news	Total
Within the event period (± 30)	143	146	289	138	133	271
	49%	51%		51%	49%	
Outside the event period	2669	2098	4767	2283	1768	4051
	56%	44%		56%	44%	
Total	2812	2244	5056	2421	1901	4322
Chi-square Test on Difference	(4.68)**			(3.04)*		
Panel B : Univariate test of Excess return of FD						
	Pre-share repurchase disclosure			Post-share repurchase disclosure		
Within the event period (± 30) (1)	0.0004			0.0024		
	-0.17			-0.97		
Outside the event period (2)	0.0087			0.0079		
t-value	(13.26)***			(11.28)***		
Mean difference: (1)-(2)	-0.0083			-0.0055		
t-value	(-3.13)***			(-2.14)**		

Description: This table presents the results of analysis to see whether or not fair disclosures made within the 30-day event periods before or after share repurchases affect independence of firms' fair disclosures. The panel A shows the univariate analysis presents the frequency of good and bad news based on whether fair disclosures are made within the event period (± 30 days), and tests the independence of good and bad news fair disclosures through chi-squire tests. The panel B presents the average value of excess return based on whether or not fair disclosures fall within the event periods, and tests whether the difference between the two values are significant. Pre-share repurchase event period means the 30-day window prior to the beginning of a given firm's share repurchase. Post-share repurchase event period means the 30-day window following the completion of a given firm's share repurchase. Those firms that made a fair disclosure during the 30-day window prior to the disclosure date of share repurchases are taken as samples for "pre-share repurchase disclosure," and those firms that made a fair disclosure during the 30-day window following the disclosure date of completed share repurchases are taken as samples for "post-share repurchase disclosure." If a given firm's stock return exceeds the index's return (KODAQ 100) during the three-day period running from one day prior to the disclosure to one day after the disclosure [-1, 1], the fair disclosure is classified as good news. Otherwise, it is classified as bad news. Levels of significance are indicated by ***, **, and * for 1%, 5%, and 10%, respectively.

4.3 Multivariate Analysis

Table 4 shows the outcomes of logit regression analysis and multiple regression analysis, which are to see whether fair disclosures of the sample firms which fall within the event period (DRepD=1) still have statistically significant effects on the frequency of good and bad news disclosures (GN) and excess return of given firms' stocks (SRET) even after other independent variables are controlled for, such as firms' sizes (LOG_MKT), growth potentials (MB), corporate performance (ROE), and momentum (ABRET).

Per the pre-share repurchase samples, both logit analysis and multiple regression analysis show significantly negative value for coefficients at 10 and 1 percent significance levels. It means that if a fair disclosure occurs within the event period prior to share repurchases (DRepD=1), the likelihood of bad news fair disclosures (GN) is higher than in normal times, and excess return at the time of fair disclosures is at -0.76 percent. Probability conversion also shows that as for the pre-share repurchase sample, the likelihood of bad news disclosures is approximately 6.06 percent higher than when the disclosures do not fall within the event period. Therefore, as in univariate analysis, those KOSDAQ firms included in the pre-share repurchase samples show a higher frequency of bad news disclosures when disclosures fall within the 30-day event period compared to the normal times, and the size of negative excess return is statistically significant. This can be considered empirical evidence that the high-level management's opportunistic behaviors do exist in the pre-share repurchase sample for the KOSDAQ market.

In both samples of panels A and B, LOG_MKT variable representing the corporate size has significantly negative values. This suggests that firms of bigger sizes have less frequent good news disclosures and less excess return at the time of fair disclosures, which appears to be attributable to the fact that the amount of information transmitted varies among the firms. Lang and Lundholm (1993) insist that bigger firms have lower information costs because firms' information costs can be classified as fixed costs. Larger firms have more active information transmission activities than smaller firms, so all the information about the former, including bad news disclosures, are delivered to the market. In addition, firms' growth potential variable (MB) and momentum variable (ABRET) have a significantly negative relationship with the size of excess return, which implies that sample firms' momentum effect is not supported on the disclosure dates.

Table 4. Multivariate analysis

Panel A: Logit regression with GN as dependent variable			Panel B: Multiple regression with SRET as dependent variable		
	Coefficient (Wald-statistic)			Coefficient (t-statistic)	
Variable	Pre-Repurchase Disclosure	Post-Repurchase Disclosure	Variable	Pre-Repurchase Disclosure	Post-Repurchase Disclosure
Intercept	0.8834	0.9514	Intercept	0.0283	0.0277
	(23.58)***	(23.41)***		(7.00)***	(6.47)***
DRepD	-0.2451	-0.2278	DRepD	-0.0076	-0.0038
	(3.63)*	(2.82)*		(-2.65)***	(-1.29)
LOG_MKT	-0.0987	-0.1004	LOG_MKT	-0.0028	-0.003
	(9.02)***	(8.31)***		(-3.89)***	(-3.90)***
MB	-0.0082	-0.0203	MB	-0.0007	-0.0001
	-0.14	-0.95		(-1.45)	(-0.26)
ROE	0.0639	0.0392	ROE	-0.0005	-0.0034
	-0.60	-0.10		(-0.25)	(-1.25)
ABRET	-0.4781	-0.4774	ABRET	-0.0134	-0.0123
	(30.85)***	(25.11)***		(-7.16)***	(-6.26)***
Change in Probability (%)	6.06	5.61	Repurchasing Effect (%)	0.76	0.38
N	5,056	4,322	N	5,056	4,322
Likelihood Ratio	43.98	46.18	Adj-R Square	0.016	0.015
Percent Concordance	55.2	55.7			

Description: This table describes the regression analysis examining whether or not fair disclosures fall within the 30-day event period before or after share repurchases affects whether the fair disclosures are considered good or bad news disclosures. DRepD is a dummy variable. If a given firm's fair disclosure falls within the 30-day window event periods before and after share purchases, its value is 1. Otherwise, its value is 0. SRET is the excess return on the basis of stock return indices for given firms (KODAQ 100) for the three-day period running from one day prior to the disclosure to one day after the disclosure [-1, 1]. Positive excess return means good news, and negative excess return means bad news. GN is a dummy variable that has a value of 1 if the fair disclosure is good news, or 0 otherwise. LOG_MKT is the natural logarithm of market capitalizations for the fiscal year before the implementation date of a given fair disclosure (t-1). MB is the market to book ratio, where market capitalization for the fiscal year before the implementation date of a given fair disclosure (t-1) is divided by book value (total capital – preferred stock). ROE is the return on equity for the fiscal year before the implementation date of a given fair disclosure (t-1). ABRET is a variable representing excess return of a given company compared to its stock return index (Kospi 200 for securities and KODAQ 100 for KOSDAQ) from 90 days prior to the implementation date of a given fair disclosure to two days before [-90, -2]. Panel A shows the outcome of a logit regression with GN, a dummy variable, as a dependent variable, while panel B shows the outcome of a multiple regression analysis using SRET, a continuous variable, as a dependent variable. The Change in Probability in panel A is the probability difference between when DRepD is 1 and when it is 0 while variables in the logit regression analysis formula other than DRepD are replaced with the median value of descriptive statistics. Repurchasing effect in panel B is the difference of SRET values (excess return over the three-day period) when DRepD has value 1 and 0, respectively, which is calculated by using multiple regression analysis. We correct the standard errors for heteroskedasticity and double-cluster the errors at the firm and time level. Levels of significance are indicated by ***, **, and * for 1%, 5%, and 10%, respectively.

4.4 Two-Stage Least Squares Regression Analysis

The results of the analyses laid out thus far are not sufficient to determine whether the management intentionally distorts information. This necessitates a two-stage regression analysis. The purpose of the two-stage regression analysis is to eliminate endogenous variables affecting share repurchases and see if the fair disclosures made before and after share repurchases (DRepD) still affect the frequency of good and bad news (GN), and excess return (SRET). For the purpose of this paper, we adopt the following first stage regression analysis formula based on the methodology by Brockman and Chung (2001) and Brockman et al. (2008).

$$\Pr(\text{DRepD}_t) = \delta_0 + \delta_1\text{Risk-free rate}_t + \delta_2\text{CFO}_{t-1} + \delta_3\text{MKTMOV}_{t-1}$$
$$+\delta_4\text{NUMREP}_{t-1} + \delta_5\text{LOG\_MKT}_{t-1} + \delta_6\text{MB}_{t-1} + \delta_7\text{ROE}_{t-1} + \delta_8\text{ABRET}_{t-1} + e_{it} \tag{3}$$

Definitions of new independent variables in the regression analysis formula (3) are as follows.

Risk-free rate: As for risk-free rate, we use 364-day average value for foreign exchange stabilization bonds' interest rates for years when share repurchases occurred.

CFO: This is a ratio of cash flows generated by given firms' business operations for the fiscal year preceding the date of fair disclosures (t-1) over total asset.

MKTMOV: This is monthly standard deviations of average price to earnings ratio for the KOSDAQ 100 index for the fiscal year preceding the date of fair disclosures (t-1).

NUMREP: This is a ratio of changes in the number of treasury stocks by given firms for the fiscal year

preceding the date of fair disclosures (t-1) over total number of listed stocks.

For the two-stage regression analysis, DRepD from the previous regression analysis formulas (1) and (2) is replaced with the probability drawn from the regression analysis formula (3) of the first stage.

Table 5 shows the results of the two-stage regression analysis. Analytical results for the pre-share repurchase samples mostly coincide with those of the regression analyses using formulas (1) and (2). In panel A where the frequency of good and bad news disclosures is used as a dependent variable, the coefficient of DRepD is negative, and the level of significance is approximately 10.75 percent. In panel B where SRET, which represents the size of excess return caused by the fair disclosures within the event period, is used as a dependent variable, the significance level is very high within one percent, and the excess return is negative 7.3 percent. Therefore, even after pre-share repurchase endogenous variables are controlled for, fair disclosures in the KOSDAQ market within the event period are highly likely to be bad news. In addition, the subsequent negative excess return is statistically significant, and economically sizeable. The sizes and significance of LOG-MKR and ABRET coefficients in Table 5 are not so much different from the results of formulas (1) and (2).

Table 5. Two-stage least squares regression analysis

| | Dependent variables | | | | | |
| | Pre-Repurchase Disclosure | | | Post-Repurchase Disclosure | | |
Variable	DRepD	GN	SRET	DRepD	GN	SRET
Intercept	-3.1098	0.8482	0.0296	-1.6034	0.9662	0.0280
	(24.83)***	(19.63)**	(6.94)***	(6.63)***	(20.26)***	(6.00)***
Risk-Free Rate	8.7038			-19.8311		
	(-1.05)			(5.58)**		
CFO	8.6673			3.6788		
	(4.71)**			(-0.79)		
MKTMOV	-5.7542			-8.9366		
	(4.60)**			(8.20)***		
NUMREP	-5.814			-4.3238		
	(16.17)***			(7.54)***		
DRepD		-1.6973	-0.0737		-2.1887	-0.0455
		(2.59)	(-3.14)***		(1.86)	(-1.30)
LOG_MKT	-0.0595	-0.0779	-0.0025	-0.0198	-0.0887	-0.0028
	(-0.55)	(5.21)**	(-3.34)***	(0.06)	(5.97)**	(-3.49)***
MB	0.0951	-0.0127	-0.0005	0.1232	-0.0072	0.0002
	(3.49)**	(0.26)	(-0.89)	(9.54)***	(0.06)	(0.39)
ROE	2.0630	0.0969	0.0021	1.2037	0.1030	-0.0018
	(23.02)*	(1.03)	(0.97)	(7.78)***	(0.49)	(-0.57)
ABRET	-1.7949	-0.5499	-0.0171	-0.0235	-0.4675	-0.0124
	(32.84)***	(28.42)***	(-7.66)***	(0.01)	(23.57)***	(-6.18)***
N	4470	4470	4470	3790	3790	3790
Likelihood Ratio	129.26	40.51		60.57	40.36	
Percent Concordance	70.7	55.1	0.0178	63.2	55.5	0.0147

Description: This table shows the results of a two-stage regression analysis aimed at eliminating endogenous variables. In panel A, a two-stage logit regression is used, and in panel B, a two-stage multiple regression analysis is used. In the first stage, we separate coefficient values of variables that affect a firm's share repurchases. Using this, we analyze the effect of whether or not a fair disclosure falls within the pre- or post-repurchase event periods on whether a fair disclosure is considered good or bad news. DRepD is a dummy variable. If a given firm's fair disclosure falls within the 30-day window event periods before and after share purchases, its value is 1. Otherwise, its value is 0. SRET is a variable that represents the excess return vis-à-vis a given firm's stock return index (KODAQ 100) for the three-day period running from one day prior to the disclosure to one day after the disclosure [-1, 1]. Positive excess return means good news and negative excess return means bad news. GN is a dummy variable that has the value of 1 if the fair disclosure is good news, and 0 if bad news. LOG_MKT is the natural logarithm of market capitalization for the fiscal year before the implementation date of a given fair disclosure (t-1). MB is the market to book ratio, where market capitalization for the fiscal year before the implementation date of a given fair disclosure (t-1) is divided by book value (total capital – preferred stock). ROE means the return on equity for the fiscal year before the implementation date of a given fair disclosure (t-1). ABRET is a variable representing excess return of a given company vis-à-vis KODAQ 100 from 90 days prior to the implementation date of a given fair disclosure to two days before [-90, -2]. Risk-free rate is a newly added independent variable for the first stage of regression analysis in the two-stage approach. As for risk-free rate, we use 364-day average value for foreign exchange stabilization bonds' interest rates for years when share repurchases occurred. CFO is a ratio of cash flows generated by given firms' business operations in the fiscal year preceding the date of fair disclosures (t-1) over total asset. MKTMOV is the monthly standard deviations of average price to earnings ratio for KOSDAQ 100 in the fiscal year preceding the date of fair disclosures (t-1). NUMREP is a ratio of changes in the number of treasury stocks by given firms in the fiscal year preceding the date of fair disclosures (t-1) over total number of listed stocks. We correct the standard errors for heteroskedasticity and double-cluster the errors at the firm and time level. Levels of significance are indicated by ***, **, and * for 1%, 5%, and 10%, respectively.

5. Robustness Tests

5.1 Analysis on the Management's Incentives Considering Stock Compensation Propensity

To strengthen our hypothesis that the management distorts information intentionally and systematically and it discloses the intent strategically through fair disclosures, we need to find out what motivates the management to act in such a manner. Brockman et at. (2008) argue that the management's incentives would vary depending on the stock options of the management and CEO's stock ownership, and verify the hypothesis by adding relevant factors as independent variables. The results show that the management's stock options and stock ownership have a statistically significant relationship with the frequency of good and bad news disclosures and the subsequent size of excess return. This serves as empirical evidence for the claim by Brockman et al. (2008) that the management's opportunistic behaviors are motivated by the incentives regarding its shareholdings in the US market.

Therefore, for the purpose of this paper, we add the aforementioned two independent variables to run multivariate regression analysis. The additional formula is as follows.

$$\Pr(\text{GN}_t) = \alpha + \beta_0\text{DRepD}_t + \beta_1\text{STK}_{t-1} + \beta_2\text{DRepD}_t * \text{STK}_{t-1} + \beta_3\text{LOG\_MKT}_{t-1}$$
$$+ \beta_4\text{MB}_{t-1} + \beta_5\text{ROE}_{t-1} + \beta_6\text{ABRET}_{t-1} + \varepsilon_t \tag{4}$$

$$\text{SRET}_t = \alpha + \beta_0\text{DRepD}_t + \beta_1\text{STK}_{t-1} + \beta_2\text{DRepD}_t * \text{STK}_{t-1} + \beta_3\text{LOG\_MKT}_{t-1}$$
$$+ \beta_4\text{MB}_{t-1} + \beta_5\text{ROE}_{t-1} + \beta_6\text{ABRET}_{t-1} + \varepsilon_t \tag{5}$$

STK is used in two different ways for Table 6.

1) STKOPT: This is the ratio of total value of stock options held by a given firm's CEO and executives in the fiscal year preceding the fair disclosure dates (t-1), which was calculated using Black-Scholes option pricing model, over the market capitalization.

2) STKHLD: {Total value of stock options held by a given firm's CEO and executives using Black-Scholes option pricing model (same as STKOPT's numerator value) + (holdings by CEO and persons with a special relationship × year-end stock prices)} / total market value.

The purpose of Table 6 is to see whether a firm's stock compensation propensity causes the relationship between fair disclosures and share repurchases. If a firm makes a fair disclosure within the event period (DRepD=1), and the change in the firm's stock compensation ratio shows a significant effect on the frequency of good and bad news disclosures (GN) and the subsequent size of excess return (SRET), the stock compensation ratio (STKOPT, STKHLD) can be considered a cause for the management's behavior to distort information. Therefore, coefficients for DRepD*STKOPT and DRepD*STKHLD need to be checked for their statistical significance.

According to the results of analysis on Table 6, the significance level of the negative coefficient for DRepD in the pre-share repurchase samples, which appeared to remain significant before, had a t value of 1.60 only when STKOPT and SRET from panel B were used as dependent variables. In other words, it was significant only at the significance level of 10.96 percent. Also, coefficients for DRepD*STKOPT and DRepD*STKHLD, interaction terms that require the most attention, turned out to be almost insignificant in the pre-share repurchase samples. Thus, empirical evidence supporting the hypothesis of the management's opportunistic behaviors that was found in the pre-share repurchase samples substantially loses its significance if combined with the management's incentive for stock compensation, and coefficients for the interaction term are not significant. This appears to suggest that firms' behaviors to distort information using bad news disclosures do not result from incentives related to the management's stock compensation.

However, in the post-share repurchase samples, the coefficient for DRepD*STKHLD had a significantly positive correlation at below 5 and 1 percent significance levels. This leads us to believe that when firms in the post-share repurchase samples make fair disclosures within the event period (DRepD=1), the frequency of good news disclosures (GN) and also the subsequent excess return(SRET) tend to increase depending on the management's stock options and shareholdings ratio for CEO and related parties. This implies that when making fair disclosures after share repurchases, firms have an incentive to protect the value of their assets.

Table 6. Analysis on the management's incentives for bad FD

Panel A: Logit Regression with GN as Dependent Variable				Panel B: Multiple Regression with SRET as Dependent Variable				
	Coefficient (Wald-statistic)				Coefficient (t-statistic)			
Variable	Pre-Repurchase Disclosure		Post-Repurchase Disclosure		Variable	Pre-Repurchase Disclosure		Post-Repurchase Disclosure	
Intercept	0.7578	0.7652	1.1268	1.0068	Intercept	0.0236	0.0230	0.0291	0.0265
	(3.00)*	(11.27)***	(5.27)**	(17.43)***		(2.60)***	(4.61)***	(2.96)***	(5.14)***
DRepD	-0.2515	-0.0418	-0.8344	-1.1781	DRepD	-0.0114	-0.0064	-0.0154	-0.0247
	(0.54)	(0.01)	(5.56)**	(8.66)***		(-1.60)	(-0.81)	(-2.18)**	(-2.98)***
LOG_MKT	-0.0482	-0.0891	-0.1117	-0.1031	LOG_MKT	-0.0017	-0.0027	-0.0032	-0.0032
	(0.47)	(6.31)**	(2.05)	(7.39)***		(-1.14)	(-3.42)***	(-2.02)**	(-3.90)***
MB	-0.0231	-0.0034	-0.003	-0.0095	MB	-0.0007	-0.0006	0.0005	0.0002
	(0.32)	(0.02)	(0.01)	(0.19)		(-0.80)	(-1.23)	-0.73	-0.37
ROE	-0.0751	0.0731	-0.0586	0.0809	ROE	-0.0028	0.0004	-0.0016	-0.0001
	(0.14)	(0.72)	(0.09)	(0.36)		(-0.68)	(0.21)	(-0.41)	(-0.04)
ABRET	-0.9479	-0.4681	-0.5522	-0.4718	ABRET	-0.0174	-0.0131	-0.001	-0.0124
	(12.57)***	(26.19)***	(5.85)**	(22.09)***		(-3.12)***	(-6.67)***	(-2.08)**	(-6.05)***
STKOPT	-91.9081		-106.1		STKOPT	-1.6000		-2.0644	
	(1.37)		(1.67)			(-1.33)		(-1.82)*	
DRepD*STKOPT	-286.1		120.8		DRepD*STKOPT	1.9510		7.482	
	(0.46)		(0.14)			(0.24)		-1.19	
STKHLD		1.2591		-1.6887	STKHLD		0.0963		0.0409
		(0.30)		(0.45)			(1.90)*		-0.76
DRepD*STKHLD		-6.0397		29.2747	DRepD*STKHLD		-0.0483		0.5869
		(0.38)		(6.94)**			(-0.22)		(2.58)***
Change in Probability (%)	-3.57	-3.29	-1.42	-16.4	Repurchasing Effect (%)	-0.09	0.1	-0.37	-1.34
N	802	3964	836	3349	N	802	3964	836	3349
Likelihood Ratio	23.02	35.10	24.68	44.33					
Percent Concordance	59.6	54.9	57.8	55.8	Adj-R Square	0.019	0.017	0.014	0.018

Description: This table shows analysis on whether a firm's stock compensation propensity causes the relationship between fair disclosures and share repurchases. In order to examine whether firms with high rate of stock compensation for CEO and executives tend to control information flow, we use new variables of SKTOPT and SKTHLD. Panel A carries out a logit regression with GN, a dummy variable, as a dependent variable while panel B implements a multiple regression analysis using SRET, a continuous variable, as a dependent variable. DRepD is a dummy variable. If a given firm's fair disclosure falls within the 30-day window event periods before and after share purchases, its value is 1. Otherwise, its value is 0. SRET is a variable that represent excess return of a given firm vis-à-vis its stock return index (KODAQ 100) for the three-day period running from one day prior to the disclosure to one day after the disclosure [-1, 1]. Positive excess return means good news and negative excess return means bad news. GN is a dummy variable that has a value of 1 if the fair disclosure is good news, and of 0 otherwise. STKOPT is the ratio of total value of stock options held by a given firm's CEO and executives in the fiscal year preceding the fair disclosure dates (t-1), calculated by using Black-Scholes option pricing model, over the market capitalization. STKHLD is the total value of stock options held by a given firm's CEO and executives, calculated by using Black-Scholes option pricing model (same as STKOPT's numerator value)+ (holdings by CEO and related parties×year-end stock prices), divided by total market value. The Change in Probability in panel A is the probability difference between when DRepD is 1 and when it is 0 while variables in the logit regression analysis formula other than DRepD are replaced with the median value of descriptive statistics. Repurchasing effect in panel B is the difference of SRET values (excess return over the three-day period) when DRepD has value 1 and 0, respectively, which is calculated by using multiple regression analysis. . We correct the standard errors for heteroskedasticity and double-cluster the errors at the firm and time level. Levels of significance are indicated by ***, **, and * for 1%, 5%, and 10%, respectively.

5.2 Analysis on Accruals

From 5.1, we learn that the reasons behind making bad news disclosures for the pre-share repurchase samples are not correlated with the management's incentives. To examine another idea concerning intentionality of fair disclosures, we run a regression analysis (2) using accruals as a dependent variable. This variable, derived from accrual-based accounting, is calculated in the following way:

Accruals = (current asset – cash and cash equivalents - securities)-(current liabilities-short term

borrowings-current portion of long term borrowings)-depreciation (6)

Accruals can affect operating income, but has no effect on operating cash flows, so it can be used either as a variable measuring a firm's profit quality, or as an indicator gauging the likelihood of a firm's window dressing. By conducting a multivariate analysis where dependent variable SRETt is replaced with AC/Bt (ratio of accruals over market capitalization), we test how the dummy variable DRepD=1 affects the management's accruals.

In Table 7, the pre-share repurchase sample's DRepD coefficient is significantly negative at around a 6 percent significance level. If we consider accruals as a proxy reflecting the management's intent on the firm's accounting, we can state that intentional fair disclosures made in a given year are actually materialized in the following year. Therefore, we believe that changes in accruals only seen in the pre-share repurchase samples serve as empirical evidence that the management's intent is reflected on the act of making fair disclosures.

Table 7. Analysis on accruals

Variable	Coefficient (t-statistic)	
	Pre-repurchase disclosure	Post-repurchase disclosure
Intercept	-0.0211	0.1103
	(-0.57)	(4.38)***
DRepD	-0.0512	-0.0086
	(-1.87)*	(-0.47)
LOG_MKT	0.0092	-0.0151
	(1.35)	(-3.33)***
MB	-0.0259	-0.0004
	(-5.50)***	(-0.16)
ROE	0.1810	0.0187
	(10.69)***	(1.16)
ABRET	0.0107	0.007
	(0.62)	(0.61)
N	4746	4021
Adj-R square	0.049	0.004

Description: This table tests whether a fair disclosure falls within the pre- and post-repurchase event periods affects a firm's accruals in the following year. AC/B, a dependent variable, is calculated by dividing accounting accruals ([current asset – cash and cash equivalents – securities] – [current liabilities-short term borrowings – current portion of long term borrowings]-depreciation) by book value (total capital – preferred stock). DRepD is a dummy variable. If a given firm's fair disclosure falls within the 30-day window event periods before and after share purchases, its value is 1, and 0 otherwise. SRET is the excess return vis-à-vis a given firm's stock return index (KODAQ 100) for three day period running from one day prior to the disclosure to one day after the disclosure [-1, 1]. Positive excess return means good news and negative excess return means bad news. GN is a dummy variable that has a value of 1 if the fair disclosure is good news, and 0 otherwise. LOG_MKT is the natural logarithm of market capitalization for the fiscal year before the implementation date of a given fair disclosure (t-1). MB is the market to book ratio, where market capitalization for the fiscal year before the implementation date of a given fair disclosure (t-1) is divided by book value (total capital – preferred stock). ROE means the return on equity for the fiscal year before the implementation date of a given fair disclosure (t-1). ABRET is a variable representing excess return of a given company vis-à-vis a given firm's stock return index (KODAQ 100) from 90 days prior to the implementation date of a given fair disclosure to two days before [-90, -2]. We correct the standard errors for heteroskedasticity and double-cluster the errors at the firm and time level. Levels of significance are indicated by ***, **, and * for 1%, 5%, and 10%, respectively.

5.3 Analysis on Market's Boom and Bust

Table 8 shows a sensitivity analysis from the perspective of the market's boom and bust. Based on the result of duration analysis on the KOSDAQ market's stock return, we define the years from 2003 to 2007 as boom, and the years 2002 and 2008 as bust, and divide samples before running regression analyses (1) and (2). The outcome shows that the coefficients of DRepD in the boom years in the pre-share repurchase samples turn out significant within the significance level of 5.34 percent and 0.3 percent, respectively for GN and SRET. The frequency of bad news disclosures and the subsequent excess return were negative in the aforementioned findings. This suggests that intentional fair disclosures are more actively made during the boom years, and the management is more driven to purchase the firm's stocks at a lower price during those years.

Table 8. Analysis on market's boom and bust

Panel A: Logit Regression with GN as Dependent Variable				
	Coefficient in Bust Market (2002 & 2008)		Coefficient in Boom Market (2003 ~ 2007)	
Variable	Pre-Repurchase Disclosure	Post-Repurchase Disclosure	Pre-Repurchase Disclosure	Post-Repurchase Disclosure
Intercept	2.1435	1.9553	0.7991	0.8826
	(6.62)**	(4.45)**	(18.02)***	(18.92)***
DRepD	-0.0582	-0.5559	-0.2647	-0.1839
	(0.02)	(1.68)	(3.73)*	(1.64)
LOG_MKT	-0.3244	-0.2702	-0.0797	-0.0865
	(5.81)**	(3.28)*	(5.35)**	(5.64)**
MB	0.0939	0.0381	-0.0244	-0.0292
	(2.72)*	(0.48)	(1.07)	(1.58)
ROE	0.0414	0.0594	0.0397	0.0279
	(0.01)	(0.01)	(0.22)	(0.05)
ABRET	-0.4648	-0.5470	-0.4776	-0.4706
	(1.05)	(1.11)	(29.60)***	(23.58)***
N	419	365	4637	3957
Likelihood Ratio	7.05	6.95	41.81	41.09
Percent Concordance	56.4	58.1	55.1	55.5
Panel B: Multiple Regression with SRET as Dependent Variable				
	Coefficient in Bust Market (2002 & 2008)		Coefficient in Boom Market (2003 ~ 2007)	
Variable	Pre-Repurchase Disclosure	Post-Repurchase Disclosure	Pre-Repurchase Disclosure	Post-Repurchase Disclosure
Intercept	0.0532	0.0716	0.0276	0.0265
	(2.49)**	(2.86)***	(6.72)***	(6.16)***
DrepD	0.0043	-0.0140	-0.0090	-0.0026
	(0.43)	(-1.21)	(-2.99)***	(-0.85)
LOG_MKT	-0.0068	-0.0091	-0.0027	-0.0028
	(-1.99)**	(-2.26)**	(-3.35)***	(-3.65)***
MB	0.0023	0.0028	-0.0011	-0.0003
	(1.60)	(1.86)*	(-2.08)**	(-0.56)***
ROE	-0.0292	-0.0500	0.0001	-0.0011
	(-2.74)***	(-3.20)***	(0.05)	(-0.41)
ABRET	-0.0064	-0.0074	-0.0136	-0.0122
	(-0.55)	(-0.53)	(-7.25)***	(-6.23)***
N	419	365	4637	3957
Adj-R Square	0.026	0.047	0.019	0.015

Description: This table shows the outcome of sensitivity analysis by classifying selected samples differently based on the market conditions. Years 2002 and 2008 are classified as samples for bearish market, and years from 2003 and 2007 are classified as samples for bullish market. DrepD is a dummy variable. If a given firm's fair disclosure falls within the 30-day window event periods before and after share purchases, its value is 1, and 0 otherwise. SRET is the excess return vis-à-vis a given firm's stock return index (KODAQ 100) for three day period running from one day prior to the disclosure to one day after the disclosure [-1, 1]. Positive excess return means good news and negative excess return means bad news. GN is a dummy variable that has a value of 1 if the fair disclosure is good news, and 0 otherwise. LOG_MKT is the natural logarithm of market capitalization for the fiscal year before the implementation date of a given fair disclosure (t-1). MB is the market to book ratio, where market capitalization for the fiscal year before the implementation date of a given fair disclosure (t-1) is divided by book value (total capital – preferred stock). ROE means the return on equity for the fiscal year before the implementation date of a given fair disclosure (t-1). ABRET is a variable representing excess return of a given company vis-à-vis a given firm's stock return index (KODAQ 100) from 90 days prior to the implementation date of a given fair disclosure to two days before [-90, -2]. In panel A, a two-stage logit regression is used, and in panel B, a two-stage multiple regression analysis is used. We correct the standard errors for heteroskedasticity and double-cluster the errors at the firm and time level. Levels of significance are indicated by ***, **, and * for 1%, 5%, and 10%, respectively.

6. Conclusions

This paper investigates the relationship between Regulation fair disclosures (Reg FD) and share repurchases to

see whether the management shows opportunistic behaviors through fair disclosures when conducting share repurchases in the domestic stock market.

We compile data from the KOSDAQ market from October 2002, the year when Reg FD was introduced in Korea, to September 2008. Our analyses show four important findings. To begin with, we find that firms that made fair disclosures prior to share repurchases are more likely to make bad news disclosures. The excess return caused by a given disclosure compared to the index is also statistically significant, and is negative. This finding is the first empirical evidence supporting the hypothesis of the management's opportunistic behaviors in emerging markets. Second, in order to determine the causes of the management's opportunistic behaviors, we investigate the effect that the stock compensation propensity has on whether fair disclosures are good or bad news and on the excess return. No significant correlation is seen with bad news disclosures in the pre-share repurchase samples. Therefore, it is difficult to state that the management makes bad news disclosures with a view to raising values of their stock options or shareholdings. That said, given that firms' stock compensation ratio has a significantly positive correlation with good news disclosures, there is an incentive to protect the asset values through fair disclosures made after share repurchases. Third, the regression analysis with accruals as a dependent variable indicates that management's intentional manipulation of accounting is highly likely in the pre-share repurchase samples. Finally, the outcomes of the sensitivity analysis suggest that the management's opportunistic behaviors prior to share repurchases are more pronounced during market booms.

We believe that the results of this study have implications as to whether Reg FD has a significant impact on the changes in the stock market's information environment in emerging economies. In the case of the stock market in the developed countries, a significant amount of information is transmitted through abundant half-yearly and quarterly disclosures aside from Reg FD, which makes the cost of information delivery more of a "fixed cost". This makes it hard to distort information through making fair disclosures on a rolling basis. However, in the emerging markets, information delivery cost is relatively high compared to the developed economies and there is only a small amount of available information in the market. This makes it easy to distort information through fair disclosures, and the management may have an intent to purchase the firm's shares at low prices that are a result of information distortion. Statistically significant coefficients seen in the pre-share repurchase samples of the KOSDAQ market are important empirical evidence supporting such intent.

Acknowledgement

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Note

Note 1. Korea is the second country in the world to enforce this beginning in November 2002.