

Changes in the Information Efficiency of Stock Prices: Additional Evidence

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Previous research shows, using data from three quarters after the implementation of Regulation Fair Disclosure (Reg FD), that there is an improvement in the informational efficiency of stock prices after Reg FD. We compare the informational efficiency of stock prices in four pre-Reg FD quarters (1999-2000) and twelve post-Reg FD quarters (2002-2005). The improvement in the informational efficiency of stock prices previously reported in the immediate aftermath of Reg FD persists in later periods.

Keywords: Regulation FD; Information asymmetry; Earnings announcements; SEC regulations; Stock market efficiency

JEL Classification: G14, G18, M48

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1. Introduction

The Securities and Exchange Commission implemented Regulation Fair Disclosure (Reg FD) on October 23, 2000. The motivation for this regulation was to level the playing field between various types of investors, and to improve the confidence of individual investors in the integrity of the market (SEC 2000). Reg FD requires that when registrants disclose material non-public information, such as advance warnings of earnings results, to securities analysts or other outsiders, such information must also be made public.

Critics of Reg FD have alleged that there would be reduced information flow to the market after the new rule (AIMR, 2001; SIA, 2001). The U.S. Chamber of Commerce has criticized Reg FD as “constitutionally suspect, congressionally unsanctioned intrusion into corporate affairs” (Plitch, 2005). Researchers have addressed such concerns by empirically examining the performance of analysts (forecast errors and dispersions) and through a variety of stock price based measures (informational efficiency, return volatility, and trading volume).

In one of the earliest and most cited studies, Heflin, Subramanyam, and Zhang (HSZ, 2003) use tests of both analyst performance and the informational efficiency of stock prices. HSZ (2003) find that after the implementation of Reg FD there is “no reliable evidence of change in analysts’ earnings forecast errors or dispersion.” However, other studies that use different samples from longer periods show differing results. Bailey, Li, Mao, and Zhong (2003) find that analyst forecast dispersion increases in the post Reg FD period, but that the quality of forecasts does not deteriorate in the post Reg FD period. Mohanram and Sunder (2006) find that analyst forecasts are less accurate, and forecast dispersion is higher, in the post Reg FD period. Findlay and Mathew (2006) also find that Reg FD adversely affects the accuracy of analysts forecasts and note that reduced access to private information after the passage of Reg FD is a possible cause. Agrawal, Chadha and Chen (2006) use data from 15 post-Reg FD quarters, and show that both individual and consensus forecasts are less accurate post-Reg FD, and that forecast dispersion is higher post-Reg FD. Goff, Hulburt, Keasler and

Walsh (2008) investigate the information content of analyst recommendation changes in the post-Reg FD environment. They show that the market reacts to analyst recommendation changes with or without concurrent news. Hence, analyst recommendation changes, in and of themselves, are informative. In summary, the results from later studies related to the accuracy and dispersion of analyst forecasts differ from the initial results reported by HSZ (2003).

HSZ (2003) also test informational efficiency by comparing stock prices before and after earnings announcements. They find that there is *improved* informational efficiency of stock prices prior to earnings announcements. Specifically, HSZ (2003) show that in the post-Reg FD period there are smaller deviations between stock prices on a given day before the earnings announcement and the post-earnings announcement stock prices, after controlling for market-wide stock price movements. Furthermore, in an earlier study, Eleswarapu, Thompson and Venkataraman (2002) find that information asymmetry is lower in the post-Reg FD period, while Chiyachantana, Jiang, Taechapiroontong and Wood (2004) show that Regulation FD has improved liquidity and decreased information asymmetry. In related research, Bailey, Li, Mao, and Zhong (2003) and HSZ (2004) show that Reg FD did not result in increased stock return volatility. Since their post-Reg FD period encompasses the last quarter of 2000 and the first two quarters of 2001, HSZ (2003) note that their study provides early evidence on the immediate effect of Reg FD, and that the “long-term effects of FD are unknown.” A chief economist of the Securities Industry Association states (based on an earlier draft of HSZ, 2003) that the results seem “to run counter to ... the conventional wisdom” and that “a longer period is needed to get a solid statistical picture” (Plitch 2001).

Additional confounding events during 2000 and 2001 could have affected the disclosure patterns and informational efficiency of stock prices, including a recession, the sharp decline in the stock market, and decimalization of stock prices. In addition, the period from October 2001 to July 2002 witnessed unprecedented tumult, starting with the collapse of

Enron and Andersen and culminating in the enactment of the Sarbanes-Oxley Act (SOX). These events likely made firms more cautious about publicly disclosing information. Hence the higher information efficiency in the post-Reg FD period reported by HSZ (2003) would not necessarily continue over the longer term. The possibility that Reg FD could lead to lower informational efficiency needs to be tested with additional evidence using a longer time window.

This paper compares the informational efficiency of stock prices around earnings announcements during 1999-2005. Using the same approach as that used by HSZ (2003), we find that the informational efficiency of stock prices improves in 2002-2003 compared to 1999-2000. Further, the same trend continues in the subsequent periods, as information efficiency is better in 2003-2004 than in 2002-2003, and further improves in 2004-2005 when compared to that of 2003-2004 levels. These findings suggest that the preliminary improvement in the informational efficiency of stock prices reported by HSZ (2003) in the immediate aftermath of Reg FD persists in later periods.

2. Sample and data

As in HSZ (2003), we restrict our sample to all December fiscal year-end firms and require that the sample firms have the following data available during the four pre- and 12 post-Reg FD quarters: (1) current quarters' earnings announcement dates; (2) accounting information for control variables (described later); (3) stock returns. We collect stock returns from the CRSP daily stock data base and accounting information and earnings announcement dates from Compustat. We use four pre-Reg FD quarters: 1999:4, 2000:1, 2000:2, and 2000:3; and twelve post-Reg FD quarters: 2002:4 to 2005:3.

As in HSZ (2003), we require that a firm have data available for both its pre-Reg FD quarter and its corresponding post-Reg FD quarter. We omit the 2001-02 period because of

the tumultuous nature of events related to financial reporting from October 2001 to July 2002. Specifically, Enron announced its restatements in October 2001, and the subsequent events (including the admission of document shredding by Andersen in January 2002) finally culminated in the enactment of the Sarbanes-Oxley Act in July 2002. It is likely that investor confidence was adversely affected in the early months of 2002, and the series of legislative and regulatory efforts of 2002 were aimed at restoring investor confidence. Our final sample includes 5,326 pairs of pre- and post-Reg FD observations for 1,479 distinct firms with 1,336, 1318, 1355, and 1317 firms in the fourth, third, second and first quarters respectively for pre-Reg FD and each post-Reg FD period examined.

3. Results

The testing approach used by HSZ (2003) and this paper assumes that (a) stock prices quickly and correctly reflect all value-relevant information, and (b) the market anticipates much of the information reflected in earnings and hence most of the stock-price changes associated with earnings precede the earnings announcement. If there is better information available in the pre-earnings announcement period, then the stock prices would reflect such information and be close to the full-information post-earnings announcement level.

For each of the 64 trading days prior to an earnings announcement, we compute the absolute cumulative abnormal return (ACAR) as:

$$ACAR_{i,q,x} = \left| \sum_{t=-x}^{+2} AR_{i,q,t} \right| \quad (1)$$

where x is the number of days the accumulation window extends *backward* from the earnings announcement date, and $AR_{i,q,t}$ is firm abnormal return on day t relative to the earnings announcement date of quarter q .¹ As in HSZ (2003), we calculate the abnormal returns as the

¹ The ACAR formula in HSZ (2003) differs from ours in that theirs compounds the abnormal returns as opposed to taking the sum of the abnormal returns as we do. Our results are robust to the choice of

prediction errors from the market-model over the year ending the day before the start of the current quarter. Thus, ACAR measures the earnings news that is not reflected in the stock price as of x days prior to the earnings announcement; hence, higher values of ACAR indicate a higher information gap.

3.1 Univariate results

Figure 1 plots the ACARs from 64 trading days before to two days after the earnings announcement for 1999-2000 and 2002-2003, 2003-2004 and 2004-2005. Both the mean and median ACARs (shown in 1 and 2 respectively) are smaller for 2002-2003 than for 1999-2000 up to the earnings announcement day. Further, continuing the same trend, both the mean and median ACARs (shown in 1 and 2) for 2004-2005 plots below 1999-2000, 2002-2003 and 2003-2004 up to the earnings announcement day. The plots for the later period lie below the earlier period even at the beginning of the quarter. Hence, as in HSZ (2003), we scale each day's mean or median ACAR so that the plots start each quarter at 1.0 and end at 0.² The corresponding standardized figures are presented in 3 and 4. Once again, the plots for 2002-2003 are lower than the corresponding plots for 1999-2000, suggesting greater informational efficiency of stock prices prior to earnings announcements in 2002-2003 than in 1999-2000. The plots for mean and median standardized ACARs for 2003-2004 are the lowermost; however, the plots for 2004-2005 are mixed, with the plot generally lower than in the pre-Reg FD period but with a crossover in the days just prior to the earnings announcement.³

Table 1 reports the mean and median ACARs for various accumulation windows in

ACAR formula.

² HSZ (2003) note that the standardized ACAR measure, while conceptually appealing, has the following problems. First, small denominator problems lead to scaling each day's cross-sectional mean (median) ACAR by the cross-sectional mean (median) ACAR on day -64 , rather than computing the mean (median) of firm specific scaled ACARs. Further, the scaled ACARs do not incorporate differences in informational efficiency *prior* to the current quarter.

³ One confounding factor is that Section 404 of SOX became effective (for accelerated filers) for fiscal years ending on or after November 15, 2004.

1999-2000 and 2002-2005. The last day in each window is the second day after the earnings announcement, while the first day is -1, -2, -5, -10, and -30 relative to the earnings announcement for the five accumulation windows. In every instance, both the mean and median ACARs are lower for 2002-2005 than for 1999-2000; the differences are all statistically significant, using either the mean or median (t-test or median test). The table also provides the proportion of instances where the ACARs are lower (higher) for 2002-2005 when compared to 1999-2000; in every accumulation window, the percentage of firms with lower ACARs in 2002-2005 is significantly greater than the percentage of firms with higher ACARs in 2002-2005.⁴

Overall, the above results indicate that the information efficiency of stock prices prior to earnings announcements is higher in 2002-2005 than in 1999-2000. Further, such superiority is seen throughout the quarter.

3.2 Regression results

The ACAR is a product of two elements: the absolute unexpected earnings as of a particular day before the earnings announcement and a corresponding earnings response coefficient (ERC). Since our objective is to compare the information environment before the earnings announcement, we need to control for factors that can affect the ERC. Hence, as in HSZ (2003), we control for other factors that can be expected to influence the ERC (and thus cause differences in ACARs between the two periods). We estimate the following pooled regression:

⁴ Following HSZ (2003), we also create pseudo-pre-Reg FD and post-Reg FD quarters starting at the first quarter of 1993 and ending at the second quarter of 2000. We use the pseudo-quarters' differences in mean and median ACARs as the benchmark to analyze our results from actual pre- and post-Reg FD quarters. With this approach, we rule out the possibility of time-series variation in the price-response to earnings driving the results.

$$\begin{aligned}
ACAR_{i,q,x} = & a_{0,x} + a_{1,x} 2002 - 05_q + a_{2,x} ABRETVAR_{i,q} + a_{3,x} NEG CAR_{i,q} \\
& + a_{4,x} ABSCAR_{i,q} + a_{5,x} LOSS_{i,q} + a_{6,x} NEGSPEC_{i,q} + a_{7,x} EPRATIO_{i,q} \\
& + a_{8,x} LOGASSET + a_{9,x} BETA + e_{i,q,x}
\end{aligned} \tag{2}$$

The variables, which are the same as in HSZ (2003), are defined as follows:⁵ The main variable of interest is 2002-2005, which equals 1 if firm i's earnings announcement is from 2002-2005. We include ABRETVAR_{i,q} and NEG CAR_{i,q} as controls for inherent price variability. ABRETVAR is the standard deviation of firm i's abnormal return from the market model estimation period for pre-Reg FD period. NEG CAR_{i,q}, a dummy equal to 1 if the cumulative abnormal return over the quarter is negative, captures another dimension of price variability. ABSCAR_{i,q} is the absolute cumulative abnormal return during the entire quarter as firm-quarters with larger total information flow are expected to have larger information gaps and larger ACARs at any given time. LOSS_{i,q} equals 1 if firm i reports a loss in quarter q. NEGSPEC_{i,q} is the absolute value of the special items deflated by total assets, if negative and 0 otherwise.

The remaining control variables following HSZ (2003) are designed to capture non-information related determinants of the ERC. We include EPRATIO as a proxy for expected growth in earnings (Penman 1996). LOGASSET is a proxy for size and BETA is included in the regression to control for risk.⁶

Table 2 reports means and medians for the variables used in our regressions. Reflecting the general decline in stock prices during 2002-2005, the cumulative abnormal returns are negative (NEG CAR) for 50.9 percent of the firm-quarters in our sample; in contrast, only

⁵ HSZ (2003) also include the yield on the 30-yr Treasury bond in their regression. During our sample period the 30-yr bond was not auctioned. For our sample period, the yield for the 10-yr bond is available and when we include it in the regression, multicollinearity is present due to the large discrete change in the bond yield between our pre- and post-Reg FD periods – these periods are separated by 8 quarters. The correlation between the 10-yr bond yield and the 2002-2005 dummy variable is -0.93. When both of these variables are included in the regression, variance inflation factors are greater than 8.0 for both variables. Consequently, we exclude the bond yield from the regressions.

⁶ The results remain unchanged when we exclude LOGASSET and BETA.

41.8 percent of the firms in the 1999-2000 sample have negative CARs. Sample firms report losses (LOSS) in 12.4 percent of the quarters in 2002-2005; once again, this is significantly higher than the proportion of firms reporting a loss in 1999-2000 (11.4 percent).

Table 3 provides the results from the regression for the accumulation windows. The overall model is significant for each window, and the adjusted R-squared of each is comparable to those reported by HSZ (2003). The signs and significance of the variables are generally consistent with expectations. The 2002-2005 dummy variable is negative and significant at $p < .05$ in all of the regressions indicating that the information gap is lower in 2002-2005 than in 1999-2000.

As in HSZ (2003), we perform a variety of sensitivity tests. First, we repeat the analysis for each set of four post-Reg FD quarters separately (such as 2002-2003, 2003-2004 and 2004-2005) and obtain qualitatively similar results. Second, we delete extreme observations and the results remain substantively similar.

4. Summary and conclusions

The SEC promulgated Regulation Fair Disclosure in October 2000, with the expressed desire to make the playing field level between various types of investors and to minimize the selective disclosure of information. Critics have argued that companies would be more reluctant to disclose information prior to earnings announcements in the post-Reg FD period. However, Heflin, Subramanyam and Zhang (2003) report that (a) analysts' forecast errors and dispersion do not deteriorate in the post-Reg FD period, and (b) the informational efficiency of stock prices actually improve after Reg FD. Some later studies, using different samples encompassing longer periods, find that analysts' forecast errors and dispersion increase in the post-Reg FD period, thus calling into question the results of HSZ (2003). In addition, HSZ (2003) caution that because their post-Reg FD period encompasses only three

quarters, the evidence must be viewed as preliminary and hence interpreted with caution. Exacerbating such a concern are potentially confounding events in the period immediately surrounding the implementation of Reg FD, including a recession, a general sharp decline in the stock market, decimalization and accounting scandals. Other studies' finding the HSZ (2003) analyst forecast results not to hold in later periods, combined with the above concerns, motivate our examining whether the increased informational efficiency of stock prices found by HSZ (2003) continue to hold in the longer term.

Using the same approach as HSZ (2003), we find that the informational efficiency of stock prices improves further in 2002-2005 compared to 1999-2000. This finding suggests that the preliminary improvement in the informational efficiency of stock prices reported by HSZ (2003) in the immediate aftermath of Reg FD does indeed persist in later periods.

References

- Agrawal, A., S. Chadha, and M. Chen, 2006. Who is afraid of Reg FD? The behavior and performance of sell-side analysts following the SEC's fair disclosure rules, *Journal of Business*, 79, 2811-2834.
- Association for Investment Management and Research (AIMR), 2001. Analysts, portfolio managers say volume, quality of information have fallen under regulation FD. *CFA Institute: Charlottesville, VA*.
- Bailey, W., H. Li, C. X. Mao, and R. Zhong, 2003. Regulation Fair Disclosure and earnings information: Market, analyst, and corporate responses. *Journal of Finance*, 58, 2487-2514.
- Chiyachantana. C. N., C. X. Jiang, N. Taechapiroontong, and R. A. Wood, 2004. The impact of regulation fair disclosure on information asymmetry and trading: an intraday analysis, *The Financial Review*, 39, 549-577.
<http://www3.interscience.wiley.com/journal/118781567/abstract>
- Collins, D., and S. P. Kothari, 1989. An analysis of the intertemporal and cross-sectional determinants of earnings response coefficients, *Journal of Accounting and Economics* 11, 143-181.
- Eleswarapu, V. R., R. Thompson, and K. Venkataraman, 2004. The impact of Regulation Fair Disclosure: Trading costs and information asymmetry, *Journal of Financial and Quantitative Analysis*, 39, 209-225.
- Findlay, S. and P. Mathew, 2006. An examination of the differential impact of regulation FD on analysts' forecast accuracy, *The Financial Review* 41, 9-31.
<http://www3.interscience.wiley.com/journal/118596692/abstract>
- Goff, D., H. Hulburt, T. Keasler, and J. Walsh, 2008. Isolating the information content of equity analysts' recommendation changes, Post Reg FD, *The Financial Review* 43, 303-321
<http://www3.interscience.wiley.com/journal/119404698/abstract>
- Heflin, F., K. R. Subramanyam, and Y. Zhang. 2003. Regulation FD and the financial information environment: early evidence. *The Accounting Review* 78 (January): 1-37.
- Heflin, F., K. R. Subramanyam, and Y. Zhang, 2004. Stock return volatility before and after Regulation FD, *Working Paper*, University of Southern California.
- Mohanram, P., and S. Sunder, 2006. How has Regulation FD affected the operations of financial analysts?, *Contemporary Accounting Research* 23, 491-525.
- Penman, S., 1996. The articulations of price-earnings ratios and the market-to-book ratios and the evaluation of growth, *Journal of Accounting Research* 34, 235-259.
- Pitt, H., 2002. Testimony before the Committee on Financial Services, (March 13). *U.S. House of Representatives: Washington, DC*.
- Plitch, P. 2001. Deals & deal makers: Dire effects of disclosure rule doubted. *Wall Street Journal*, July 24th, C.14
- _____. 2005. "Fair Disclosure" inhibits speech, U.S. Chamber of Commerce says. *Wall Street Journal*, January 20th, C.3
- Securities Industry Association, 2001. Regulation FD: How is it working? *Research Reports* 4, 15-19.

Table 1

Absolute cumulative abnormal returns and pre- and post-Reg FD earnings announcements

ACAR_{i,q,x} is the absolute cumulative abnormal return from x days before through two days after firm i's quarter q earnings announcement. Abnormal returns are prediction errors from the market model, estimated over the year ending the day before the start of the relevant fiscal quarter. The last quarter of 2000 and first three quarters of 2001 are pre-Reg FD quarters, while the fourth quarter of 2002 to the first three quarters of 2005, are the post-Reg FD quarters. All p-values are two sided. p-values for means are from t-tests of the difference between the pre- and post-Reg FD means; for medians, p-values are from Wilcoxon two sample tests; p-values for difference in percentage of lower/higher post-Reg FD ACARS are from binomial tests. We compute mean and median ACARs for each set of pseudo-pre and pseudo-post-Reg FD quarters in the 15 sets of 16 consecutive quarters from the first quarter of 1993 through the second quarter of 2000. We label the first four in each set pseudo-pre-Reg FD quarters and the last 12 pseudo-post-Reg FD quarters. Each Z statistic is $(D_x - \bar{D}_x / \sigma_x)$ where D_x is the post-Reg FD mean or median ACAR_{i,q,x} minus the pre-Reg FD mean or median ACAR_{i,q,x} and \bar{D}_x and σ_x are the mean and standard deviation, respectively, of the 15 differences between the pseudo post- and pre-Reg FD means or medians.

	ACAR _{i,q,-1}		ACAR _{i,q,-2}		ACAR _{i,q,-5}		ACAR _{i,q,-10}		ACAR _{i,q,-30}	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
1999-2000	0.0558	0.0376	0.0597	0.0408	0.0711	0.0494	0.0908	0.0672	0.1622	0.1238
2002-2005	0.0404	0.0270	0.0426	0.0289	0.0486	0.0336	0.0560	0.0418	0.0886	0.0641
Difference	-0.0154	-0.0105	-0.0171	-0.0119	-0.0225	-0.0157	-0.0328	-0.0258	-0.0736	-0.0595
p value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Z-statistic	1.5700	1.4300	1.6700	1.0800	2.2100	1.8700	2.9400	3.1100	2.7800	3.09
p-value	0.1382	0.1753	0.1169	0.2986	0.0443	0.0830	0.0108	0.0077	0.0148	0.0079
% of firms lower										
Post-Reg FD ACAR	0.583		0.596		0.603		0.634		0.668	
% of firms higher										
Post-Reg FD ACAR	0.417		0.404		0.397		0.366		0.332	
p-value	0.000		0.000		0.000		0.000		0.000	

Table 2

Means and medians of control variables

ACAR_{i,q,x} is the absolute cumulative abnormal return from x days before through two days after firm i's quarter q earnings announcement . 2002-2005 equals 1 if firm i's earnings announcement is from the 2002-2005 period, and 0 otherwise. We include ABRETVAR_{i,q} and NEG CAR_{i,q} as controls for inherent price variability. ABRETVAR is the standard deviation of firm i's abnormal return from the market model estimation period for pre-Reg FD period. NEG CAR_{i,q}, which equals to 1 if the cumulative abnormal return over the quarter is negative, captures another dimension of price variability. ABSCAR_{i,q} is the absolute cumulative abnormal return during the entire quarter as firm-quarters with larger total information flow are expected to have larger information gaps and larger ACARs at any given time. LOSS_{i,q} equals 1 if firm i reports a loss in quarter q. NEGSPEC_{i,q} is the absolute value of the special items deflated by total assets, if negative and 0 otherwise. EPRATIO is a proxy for expected growth in earnings. LOGASSET and BETA is included in the regression to control for risk. All p-values are two sided. p-values for means are from t-tests of the difference between the pre and post Reg FD means. For medians, p-values are from Wilcoxon two sample tests. p-values for regression parameters are based on ordinary least squares standard errors.

Variable	Mean			Median		
	1999-2000	2002-2005	p-value	1999-2000	2002-2005	p-value
ABRETVAR	0.028	0.028	0.999	0.024	0.024	0.999
NEG CAR	0.418	0.509	0.000	0.000	1.000	0.000
ABSCAR64	0.213	0.139	0.000	0.167	0.101	0.000
LOSS	0.114	0.124	0.054	0.000	0.000	0.056
NEGSPEC	0.002	0.002	0.102	0.000	0.000	0.000
E_P	0.047	0.031	0.000	0.068	0.053	0.000
LASSET	7.132	7.457	0.000	7.068	7.494	0.000
BETA	0.810	0.955	0.000	0.712	0.908	0.000

Table 3

Regression of absolute cumulative abnormal returns on the 2002–2005 Post–Reg FD dummy and control variables

$$ACAR_{i,q,x} = a_{0,x} + a_{1,x} 2002-05_q + a_{2,x} ABRETVAR_{i,q} + a_{3,x} NEG CAR_{i,q} + a_{4,x} ABSCAR_{i,q} + a_{5,x} LOSS_{i,q} + a_{6,x} NEGSPEC_{i,q} + a_{7,x} EPRATIO_{i,q} + e_{i,q,x}$$

$ACAR_{i,q,x}$ is the absolute cumulative abnormal return from x days before through two days after firm i 's quarter q earnings announcement. Dummy variable 2002-2005 equals 1 if firm i 's earnings announcement is from 2002-2005. We include $ABRETVAR_{i,q}$ and $NEG CAR_{i,q}$ as controls for inherent price variability. $ABRETVAR$ is the standard deviation of firm i 's abnormal return from the market model estimation period for pre-Reg FD period. $NEG CAR_{i,q}$, which equals 1 if the cumulative abnormal return over the quarter is negative, captures another dimension of price variability. $ABSCAR_{i,q}$ is the absolute cumulative abnormal return during the entire quarter as firm-quarters with larger total information flow are expected to have larger information gaps and larger ACARs at any given time. $LOSS_{i,q}$ equals 1 if firm i reports a loss in quarter q . $NEGSPEC_{i,q}$ is the absolute value of the special items deflated by total assets, if negative and 0 otherwise. $EPRATIO$ is a proxy for expected growth in earnings. $LOGASSET$ and $BETA$ is included in the regression to control for risk.

Variable	Return window									
	(-1, +2)		(-2, +2)		(-5, +2)		(-10, +2)		(-30, +2)	
	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
Intercept	0.023	0.00	0.025	0.00	0.029	0.00	0.040	0.00	0.059	0.00
2002-2005	-0.009	0.00	-0.010	0.00	-0.013	0.00	-0.020	0.00	-0.042	0.00
ABRETVAR	0.506	0.00	0.517	0.00	0.576	0.00	0.514	0.00	0.491	0.00
NEG CAR	-0.001	0.18	-0.001	0.04	-0.002	0.00	-0.003	0.00	-0.004	0.00
ABSCAR64	0.088	0.00	0.096	0.00	0.127	0.00	0.176	0.00	0.430	0.00
LOSS	0.004	0.00	0.006	0.00	0.007	0.00	0.009	0.00	0.008	0.00
NEGSPEC	0.020	0.38	0.007	0.75	0.034	0.18	-0.018	0.55	0.005	0.89
E_P	-0.006	0.00	-0.007	0.00	-0.009	0.00	-0.011	0.00	-0.012	0.00
LASSET	-0.002	0.00	-0.002	0.00	-0.002	0.00	-0.002	0.00	-0.001	0.09
BETA	0.010	0.00	0.010	0.00	0.010	0.00	0.011	0.00	0.011	0.00
R ²	15.46%		16.64%		20.65%		24.99%		46.08%	

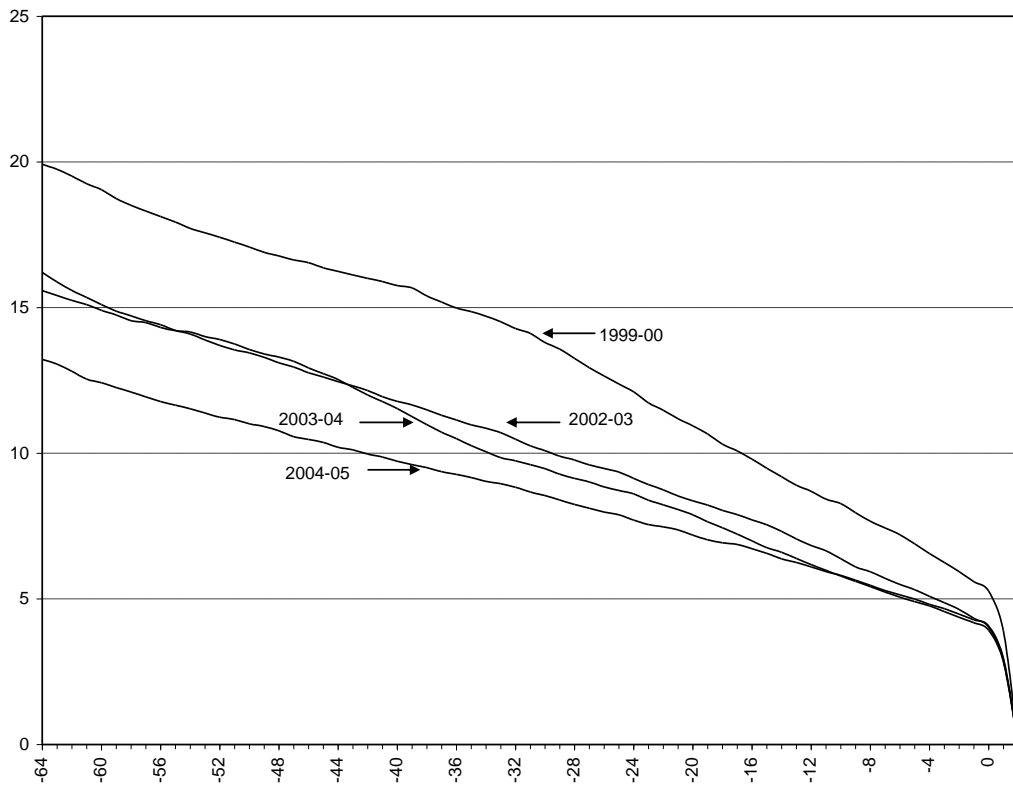


Figure 1

Price discovery before and after Reg FD: Mean ACAR around earnings announcements

The vertical axis measures the mean absolute cumulative abnormal return; the horizontal axis, the trading day relative the earnings announcement (day 0).

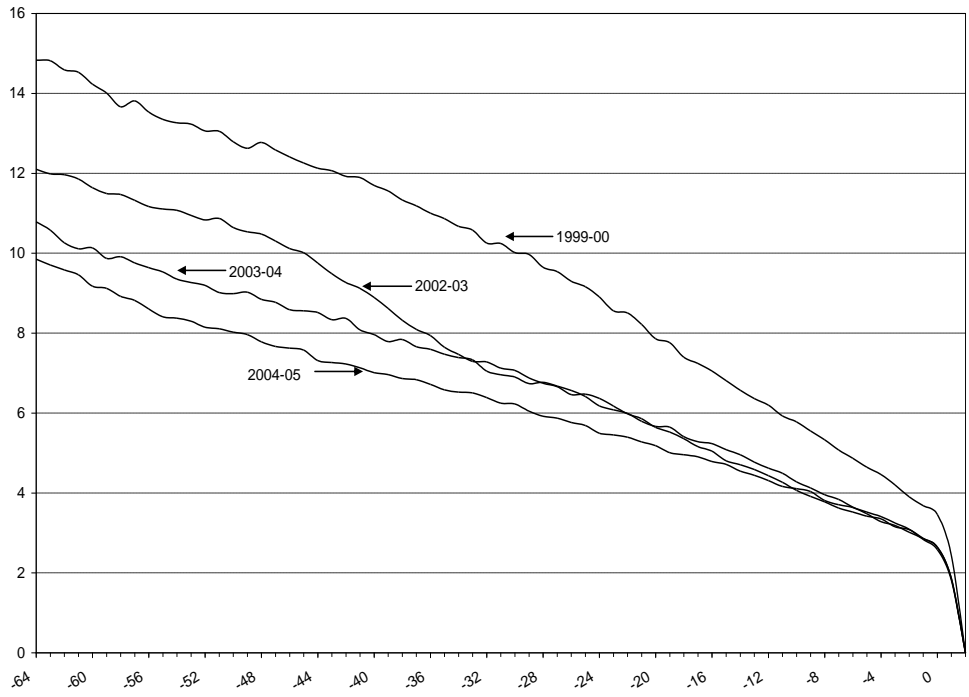


Figure 2
Price discovery before and after Reg FD: Mean ACAR around earnings announcements
 The vertical axis measures the median absolute cumulative abnormal return; the horizontal axis, the trading day relative the earnings announcement (day 0).

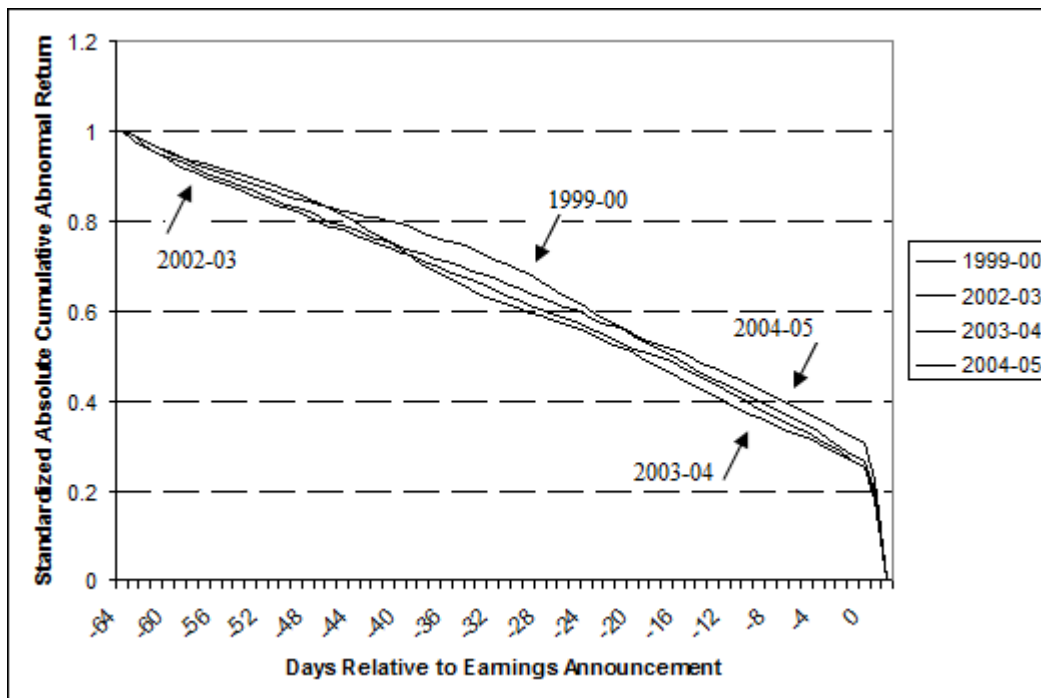


Figure 3

Daily cross-sectional scaled mean ACAR around earnings announcements

We scale each day's mean absolute cumulative abnormal return (ACAR) so that each plot starts at 1.0 on day -64 and ends at 0.0 on day +2.

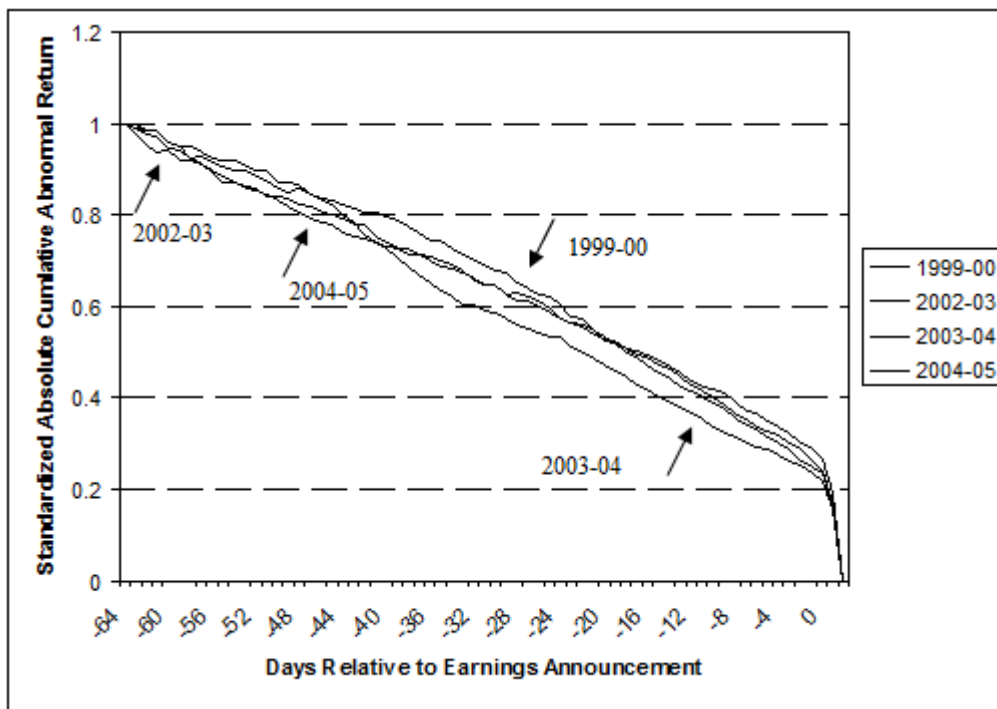


Figure 4

Daily cross-sectional scaled median ACAR around earnings announcements

We scale each day's median absolute cumulative abnormal return (ACAR) so that each plot starts at 1.0 on day -64 and ends at 0.0 on day +2.