

Voluntary Earnings Disclosure on the Floor-based NYSE v. the Screen-based NASDAQ

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ABSTRACT

We investigate whether the frequency with which managers' voluntarily disclose earnings relates to the type of exchange on which their firm's equity is listed: the floor-based NYSE auction market or the screen-based NASDAQ dealer market. We then analyze if price responses to voluntarily disclosed future earnings news are related to the type of exchange. After controlling for postulated determinants of voluntary disclosure and exchange listing, we find that firms traded on floor-based auction markets are more likely to disclose earnings. We further provide evidence that firms listed on floor-based markets enjoy higher price responses to each unit of unexpected future earnings information. These results imply that the marginal benefits to disclosure are higher on floor-based auction markets. The idea that firms traded on floor-based exchanges are more likely to disclose future earnings is consistent with previous evidence that adverse selection components in spreads are higher on the NYSE than on the NASDAQ (see Affleck-Graves, Hedge, and Miller (1994), among others). The evidence uncovered is also consistent with the notion that, without adverse selection, a monopolistic specialist can still extract profits (Amihud and Mendelson (1982)), but a finite number of liquidity providers (i.e., market makers) cannot (Kyle (1989) or Baruch (2005)). Our results are robust to including firms that switched exchanges (e.g., from the NASDAQ to the NYSE) and to controlling for the effect of Regulation FD implemented by the SEC in 2000.

Grossman and Hart (1980), Milgrom (1981), Diamond and Verrecchia (1991), Frankel, McNichols, and Wilson (1995), and Botosan (1997) argue that managers voluntarily disclose value-relevant information in order to reduce adverse selection costs. Trueman (1986) writes that managers can use disclosure to signal their own competence, and Ajinkya and Gift (1984) as well as McNichols (1989) note that managers disclose to help align analyst expectations with their own. Despite the vast literature on voluntary disclosure, observed disclosure policy is still not fully understood. In this paper, we shed further light on voluntary disclosure by considering that floor- and screen-based markets offer different information environments, which may foster unique incentives for managers to voluntarily disclose information. Specifically, this paper examines whether managers' decisions to voluntarily disclose earnings information are related to the type of exchange on which their firm's equity is listed (the floor-based NYSE auction market or the screen-based NASDAQ dealer market) and how price responses to voluntarily disclosed future earnings news differ on each type of exchange.

On the floor-based NYSE, specialists are required to provide liquidity to the best of their abilities, but on the screen-based NASDAQ, a finite number of market makers or dealers compete for orders. This and other differences in operation and regulation combined with investor information asymmetry create distinct levels of liquidity and adverse selection on the two exchanges. Amihud and Mendelson (1986) argue that high adverse selection reduces liquidity and decreases value, and Easley and O'Hara (2004) argue that the quality and quantity of information firms provide to their investors impacts the firm's cost of capital. Thus, decreasing information asymmetry and, as a result, increasing firm value may serve as sufficient incentives for managers to voluntarily disclose earnings information (Grossman and Hart (1980) and Milgrom (1981)). The costs and benefits of providing earnings information to those who

demand it may also motivate voluntary disclosure. We suggest not only that market makers may be key players who demand this information but that differences in adverse selection costs caused by distinct market mechanisms provide different incentives to disclose future earnings information.

Extant empirical studies on market microstructure focus on comparing execution costs on the two types of exchanges. While the bid-ask spread is a summary measure of transaction costs or liquidity, it is conventionally broken into three components: order processing costs, inventory holding costs, and adverse selection costs (see, for example, Glosten and Harris (1988) or Huang and Stoll (1997)). Previous research finds that, while the costs of trading securities are generally higher on screen-based dealer markets (Huang and Stoll (1996), Petersen and Fialkowski (1994), and Barclay (1997)), the adverse selection component for NYSE stocks is at least as large as it is for NASDAQ securities (Affleck-Graves, Hedge, and Miller (1994), Huang and Stoll (1996), and Bessembinder and Kaufman (1997)), thus suggesting that information asymmetry is not a significant cause of differences in the bid-ask spread between markets. As discussed, prior theoretical research on voluntary disclosure suggests that higher adverse selection motivates managers to disclose future earnings forecasts, and extant empirical studies find that higher spreads induce more frequent disclosure (Coller and Yohn (1997)). These results raise an interesting, 2-part question that may shed light on the market microstructure and voluntary disclosure literatures: Firms listed on which type of exchange more frequently voluntarily disclose information and how do investors in each market react to disclosed information?

After controlling for documented firm-specific and industry-specific determinates of disclosure, we find not only that managers of firms listed on floor-based exchanges more

frequently issue signals about their future earnings prospects, but that there is a larger price response to voluntarily disclosed earnings information on floor-based exchanges. These findings accord with studies like Affleck-Graves, Hedge, and Miller (1994), Huang and Stoll (1996), or Bessembinder and Kaufman (1997) that suggest that adverse selection components in spreads are higher on floor-based auction markets so that the marginal benefit from additional disclosure is greater, causing firms listed on these exchanges to disclose more frequently. Our results are further consistent with the notion that, without adverse selection, a monopolistic specialist can still extract profits (Amihud and Mendelson (1982)), but a finite number of liquidity providers (i.e., market makers) cannot (Kyle (1989) or Baruch (2005)).

This paper proceeds as follows. Section 1 reviews the voluntary disclosure and market microstructure literature, and highlights the questions addressed in this study. Data and method are given in Section 2. Section 3 provides results. Section 4 considers firms that have moved exchanges. Section 5 offers robustness checks, and Section 6 concludes.

1. Voluntary Disclosure, Market Microstructure, and the Hypotheses

1.1 Background

Milgrom (1981) and Diamond and Verrecchia (1991) suggest that publicly revealing information reduces information asymmetry between managers and investors/creditors, thereby decreasing a firm's cost of capital and increasing its liquidity and value (Amihud and Mendelson (1986)). Fishman and Hagerty (1989) and Merton (1987) indicate that disclosure increases the number of investors willing to invest in the firm and lowers the firm's cost of capital. King, Pownall, and Waymire (1985, 1990) and Diamond (1985) suggest that issuing management forecasts may also reduce incentives for private information acquisition. Because the benefits

and costs of providing information about a firm's future prospects may be impacted by the type of exchange on which a firm lists its equity, we focus on how exchange type impacts disclosure policy. In doing so, we control for firm size (Kasznik and Lev (1995)), volatility of earnings (Waymire (1985)), analyst following (Soffer, Thiagarajan, and Walther (2000)), stock issuance (Lang and Lundholm (1999)), ownership structure (Ajinkya, Bhojraj, and Sengupta (2005)), and industry (Kasznik and Lev (1995)). We also control for returns and profitability.

Floor-based trading occurs at a central, physical location (e.g., the NYSE) where open outcry traders express their buy/sell orders by shouting and signaling. A single specialist is responsible for maintaining an orderly market, handling customer orders, and providing liquidity by acting as counterparty to a trade whenever there are differences in supply and demand. Screen-based trading is decentralized and employs an electronic system where traders at various locations receive information from and enter orders into a computer system (e.g., the NASDAQ). A finite number of brokers buy and sell from their own accounts as well as manage their customers' orders, but there is no specialist *per se* to facilitate trading.

Market microstructure literature has focused on comparing the (components of) transaction costs on floor and screen-based exchanges, and on firm-characteristics to explain these costs. For example, Huang and Stoll (1996) and Petersen and Fialkowski (1994) find that execution costs are higher on the screen-based NASDAQ than on the floor-based NYSE, Barclay (1997) finds that trading costs decrease after stocks move to the NYSE, and Affleck-Graves, Hedge, and Miller (1994), Huang and Stoll (1996), and Bessembinder and Kaufman (1997) show that adverse selection components in spreads are higher for NYSE-listed stocks.¹

¹ Affleck-Graves, Hedge, and Miller (1994) document that the price discovery process varies with exchange. Additionally, Lin, Sanger, and Booth (1998), Denis and Weston (2001), and Ness, Ness, and Warr (2005) also find that adverse selection costs are higher on NYSE than on NASDAQ.

Madhavan (1992) argues that price competition between dealers on the NASDAQ lowers adverse selection costs in screen-based markets and Huang and Stoll (1996) suggest that NASDAQ dealers “know their order flow” through repeated interactions and “preferencing arrangements”. Overall, the research suggests that trading costs are higher for the NASDAQ market, but adverse selection costs are higher on the NYSE, indicating that differences in execution costs (as measured by spreads) cannot be attributed to differences in adverse selection costs (Huang and Stoll (1996) and Bessembinder and Kaufman (1997)).

1.2 Hypotheses

Despite the inherent link between market microstructure, adverse selection, and voluntary disclosure, most empirical work on the motivation behind voluntary disclosure centers on firm characteristics (firm size, analyst following, etc.) and events (e.g., stock offerings). Yet, distinct market structures provide market makers, managers, analysts, and investors with unique information environments which, by way of affecting the benefits and costs of supplying information, may impact the frequency with which a firm discloses information. Diamond (1985) suggests that a benefit of voluntary disclosure is that risk sharing is improved and investors’ information search costs are lowered. These aforementioned studies suggest that adverse selection costs are higher on the NYSE than on the NASDAQ, such that the demand for future earnings information might also be greater for NYSE-listed securities. Additionally, Verrechia (1983) and Darrough (1993) respectively suggest that disclosure and proprietary costs negatively affect voluntary disclosure. Unlike the majority of NYSE firms, many NASDAQ firms are high-technology growth stocks that may face higher perceived proprietary costs of

disclosing earnings information.²

Overall, the literature indicates that benefits (costs) of future earnings disclosure may be higher (lower) on the NYSE than on the NASDAQ, therefore motivating managers of NYSE-listed securities to more frequently voluntarily release information. Additionally, while, without adverse selection, a finite number of broker dealers cannot extract rents (see Kyle (1989) or Baruch (2005)), a monopolistic specialist can profit in the absence of asymmetric information (Amihud and Mendelson (1982)). This notion implies that a floor-based specialist may be more likely to demand future earnings information, because he can extract rents even after the release of information, whereas dealers on screen-based markets may be less likely to demand forecasts of earnings news.³ Further, since floor-based trading systems facilitate the exchange of non-price information, traders on floor-based exchanges may have greater ability to analyze future earnings information released through voluntary disclosure and have stronger demand for future earnings information, so that they are more sensitive to voluntary disclosed earnings information.⁴ The aforementioned arguments suggest that benefits to providing management earnings information are higher and the costs of providing this information are lower for NYSE-listed securities so that managers of these stocks are more likely to voluntarily disclose earnings information. Further, if NYSE traders are more sensitive to new information and NYSE market makers do demand higher quality information, the price response to each unit of unexpected voluntarily disclosed earnings information will be higher on the NYSE.

² The additional fact that technology firms that fulfill NYSE listing requirements but choose to list on NASDAQ (e.g., IBM) implies that firms concerned about leaking technical knowledge prefer screen-based markets.

³ This sequence repeats in the next quarter when new earnings information is available. That is, in the absence of the next period's earnings information, the adverse information cost is higher on floor-based markets, which in turn induces a higher tendency of NYSE firms to voluntarily issue forecasts for the next period's earnings.

⁴ The information that some brokers want to convey about their clients cannot be exchanged in screen-based dealer systems that operate only on information about order prices and sizes.

2. Data and Method

Market participants care about earnings forecasts because they represent a firm's future prospects. Earnings disclosures are considered a reliable signal about a firm's earnings and are the only type of disclosure (as opposed to other types of disclosure, e.g., patent) that is widely covered in a single database. We therefore use management earnings forecasts as a measure of voluntary disclosure of private information. We obtain management forecast (henceforth, MF) data from First Call Historical Database (FCHD).⁵ Because FCHD does not have sufficient MF data prior to 1996, and because the December, 1995 enactment of the Private Security Litigation Reform Act (PSLRA) alleviated the risk of a lawsuit of corporate voluntary disclosure of forward looking information and increased corporate voluntary disclosures, we use post-1995 data. The MF dataset has 59,603 observations from January 1, 1996 to October 4, 2004. As our goal is to compare the frequencies of and price response to management forecasts on floor- and screen-based trading systems, we obtain data on over 9,000 NYSE and NASDAQ firms over this period. Distinct mandatory disclosure requirements may create variance in voluntary disclosure, but there is no significant difference in regulation of voluntary disclosure on the two exchanges. Moreover, even though disclosure requirements for the two exchanges are distinctly regulated by the SEC, this effect is seen primarily in the disclosure for firms in different industries, which we control for in our analysis. Our sample includes 49,202 MFs, 20,756 of which are annual and 28,446 of which are quarterly.⁶ Figure 1 displays the frequency of MFs per quarter over our

⁵ Some prior studies on voluntary disclosure obtain their disclosure data from Dow Jones or Factiva (see, for example, Kasznik and Lev (1995) or Coller and Yohn (1997)). We compare coverage of Dow Jones with FCHD for randomly selected firms over several quarters and find that coverage of management earnings forecasts are almost identical in the two databases.

⁶ Management forecasts are provided by FCHD in three forms: point estimates (specific earnings number), range estimates (e.g., 0.004 ~ 0.006), and qualitative estimates (no specific number but qualitative information regarding future earnings). In our analysis, we need to calculate unexpected earnings. Since we have no specific forecast number for qualitative estimates, they are not included. We use the midpoint of the range as the earning forecast for range estimates.

sample period.

Table 1 provides summary statistics for both NYSE and NASDAQ firms (Panels A and B, respectively). Firm size, institutional ownership, and analyst following are higher for NYSE firms while return volatility and book-to-market are greater for NASDAQ firms. This table reflects the fact that the two exchanges have different listing standards. For example, the listing standards for NYSE stocks include firm size (market capitalization), revenue, operating cash flows, and pre-tax income as well as other, qualitative, standards. Thus, on average, these variables should be higher for NYSE firms. Because some firms cannot meet the NYSE listing requirements (the NYSE requirements are stricter than those of the NASDAQ), we consider a “matched” sample of firms that could theoretically be listed on the NYSE or the NASDAQ. To form this sample, we first select all NASDAQ firms which satisfy the NYSE-listing requirements. From this group, we construct a one-to-one matched sample of stocks such that each NYSE stock in every quarter has only one matched counterpart from the NASDAQ. Firms are matched by the smallest absolute size-difference, 2-digit SIC industry code, and fiscal year end.⁷ This additional matching allows for a more accurate comparison of the two market mechanisms. Figure 2 shows the frequency of MFs over time for each of our NYSE firms, as well as for the matched sample of NASDAQ firms. The right hand side of Table 1 provides the firm characteristics of the matched sample. Even though the matching process mitigates some of the differences in firm characteristics between NYSE and NASDAQ firms, the table shows that, even after matching, NASDAQ firms still have lower institutional ownership, return volatility and book-to-market values.

⁷ We require that the matched counterpart of NASDAQ firm size be within 90% and 110% of each NYSE firm size. We also obtain an alternative sample matched by stock price, trading volume, and return volatility as well as firm size. Results from this and other “one-to-many” matched samples are qualitatively similar to those from our one-to-one size-matched sample and are available upon request.

To understand the difference between the frequency of and price response to MFs on the two exchanges, we control for firm characteristics known to impact disclosure in our regression analysis (see Section 1), and include a dummy variable that takes on the value 1 if the firm is a NYSE-listed security (which captures the differences between NYSE and NASDAQ stocks that is shown in Table 1). Later in the analysis, we examine firms that change market mechanisms (for example, from the NASDAQ to the NYSE) and account for Regulation FD (Reg FD) which mandates that firms simultaneously make material disclosure to all investors (analysts, institutional investors, and individual investors).

3. Results

3.I. Occurrence and Frequency of Management Forecasts

Because both annual and quarterly MFs represent the firm's intention to disclose information, we include all annual and quarterly forecasts announced for a given firm-quarter in this analysis. Later, we perform separate analyses for annual and quarterly forecasts. We first classify each firm-quarter during the sample period by whether it has at least one disclosure (in which case the variable DMF takes on the value of 1 and zero otherwise), and we use this variable in the likelihood test. The univariate analysis presented in Table 2, Panel A shows while NYSE firms voluntarily disclose information in 20% of the quarters, NASDAQ firms do so only in 10% of the quarters, indicating that MFs occur twice as frequently on the NYSE than they do on the NASDAQ.⁸ This result holds for the matched sample analysis, as shown in the right hand side of the table. We next specify the following logit regression to determine the likelihood of MFs:

⁸ To examine the frequency of MFs per quarter, we obtain the mean number of MFs per quarter, which includes the firm quarters during which no MF is issued. The mean number of MFs per quarter on the NYSE is 0.380 while that on the NASDAQ is 0.163. Alternatively, when we exclude firm quarters with no MFs, the mean numbers of MFs per quarter on NYSE and on NASDAQ are 1.882 and 1.593, respectively, and are depicted in Figure 1.

$$\begin{aligned}
Y = & \beta_0 + \beta_1 NYSE + \beta_2 LMVE + \beta_3 LMB + \beta_4 STDR + \beta_5 STDE + \beta_6 \Delta ROA \\
& + \beta_7 AFNUM + \beta_8 INSTOWN + \beta_9 ISSUE + \beta_{10} HITEC + \beta_{11} REGUL \\
& + \sum \beta_i YrDum + \varepsilon,
\end{aligned} \tag{1}$$

where $Y = \log [\Pr (\text{CMF} \geq 1) / \Pr (\text{CMF} = 0)]$, and $\Pr (\text{CMF} \geq 1) = \exp(x'\beta) / [1 + \exp(x'\beta)]$.⁹

NYSE is a dummy variable of that takes on the value 1 if the firm is listed on the *NYSE* and zero otherwise. While our variable of interest is *NYSE*, we control for certain firm characteristics and industrial factors that prior literature found to be correlated with firms' voluntary disclosure decisions. All control variables are measured at the beginning of each firm quarter during which an MF is issued. *LMVE* represents the log of market capitalization, *LMB* is log market-to-book, *STDR* is the standard deviation of previous 12 month daily returns, *STDE* is the standard deviation of earnings, *ROA* denotes return on assets, *AFNUM* represents the number of analysts following the stock, *INSTOWN* represents the percentage of institutional holdings, *ISSUE* takes on the value 1 if the number of shares outstanding increases by more than 10% over the previous year and zero otherwise, and *HITEC* and *REGUL* are indicator variables that take on the value 1 if the firm belongs to the respective high-technology or regulatory industry and zero otherwise.¹⁰

Table 2, Panel B provides the results from the logistic regression model for the full and matched samples. As can be seen in the second and third columns of the table, the coefficient on the dummy variable *NYSE* is 0.154 in the full sample and 0.378 in the size-matched sample, both of which are significantly positive (p-value <.0001). The matched-sample results imply that the

⁹ In this regression, CMF represents the frequency (count) of MFs in a firm quarter. We also examine an *ordered* logit model with three categories: 0 if CMF=0, 1 if CMF=1, and 2 if CMF >1. The results from the *ordered* logit model are qualitatively similar to the results from Equation 1 and are available upon request.

¹⁰ Since the *HITEC* industry has high litigation risk, previous empirical literature identifies it as a litigation industry (see, Kasznik and Lev (1995), Soffer, Thiagarajan, and Walther (2000)). Also, in order to control for all industrial factors, we include all the industrial dummies based on two-digit SIC codes as well as the above *HITEC* and *REGUL*. The results from the alternative regression are qualitatively the same, and are available upon request.

probability of a MF for an NYSE-listed firm is 45.93% higher than it is for a NASDAQ firm with similar qualities.¹¹ Because management forecasts may be clustered in time with some years having more observations than others, we also perform Fama-MacBeth (1973) regressions on the full sample. Specifically, we run the regression for each year and then average the coefficients across years. These results are presented in the right-most column of Table 2, and the NYSE dummy variable remains significantly positive. It appears that managers of NYSE- (vs. NASDAQ-) listed firms are more likely to provide updated forward-looking earnings information. One interpretation of our results is that the demand for future earnings information and therefore the incentives for private information acquisition are higher for firms listed on the NYSE than for firms listed on the NASDAQ. Managers respond to this demand by more frequently disclosing information. Amihud and Mendelson (1982) suggest that a monopolistic specialist can extract profits in the absence of information asymmetry, but Kyle (1989) and Baruch (2005) suggest that a finite number of liquidity providers (e.g., market makers) cannot. Our results are consistent with each of these models, especially because the latter models suggest that it is not in the best interest of NASDAQ market makers to eliminate adverse selection.

3.II. Market Reaction to Management Forecasts

To test the market reaction to unexpected future earnings information contained in MFs, we calculate three-day cumulative abnormal returns (CAR) around management earnings forecast dates. We first obtain price data from CRSP, and to isolate the price impact of a management forecast, we delete MF dates that overlap with dividend or earnings announcement dates during

¹¹ To see this, note that $Y = -2.4305 + 0.3780 \cdot \text{NYSE} + \dots$, and $\exp(0.3780 \cdot \text{NYSE})$ is the relative probability of a MF on each exchange. Thus, the difference in likelihood of a MF when NYSE = 1 or 0 is $1.4593 - 1 = 0.4593$.

the three-day period used to calculate CAR. At each MF release date, we measure the MF surprise (denoted by MFSUR) as the difference between forecasted earnings per share and the most recent median analyst forecast prior to the MF date, standardized by the beginning period share price. Before we perform the multivariate analysis, we compare CARs around MFs (without controlling for size) and MFSURs on the two exchanges. Table 3, Panel A provides results of the univariate analysis. The mean MFSUR for each disclosure and the average CAR around MF announcements are higher in absolute value for NASDAQ firms than for NYSE firms, and this remains true for both positive and negative surprises. However, Pearson and Spearman correlation coefficients between MFSUR and CAR are higher for NYSE firms, implying that the market reaction to one unit of unexpected earnings disclosures is higher for firms listed on the NYSE. The fact that the average CAR is larger for NASDAQ firms but that the average CAR in response to 1 unit of MFSUR is higher for NYSE firms suggests that the information content of disclosed earnings is higher for NYSE firms, even though total future earnings news (MFSURs) is higher for each MF event on the NASDAQ. We next run separate regressions of CARs on MF surprises for NYSE and NASDAQ firms, and then do a pooled analysis using an NYSE dummy variable (*NYSE*) and an interaction variable (*NYSE*MFSUR*). The respective regression models are:

$$\begin{aligned}
 CAR = & \beta_0 + \beta_1 MFSUR + \beta_2 MFAQ + \beta_3 LMB + \beta_4 LMVE + \beta_5 AFNUM \\
 & + \sum \beta_i YRdum + \varepsilon, \quad (2)
 \end{aligned}$$

$$\begin{aligned}
 CAR = & \beta_0 + \beta_1 MFSUR + \beta_2 NYSE + \beta_3 NYSE * MFSUR + \beta_4 MFAQ \\
 & + \beta_6 LMB + \beta_7 LMVE + \beta_8 AFNUM + \sum \beta_i YRdum + \varepsilon, \quad (3)
 \end{aligned}$$

where *MFSUR* is defined above, and the other variables are defined as in Equation 1. Results for these regressions are reported in Table 3, Panel B. The coefficient on *MFSUR* for both NYSE and NASDAQ firms is significantly positive. For NYSE firms, this coefficient is 0.795 for the

full sample and 2.133 for the matched sample. For NASDAQ firms, the coefficient on *MFSUR* is also significantly positive, but it is much smaller than it is for NYSE firms. Specifically, for NASDAQ firms, the coefficient is 0.031 in the full sample and 1.352 in the matched sample. While the coefficient on *MFSUR* is much higher in the matched sample, it is still not as high as it is for matched-NYSE firms. The fact that the coefficient is so small for NASDAQ firms in the full sample is consistent with the evidence that adverse selection costs and the information content of future earnings information are lower on the NASDAQ. Our results also accord with the idea that there may be information leakage or front-running on the NASDAQ (Heidle and Li (2003)). The results for the pooled analysis tell a similar story: NYSE firms have a larger market response to *MFSUR*, as indicated by a significantly positive coefficient on the interaction term *MFSUR*NYSE* (0.737). The size-matched analysis yields similar results and suggests the market response for NYSE firms is approximately 71% higher than it is for NASDAQ firms.¹² While these results are consistent with the notion that the information content of management forecasts is higher for firms listed on the NYSE, they also accord with the evidence proposed in Affleck-Graves, Hegde, and Miller (1994) and Lin, Sanger, and Booth (1998) that the adverse selection component of the spread is significantly greater on the NYSE than on the NASDAQ. Overall, we conclude that the demand for future earnings information is greater for firms listed on the NYSE, and managers of these firms respond by more frequently supplying future earnings information. Their ability to supply frequent forecasts is positively rewarded. These results are consistent with the notion that, even without adverse selection, a monopolistic specialist can still extract profits (see Amihud and Mendelson (1982)), though a finite number of liquidity

¹² Note that if $NYSE=1$, the estimated $CAR = 0.0350 + 1.13897*MFSUR+0.0073*1+0.7065*MFSUR*1+ \dots$, and if $NYSE=0$, the estimated $CAR = 0.0350 + 1.13897*MFSUR+0.0073*0+0.7065*MFSUR*0 \dots$. Thus, the difference in the estimated CAR for NYSE listed and for NASDAQ listed securities is $0.0073+0.7065*MFSUR$ and the part of that difference associated with *MFSUR* is $0.7065*MFSUR$.

providers (e.g., market makers) cannot (see Kyle (1989) or Baruch (2005)). They are also consistent with the idea that the perceived quality of voluntarily disclosed information is higher for NYSE stocks.

4. Listing Changes

We cast further light on our results by examining firms that switch from one trading locale to another (in particular, from the NASDAQ to the NYSE). Specifically, we compare the frequency of and market reaction to management forecasts between the periods before and after the listing change (henceforth, LC) which allows us to isolate the impact of the exchange on management forecasts because we can effectively control for the impact that firm characteristics have on disclosure behavior by using each firm as its own benchmark. Because a move from the NYSE to the NASDAQ is generally mandatory rather than voluntary (firms are generally driven off the NYSE because they no longer meet listing requirements) and because there are only 7 occasions in our sample on which firms switch from the NYSE to the NASDAQ, we focus on the 316 cases where firms switch from the NASDAQ to the NYSE. We have 2,340 MFs for these firms during our sample period.¹³ The mean number of MFs per year (in a 1-year period before and after the listing change) almost doubles after a firm moves from the NASDAQ to the NYSE. Specifically, it increases from 0.527 before the listing change to 0.937 after.¹⁴ Analyst following

¹³ We also perform two size-matching firm analyses. First, for the period before the listing change (LC), we not only compare LC firms with firms that remain on NASDAQ; we also compare LC firms with firms that remain on NYSE. The latter comparison shows a significant difference in disclosure frequency (likelihood) and market reaction while the former does not. Second, for the period after the LC, we compare LC firms with firms that have been on NYSE as well as with firms that have been on NASDAQ. Again, the latter shows significant difference in disclosure frequency (likelihood) and market reaction while the former does not. These results suggest that the motivations and price effect of voluntary disclosures are significantly related to trading mechanism rather than to the LC event itself.

¹⁴ In this case, the mean number of MFs per year is obtained by including the firm years during which no MF is issued. Nonetheless, when we exclude the firm years with no MF, the mean number of MFs per year before and after the listing change are 2.00 and 2.742, respectively.

and institutional ownership also increase significantly after the listing change.¹⁵ Earnings and stock issuance slightly decrease.

For this analysis, we add to the regressions in Section 3 a variable denoted *AFTER* that takes on the value 1 for the period after the listing change and 0 otherwise. Table 4 shows that the coefficients on *AFTER* are significantly positive in each of the cases we examine: a 1-year period before and after the listing change, a 2-year period on each side of the listing change, and a 3-year window before and after the listing change. The magnitude of the coefficient in each case is close to 0.40, however, the significance increases as the window becomes wider (see the p-values reported in parentheses below the coefficients). These results suggest that firms increase the frequency of management forecasts *after* they move to a floor-based trading system (the NYSE). Table 5 presents results from regressions using the cumulative abnormal return (CAR) as the dependent variable to shed light on the price response test. We show results from separate analyses (before and after the listing change), as well as from a pooled sample that incorporates our dummy variable, *AFTER*. Consistent with results presented in Section 3, the market reacts more strongly to MFs after a firm moves to the NYSE than it did before the firm moved. In each of the 3 windows surrounding the event, the reaction to the surprise is at least 30 times greater after the move than it is before the move. Though, before the listing change, the coefficients on *MFSUR* are indistinguishable from zero, after the move, they are significantly positive. (After the move, the (significant) coefficients on *MFSUR* are 0.31, 0.36, and 0.44 for the respective 1-, 2-, and 3- year windows.) The coefficient on the interaction term in the pooled regression is also significantly positive for all cases.

Because these results may merely reflect the fact that the frequency and information

¹⁵ The mean analyst following increases from 6.55 to 7.58 while the percentage of institutional ownership increases from 44.45 to 50.13 in the three years around a listing change.

content of management forecasts has increased over time, we examine the results as they pertain to a matched-sample of firms (firms that have a similar market capitalization and satisfy the NYSE listing requirements but remain on the NASDAQ). For the frequency test, we also run two regressions for each period before and after the listing change using a pooled matched sample.¹⁶ We create a dummy variable (*LC*) that takes on the value 1 if a firm moves from the NASDAQ to the NYSE and zero otherwise. The MF frequency of the matched sample does not increase as much as it does for the firms that move to the NYSE. These results are reported in Table 6, Panel A. Specifically, for the period before the listing change, there is no difference in the frequency of management forecasts for firms that later move from the NASDAQ to the NYSE and for firms that remain on the NASDAQ. After the listing change, however, the coefficient on the variable *LC* (0.409) is significantly positive (and about 4 times greater than it was before the listing change). This result supports the notion that the difference in the trading mechanism is what affects the frequency of management forecasts. Table 6, Panel B provides results of the market reaction (*CAR*) analysis. Columns 2 - 5 give results to the separate regressions for the two respective subgroups (firms that switch from the NASDAQ to the NYSE and matched firms that remain on the NASDAQ) before and after the listing change. The right most two columns show results of the two regressions before and after the listing change using a pooled, matched sample. All results support the notion that the information content of management forecasts is higher on the NYSE. Specifically, the coefficient on *MFSUR* is insignificant both before and after the listing change event for the control firms that do not move exchanges. For firms that do switch exchanges, however, the coefficient is significantly positive after the listing change ($t = 3.30$) though it is insignificant before the change ($t = 1.21$). The results obtained from the

pooled sample show that interaction term ($MFSUR*LC$) is significantly positive after the listing change whereas it is insignificant before the change.

As a final test for firms that switch from a screen- to a floor-based exchange, we investigate the case of listing change firms that move to the NYSE from the AMEX. Because this move is within the floor-based market system (i.e., the AMEX is also a floor-based exchange), we expect that neither the frequency of nor the market reaction to disclosures will change significantly from before to after a listing change event. Table 7 shows the results from this analysis. Consistent with our hypothesis, there is no significant change in either the information content or the occurrence of management forecasts after the move from the AMEX to the NYSE. Respective t -values and p -values are 1.63 and 0.17.

5. Additional Analyses

On October 23, 2000, the SEC implemented Regulation Fair Disclosure (henceforth, Reg FD) which regulates firms to make material disclosure to all investors (analysts, institutional investors, and individual investors) simultaneously. Easley and O'Hara (2004) suggest that firms can influence their cost of capital by affecting the quality and quantity of information available to investors through its corporate disclosure policy, by analyst forecasts, or by choosing a well-suited market microstructure. In particular, attracting an active analyst following for a company can also reduce a company's cost of capital, at least to the extent that analysts provide credible information about the company. However, Reg FD prohibited selective private disclosure of material information to analysts such that it reduced the possibility that firms use analysts as intermediaries for information distribution. Therefore, managers' public disclosure of information became a more important source of individual investor information such that the

information content and effects of voluntary disclosure may have changed after Reg FD.

Heflin, Subrahmanyam, and Zhang (2003), among others, provide evidence of a substantial increase in the firms' voluntary forward-looking, earnings-related disclosures after Reg FD. Further, Brown, Hillegeist, and Lo (2003) find that the information content of MFs, measured by disclosure-day stock price volatility, decreases after Reg FD.¹⁷ In this paper, we consider that Reg FD might have different effects on floor- v. screen-based markets and, as a robustness test, examine whether Reg FD alters our results. Specifically, we replicate the MF occurrence (frequency) tests for the subperiods before and after Reg FD. Results are presented in Table 8. Panel A shows that the coefficient on *NYSE* is significantly positive both before and after Reg FD, confirming that NYSE firms are more likely to provide updated forward-looking earnings information both before and after Reg FD. However, the frequency of disclosure for NYSE firms is much greater after Reg FD. Perhaps NYSE firms increased MFs even more after Reg FD to compensate for the prohibition of nonpublic, material disclosure. One interpretation of this result is that information disclosure to analysts and institutional investors before Reg FD via private communication channels was more prevalent for NYSE firms than for NASDAQ firms or that proprietary costs associated with the public disclosure of information after Reg FD remain lower for NYSE firms than for NASDAQ firms. Table 8, Panel B shows how the information content of MFs (measured by the coefficient on *MFSUR*) surrounding MF releases are impacted by Reg FD. The information content of MFs decreases after Reg FD for both NYSE and NASDAQ firms, implying that Reg FD diminished the price effect of individual MFs. Though R^2 s also decrease substantially, the coefficient of *MFSUR*NYSE* is significantly positive before and after Reg FD, suggesting that even after controlling for Reg FD, NYSE firms have a

¹⁷ Though Eleswarapu, Thompson, and Venkataraman (2003) suggest that the overall information flow is unchanged after FD, they find that the adverse selection component of trading costs decreases after Reg FD.

larger market reaction to new information in MFs than do NASDAQ firms.

The slope coefficient of *MFSUR* for NASDAQ stocks decreases from 1.45 before Reg FD to 1.27 after Reg FD. But, for NYSE stocks, the slope coefficient changes from 2.10 (=1.45 + .65) before Reg FD to 2.02 (=1.27 + .75) after Reg FD. This indicates that the market response to *MFSUR* decreased after Reg FD on both the NASDAQ and the NYSE. But, the difference in the market response to *MFSUR* for NYSE- v. NASDAQ-listed securities increases by 0.1 (from 0.65 to 0.75) after Reg FD, suggesting that Reg FD is associated with a greater difference in magnitude of response between the two exchanges.

We perform two additional robustness tests but, for brevity, do not report the results (they are available upon request). First, we expand the sample to include AMEX firms as constituents of floor-based auction market systems. The results from repeating the analysis with these firms included are consistent with our original results. Further, as indicated above, we have used pooled annual and quarterly management forecasts in our MF frequency and market reaction tests. As another test, we replicate the results separately for annual and quarterly management forecasts. Results of these tests are qualitatively similar to those of pooled sample analysis. Overall, we show that the setting in which a firm's stock is traded affects the demand for and response to new future earnings information by market participants such that managers alter the frequency of voluntarily disclosing forecasts.

6. Discussion and Conclusion

We examine whether managers' preferences for voluntary disclosure of their firms' future earnings are significantly related to the type of exchange on which their firm is listed (i.e., floor- or screen-based), and how capital markets react to voluntarily disclosed earnings information on

each type of exchange. After controlling for firm-specific and industry-specific characteristics that may affect voluntary disclosure, we find that managers of firms listed on the floor-based NYSE and AMEX are more likely to disclose earnings forecasts than are managers of firms with equity listed on the screen-based NASDAQ. We also find that the market reacts more strongly to voluntarily disclosed earnings information about firms listed on the floor-based exchanges. These results imply that firms listed on auction markets have a higher price effect of unexpected earnings information such that they are more likely to signal their future prospects.

Consistent with Affleck-Graves, Hedge, and Miller (1994), Huang and Stoll (1996), Bessembinder and Kaufman (1997), and Lin, Sanger, and Booth (1998) who find that the adverse selection component of trading costs is higher for NYSE firms, one interpretation of our results is that the demand for information about firms listed on the NYSE is higher than it is for those listed on the NASDAQ. The fact that the price response to unanticipated information is lower on the NASDAQ accords with the notions of information leakage and front-running on the NASDAQ (Heidle and Li (2003)). Finally, the evidence uncovered in this paper is supportive of the idea that, even without adverse selection, a monopolistic specialist can extract profits (see Amihud and Mendelson (1982)), though a finite number of liquidity providers (e.g., market makers) cannot (see Kyle (1989) or Baruch (2005)). Our results are also consistent with the idea that the perceived quality of voluntarily disclosed information is higher for NYSE stocks.

This study represents a first step in directly estimating the impact of market structure on management's forecast policy and on the information content of disclosed earnings. Our results shed further light on the incentives behind voluntary disclosure and have implications for regulators who are concerned with the permissible level of information-based trading on each exchange. Future research might focus on the interactive effect of market-specific structure and

firm-specific factors on voluntary earnings disclosure. Estimating this effect would be useful for managers trying to implement a disclosure policy that maximizes the value of their firm.

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Table 1 Sample Firm Characteristics

Table 1 presents summary statistics of NYSE and NASDAQ firms. All variables are calculated at the beginning of the year (quarter), unless otherwise indicated. LMVE = log (Market value of equity); LMB = log (market-to-book); STDDR = standard deviation of previous year daily returns; STDE = standard deviation of earnings for previous 12 quarters; EPS = earnings per share; $\Delta\text{EPS} = [(\text{EPS})_t - (\text{EPS})_{t-1}]$ scaled by stock price e_{t-1} ; $\Delta\text{ROA} = [(\text{net income})_t - (\text{net income})_{t-1}]$ scaled by total assets e_{t-1} ; AFNUM = # of analysts; INSTOWN = percentage of institutional ownership; ISSUE=1 if the number of adjusted shares outstanding increases by more than 10 percent in the previous year, and 0 otherwise; HITEC =1 if the firm belongs to the high-technology industry [Compustat SIC codes 2833-2836, 8731-8734, 3570-3577, 7370-7374, 3600-3674, or 5200-5961], and 0 otherwise; REGUL =1 if the firm belongs to a regulatory industry [SIC codes 4812-4813, 4833, 4841, 4811-4899, 4922-4924, 4931, 4941, 6021-6023, 6035-6036, 6141, 6311, 6321, or 6331] and 0 otherwise. N gives the number of firms, and STD is the standard deviation.

Panel A: Descriptive Statistics for NYSE Firms

Variables	N	Full Sample			Matched Sample			
		Mean	Median	STD	N	Mean	Median	STD
LMVE	19,391	7.728	7.606	1.570	4,874	6.886	6.825	1.250
LMB	19,391	0.956	0.825	0.659	4,874	0.929	0.808	0.648
STDDR	19,391	0.024	0.022	0.010	4,874	0.027	0.025	0.013
STDE	19,391	0.422	0.260	0.537	4,874	0.390	0.225	0.521
ΔEPS	19,391	-0.923	-0.062	3.724	4,874	-1.010	-0.100	3.874
ΔROA	19,391	-0.036	-0.001	0.115	4,874	-0.042	-0.001	0.124
AFNUM	19,391	9.342	8.000	6.814	4,874	6.921	6.000	5.328
INST	19,391	55.655	60.100	24.852	4,874	52.756	56.320	27.308
ISSUE	19,391	0.053	0.000	0.223	4,874	0.050	0.000	0.219
HITEC	19,391	0.178	0.000	0.383	4,874	0.264	0.000	0.441
REGUL	19,391	0.119	0.000	0.324	4,874	0.100	0.000	0.300

Panel B: Descriptive Statistics for NASDAQ Firms

Variables	N	Full Sample			Matched Sample			
		Mean	Median	STD	N	Mean	Median	STD
LMVE	37,512	5.559	5.428	1.451	5,965	6.664	6.611	1.326
LMB	37,512	1.050	0.902	0.736	5,965	1.231	1.100	0.786
STDDR	37,512	0.043	0.040	0.020	5,965	0.041	0.039	0.021
STDE	37,512	0.316	0.153	0.566	5,965	0.367	0.174	0.660
ΔEPS	37,512	-1.120	-0.167	4.087	5,965	-0.999	-0.132	3.918
ΔROA	37,512	-0.045	-0.002	0.158	5,965	-0.042	-0.002	0.147
AFNUM	37,512	4.990	3.000	5.537	5,965	7.436	6.000	6.374
INST	37,512	37.456	33.260	25.952	5,965	47.138	46.710	27.375
ISSUE	37,512	0.090	0.000	0.287	5,965	0.099	0.000	0.298
HITEC	37,512	0.449	0.000	0.497	5,965	0.457	0.000	0.498
REGUL	37,512	0.077	0.000	0.266	5,965	0.076	0.000	0.264

Table 2 Likelihood of Management Forecasts

Table 2 shows the results from the MF occurrence test. Panel A gives results to a univariate test and Panel B presents the results from logistic regressions. DMF=1 for any quarter with at least one MF and 0 otherwise; NYSE = 1 if the firm is listed on the NYSE, and 0 otherwise; All variables are calculated at the beginning of the year (quarter), unless otherwise indicated. LMVE = log (Market value of equity); LMB = log (market-to-book ratio); STDDR = standard deviation of daily returns for previous year; STDMMR = standard deviation of previous 12 month return; STDE = standard deviation of earnings for previous 12 quarters; $\Delta ROA = [(\text{net income})_t - (\text{net income})_{t-1}]$ scaled by total asset $_{t-1}$; $\Delta EPS = [(EPS)_t - (EPS)_{t-1}]$ scaled by stock price $_{t-1}$; AFNUM = # of analysts following; INSTOWN = a percentage of institutional ownership; ISSUE=1 if the number of shares outstanding, adjusted for splits and dividends, increases by more than 10 percent over the previous year, and 0 otherwise; HITEC =1 if the firm belongs to the high-technology industry [Compustat SIC codes 2833-2836, 8731-8734, 3570-3577, 7370-7374, 3600-3674, or 5200-5961], and 0 otherwise; REGUL =1 if the firm belongs to regulatory industry [Telephone [Compustat SIC codes 4812-4813, 4833, 4841, 4811-4899, 4922-4924, 4931, 4941, 6021-6023, 6035-6036, 6141, 6311, 6321, or 6331] and 0 otherwise; LN_LIKE = log-likelihood of regression model. In Panel B, P-values are given in parentheses.

Panel A: Univariate Analysis

	Full Sample			Matched Sample		
	NYSE	NASDAQ	Total	NYSE	NASDAQ	Total
DMF =0	32,232	94,607	126,839	8,426	8,693	17,119
(%)	(79.32)	(89.52)	(86.69)	(80.59)	(83.14)	(81.86)
DMF =1	8,405	11,072	19,477	2,030	1,763	3,793
(%)	(20.68)	(10.48)	(13.31)	(19.41)	(16.86)	(18.14)
Total	40,637	105,679	146,316	10,456	10,456	20,912
(%)	(100)	(100)	(100)	(100)	(100)	(100)
Independence test	Chi-Square = 2649.4 (p-value <.0001)			Chi-Square = 23.0 (p-value <.0001)		

Panel B: Multivariate Analysis

	Pooled Regression		Fama-MacBeth
	Full Sample	Matched Sample	Approach
Intercept	-2.6028 (<.0001)	-2.4305 (<.0001)	-2.5721 (<.0001)
NYSE	0.1543 (<.0001)	0.3781 (<.0001)	0.269 (0.0008)
LMVE	0.0848 (<.0001)	0.026 (0.3287)	0.0695 (0.0155)
LMB	-0.1791 (<.0001)	-0.1467 (<.0001)	-0.0411 (0.4374)
STDR	0.1085 (<.0001)	0.1021 (<.0001)	0.0431 (0.2508)
STDE	-0.0372 (0.0077)	-0.0109 (0.7869)	-0.0516 (0.0601)
ΔROA	-0.0825 (<.0001)	-0.0561 (0.0479)	0.0049 (0.9154)
AFNUM	0.0503 (<.0001)	0.0683 (<.0001)	0.0418 (0.0006)
INSTOWN	0.0145 (<.0001)	0.0121 (<.0001)	0.0109 (<.0001)
ISSUE	-0.3815 (<.0001)	-0.5448 (<.0001)	-0.2232 (0.0280)
HITEC	0.2571 (<.0001)	0.2043 (<.0001)	0.2889 (0.0004)
REGUL	-0.6431 (<.0001)	-0.9396 (<.0001)	-0.7538 (0.0002)
# of obs	56,903	10,839	56,903
Pseudo R² (%)	14.43	13.66	11.86

Table 3 Market Reaction to Management Earnings Forecasts

Table 3 shows the results from market reaction test. *CAR* is the cumulative abnormal return in the three day window around earnings management forecast dates; *MFSUR* is the earnings surprise measured by [(management earnings forecast – most recent analyst consensus forecast before management forecast) / beginning period stock price]. The other variables are same as those in Table 2. Panel A gives *MFSUR*, *CAR*, and the Pearson correlation between *MFSUR* and *CAR* for NYSE and NASDAQ, respectively. In Panel A, ***, **, and * denote the significance of the difference in means or correlations between the NYSE and the NASDAQ for each sample at the 0.01, 0.05, and 0.10 levels, respectively. The p-values of the Pearson correlations are in parentheses. Panel B shows results of a regression that uses *CAR* as the dependent variable. *NYSE* is a dummy variable which takes on the value 1 if the firm is a NYSE firm, and 0 otherwise. *T*-statistics are in italics.

Panel A: Univariate Analysis

	Full Sample		Matched Sample	
	NYSE	NASDAQ	NYSE	NASDAQ
Full Sample				
MFSUR	0.0046	0.0062***	0.0047	0.0055***
CAR	0.0578	0.0956***	0.0701	0.0881***
MFSUR ≥ 0				
MFSUR	0.0047	0.0051**	0.0044	0.0054**
CAR	0.0105	0.0155***	0.0134	0.0161***
MFSUR < 0				
MFSUR	-0.0045	-0.0074***	-0.0052	-0.0056*
CAR	-0.0461	-0.0847***	-0.0598	-
				0.0829***
Corr b/w MFSUR &	0.3283	0.2885**	0.2826	0.2313**

Panel B: Market Reaction per one unit of Management Forecast News

	Full Sample			Matched sample			Fama-Macbeth approach		
	NYSE	NASDAQ	Pooled	NYSE	NASDAQ	Pooled	NYSE	NASDAQ	Pooled
Intercept	0.0064 <i>1.01</i>	0.0152 <i>1.63</i>	0.0026 <i>0.49</i>	0.059 <i>3.07</i>	0.0219 <i>0.98</i>	0.035 <i>2.43</i>	0.0034 <i>2.26</i>	-0.0148 <i>-0.77</i>	-0.1292 <i>-5.02</i>
MFSUR	0.7945 <i>19.38</i>	0.031 <i>2.97</i>	0.0343 <i>3.96</i>	2.1327 <i>13.66</i>	1.352 <i>10.21</i>	1.3897 <i>11.79</i>	0.9929 <i>7.09</i>	0.4912 <i>2.05</i>	0.7161 <i>1.68</i>
NYSE			0.014 <i>6.15</i>			0.0073 <i>1.78</i>			-0.0136 <i>-3.99</i>
MFSUR*			0.7367 <i>12.68</i>			0.7065 <i>3.31</i>			0.6127 <i>2.72</i>
MFAQ	-0.0075 <i>-4.18</i>	-0.0341 <i>-11.13</i>	-0.0211 <i>-11.83</i>	-0.0037 <i>-0.79</i>	-0.0198 <i>-3.23</i>	-0.0114 <i>-2.96</i>	-0.0097 <i>-2.27</i>	-0.0467 <i>-5.21</i>	-0.0189 <i>-3.38</i>
LMB	-0.0045 <i>-3.11</i>	-0.0082 <i>-3.28</i>	-0.0059 <i>-4.11</i>	-0.0076 <i>-2.09</i>	-0.0066 <i>-1.35</i>	-0.0074 <i>-2.48</i>	-0.0358 <i>-2.63</i>	-0.0091 <i>-1.21</i>	-0.0249 <i>-4.11</i>
LMVE	0.0006 <i>0.65</i>	0.0008 <i>0.52</i>	0.0005 <i>0.58</i>	-0.0046 <i>-1.64</i>	-0.0021 <i>-0.61</i>	-0.0033 <i>-1.46</i>	-0.01231 <i>-1.53</i>	-0.0004 <i>-0.11</i>	0.0235 <i>5.69</i>
AFNUM	0.0002 <i>1.12</i>	0.0003 <i>1.18</i>	0.0004 <i>2.31</i>	0.0002 <i>0.45</i>	0.0005 <i>0.98</i>	0.0004 <i>1.25</i>	0.0005 <i>1.39</i>	0.0008 <i>0.64</i>	-0.0029 <i>-4.15</i>
# of obs	10,420	10,957	21,377	2,166	2,145	4,311	10,420	10,957	21,377
R² (%)	6.52	7.37	6.5	13.09	11.07	11.4	7.91	4.44	6.5

Table 4 Likelihood of Management Forecasts when Firms Move from NASDAQ to NYSE

Table 4 shows the results of the MF occurrence test using regressions for 1 year (-1, +1), 2 years (-2, +2), and 3 years (-3, +3) before and after the listing change (LC). *AFTER* = 1 for the period after the listing change and 0 for the period before the listing change. The definitions of the other variables are as in Table 2. P-values are reported in parentheses. DMF (the occurrence of management forecasts during each quarter) is the dependent variable.

	(-1, +1)	(-2, +2)	(-3, +3)
Intercept	-1.7361 (0.0154)	-1.9885 ($<.0001$)	-2.5278 (0.6028)
AFTER	0.3701 (0.0927)	0.3860 (0.0178)	0.4790 (0.0007)
LMVE	0.0419 (0.7530)	0.0476 (0.6245)	0.0774 (0.3585)
LMB	0.3013 (0.1765)	0.1805 (0.2300)	0.2645 (0.0372)
STDR	0.5158 (0.0070)	0.3713 (0.0056)	0.3448 (0.0022)
STDE	-0.0209 (0.8522)	0.00008 (0.9796)	-0.0004 (0.8940)
ΔROA	-2.6093 (0.2402)	-1.1211 (0.4654)	-1.6021 (0.2609)
AFNUM	0.0481 (0.0766)	0.0494 (0.0104)	0.0557 (0.0006)
INSTOWN	0.0141 (0.0019)	0.0167 ($<.0001$)	0.0171 ($<.0001$)
ISSUE	0.00431 (0.9850)	0.1078 (0.5182)	0.0590 (0.6892)
HITEC	-0.6517 (0.0299)	0.0221 (0.9154)	0.3132 (0.0765)
REGUL	0.4017 (0.2532)	0.2663 (0.2976)	0.2473 (0.2621)
# of obs	473	743	1,053
Pseudo R² (%)	15.42	15.17	19.08

Table 5 Information Content of Management Forecasts Before and After Listing Changes

Table 5 shows the results of the market reaction test using regressions for 1 year (-1, +1), 2 years (-2, +2), and 3 years (-3, +3) before and after the listing change (LC). The other variables are same as those in Tables 2 and 3. *t*-statistics are in italics. In the 1st and 2nd columns under each of the three windows, we report regression results for the subgroups of pre- and post-LC periods, and in 3rd column under each of the windows, the regressions are based on the pooled sample. We set *AFTER* = 1 if the period is after the listing change and 0 otherwise. CAR is the dependent variable.

	(-1, +1) around LC			(-2, +2) around LC			(-3, +3) around LC		
	BEFORE	AFTER	Pooled	BEFORE	AFTER	Pooled	BEFORE	AFTER	Pooled
Intercept	0.084	-0.0834	-0.0101	0.067	-0.1359	-0.0463	0.0519	-0.0961	-0.0364
	<i>1.04</i>	<i>-1.84</i>	<i>-0.25</i>	<i>1.05</i>	<i>-3.94</i>	<i>-1.51</i>	<i>0.82</i>	<i>-3.25</i>	<i>-1.34</i>
MFSUR	0.0088	0.3133	0.0155	0.0121	0.3601	0.0154	0.0173	0.4424	0.0184
	<i>0.13</i>	<i>3.21</i>	<i>0.26</i>	<i>0.17</i>	<i>3.96</i>	<i>0.26</i>	<i>0.23</i>	<i>4.74</i>	<i>0.31</i>
AFTER			-0.026			-0.0328			-0.0275
			<i>-2.28</i>			<i>-3.56</i>			<i>-3.22</i>
MFSUR*AFT			0.3195			0.3572			0.4317
			<i>2.62</i>			<i>3.07</i>			<i>3.66</i>
MFAQ	0.0013	-0.0322	-0.0191	-0.0028	-0.0188	-0.0134	-0.0087	-0.0193	-0.0166
	<i>0.06</i>	<i>-2.59</i>	<i>-1.75</i>	<i>-0.15</i>	<i>-2.06</i>	<i>-1.61</i>	<i>-0.49</i>	<i>-2.46</i>	<i>-2.25</i>
LMB	-0.0116	-0.004	-0.0064	-0.0203	-0.0116	-0.0142	-0.0068	-0.0102	-0.0092
	<i>-0.72</i>	<i>-0.46</i>	<i>-0.81</i>	<i>-1.54</i>	<i>-1.71</i>	<i>-2.31</i>	<i>-0.54</i>	<i>-1.67</i>	<i>-1.66</i>
LMVE	-0.0137	0.0109	0.0027	-0.0071	0.0184	0.0101	-0.0074	0.0122	0.0071
	<i>-1.01</i>	<i>1.43</i>	<i>0.39</i>	<i>-0.62</i>	<i>3.21</i>	<i>1.89</i>	<i>-0.65</i>	<i>2.49</i>	<i>1.54</i>
AFNUM	0.0027	0.0006	0.0013	0.0002	-0.0003	0.0001	0.0003	-0.0001	0.0001
	<i>1.03</i>	<i>0.41</i>	<i>0.94</i>	<i>0.08</i>	<i>-0.26</i>	<i>0.01</i>	<i>0.14</i>	<i>-0.12</i>	<i>0.07</i>
# of obs	166	304	470	250	592	842	286	870	1,156
R² (%)	1.67	7.78	4.55	1.86	6.28	4.31	0.58	4.76	3.51

Table 6 Matched Analysis: Listing Change (NASDAQ to NYSE) Firms vs. Control Firms

Table 6, Panel A shows the results of the MF occurrence test using two regressions for both the period before and the period after the listing change using a pooled matched (listing change firms vs. control firms) sample. Panel B shows the results of market reaction test, and Columns 1-4 give results from the regressions before and after the listing change event for the two subgroups (control (NASDAQ) firms and listing change firms), respectively. Columns 5 and 6 show results of two regressions before and after the LC using a pooled matched sample. In these regressions, *LC* takes on the value 1 if a firm moves from NASDAQ to NYSE and 0 otherwise. The other variables are same as those in Tables 2 and 3. In Panel A (logit regression), DMF is the dependent variable, and p-values are in parentheses. In Panel B (OLS regression), CAR is the dependent variable, and *t*-statistics are in italics.

Panel A: Likelihood of Management Forecasts

	Before LC (-3, 0)	After LC (0, 3)
Intercept	-3.7761 (<.0001)	-2.5444 (<.0001)
LC	0.1006 (0.6396)	0.4097 (0.0350)
LMVE	0.1536 (0.1292)	-0.1844 (0.9728)
LMB	-0.0737 (0.6871)	-0.1279 (0.2395)
STDR	0.2807 (0.0405)	-1.0088 (0.3619)
STDE	-0.0877 (0.6909)	0.4142 (0.0081)
ΔROA	-0.7467 (0.4148)	-1.1211 (0.6696)
AFNUM	0.0879 (0.0005)	0.0225 (0.2382)
INSTOWN	0.0077 (0.1027)	0.0312 (<.0001)
ISSUE	0.0208 (0.9315)	0.1241 (0.6149)
HITEC	-0.0584 (0.8258)	-0.0580 (0.8135)
REGUL	0.1788 (0.6074)	-0.2275 (0.4749)
# of obs	1022	727
Pseudo R² (%)	12.03	23.30

Panel B: Information Content of Management Forecasts

	LC Firms vs. Control Firms				Pooled Sample	
	BEFORE LC		AFTER LC		BEFORE	AFTER
	Control	LC Firms	Control	LC Firms	LC	LC
Intercept	0.1141	-0.0379	-0.0706	-0.0322	0.0595	-0.0415
	<i>1.72</i>	<i>-0.48</i>	<i>-1.62</i>	<i>-0.68</i>	<i>1.18</i>	<i>-1.37</i>
MFSUR	1.0044	0.6917	0.2339	0.9838	1.1923	0.2667
	<i>1.29</i>	<i>1.37</i>	<i>1.21</i>	<i>3.31</i>	<i>1.62</i>	<i>1.42</i>
LC					-0.0372	-0.0168
					<i>-2.08</i>	<i>-1.74</i>
MFSUR*L					-0.7813	0.6988
C					<i>-0.91</i>	<i>2.02</i>
MFAQ	-0.0272	-0.0265	0.0104	0.0004	-0.0292	0.0048
	<i>-1.04</i>	<i>-1.08</i>	<i>0.81</i>	<i>0.04</i>	<i>-1.19</i>	<i>0.55</i>
LMB	-0.0077	0.0459	-0.0239	-0.0319	0.0159	-0.0102
	<i>-0.43</i>	<i>2.21</i>	<i>-1.71</i>	<i>-2.67</i>	<i>1.17</i>	<i>-3.08</i>
LMVE	-0.0269	-0.0061	0.009	0.0036	-0.0147	0.0062
	<i>-1.83</i>	<i>-0.39</i>	<i>1.04</i>	<i>0.44</i>	<i>-1.37</i>	<i>1.06</i>
AFNUM	0.0106	-0.0007	0.0009	0.0005	0.0036	-0.0279
	<i>3.03</i>	<i>-0.23</i>	<i>0.97</i>	<i>0.53</i>	<i>1.57</i>	<i>-1.01</i>
# of obs	189	177	395	459	366	854
R² (%)	7.87	5.18	2.57	4.21	4.62	3.29

Table 7 Listing Changes from AMEX to NYSE

Table 7 shows the results of the MF occurrence and market reaction tests using regressions for 3 years (-3, +3) before and after LC. *AFTER* = 1 for the period after the listing change and 0 otherwise. In Panel A (logit regression), DMF is the dependent variable, and p-values are in parentheses. In Panel B (OLS regression), CAR is the dependent variable, and *t*-statistics are in italics. Variable definitions are as above.

Panel A: Likelihood		Panel B: Information Content	
Intercept	-3.9045 (0.0009)	Intercept	0.0982 <i>1.21</i>
AFTER	0.5196 (0.1724)	MFSUR	0.4159 <i>1.06</i>
LMVE	0.3112 (0.1604)	AFTER	-0.0117 <i>-0.44</i>
LMB	-0.9241 (0.0059)	MFSUR*AFTER	1.1546 <i>1.63</i>
STDR	-0.0287 (0.9333)	MFAQ	-0.0173 <i>-0.93</i>
STDE	0.0924 (0.1369)	LMB	-0.0001 <i>-0.01</i>
ΔROA	-7.3411 (0.0961)	LMVE	-0.0145 <i>-0.28</i>
AFNUM	0.1032 (0.0307)	AFNUM	0.0025 <i>0.28</i>
INSTOWN	0.0103 (0.1870)	# of obs	111
ISSUE	-0.5361 (0.1526)	R² (%)	10.84
HITEC	-0.2905 (0.5810)		
REGUL	-7.7802 (0.1772)		
# of obs	249		
# of MF	58		
Pseudo R² (%)	28.49		

Table 8 Regulation FD

Table 8 controls for Regulation FD. Respective definitions for Panels A and B are as in Tables 2 and 3, and their respective p-values (logit regression) and t-statistics (OLS regression) are in parentheses and italics. Full and Matched represent the full and size-matched samples. In Panel A, DMF is the dependent variable, and in Panel B, the dependent variable is CAR. Panel A shows the frequency controlling for Reg FD, and Panel B shows Information content of MF while controlling for Reg FD.

Panel A: Likelihood of MF

	Full Sample		Matched Sample	
	Before Reg FD	After Reg FD	Before Reg FD	After Reg FD
Intercept	-2.6378 (<.0001)	-2.3975 (<.0001)	-2.3149 (<.0001)	-1.9628 (<.0001)
NYSE	0.1462 (0.0016)	0.3731 (<.0001)	0.2614 (0.0013)	0.4945 (<.0001)
LMVE	0.0496 (0.0054)	0.1066 (<.0001)	0.0075 (0.8645)	0.0582 (0.1348)
LMB	-0.0712 (0.0123)	-0.0263 (0.2888)	-0.1256 (0.0399)	-0.0239 (0.6636)
STDR	0.0413 (0.0834)	0.0072 (0.6919)	0.1029 (0.0394)	-0.0739 (0.0906)
STDE	0.0389 (0.2576)	-0.1018 (<.0001)	0.0458 (0.5391)	-0.0578 (0.2361)
ΔROA	-0.0451 (0.0936)	0.0641 (0.0118)	-0.0379 (0.4621)	0.1132 (0.0456)
AFNUM	0.0469 (<.0001)	0.0291 (<.0001)	0.0534 (<.0001)	0.0491 (<.0001)
INSTOWN	0.0068 (<.0001)	0.0156 (<.0001)	0.0061 (<.0001)	0.0105 (<.0001)
ISSUE	-0.4066 (<.0001)	-0.0671 (0.3204)	-0.4804 (0.0009)	-0.2047 (0.2217)
HITEC	0.2181 (<.0001)	0.3601 (<.0001)	0.1808 (0.0317)	0.3557 (<.0001)
REGUL	-0.8252 (<.0001)	-0.4934 (<.0001)	-0.8695 (<.0001)	-0.9426 (<.0001)
# of obs	31,662	21,780	6,066	4,120
Pseudo R² (%)	7.78	17.11	7.02	13.81

Panel B: Information content of MF

	Full Sample		Matched Sample	
	Before Reg FD	After Reg FD	Before Reg FD	After Reg FD
Intercept	0.0821 <i>1.73</i>	0.0147 <i>2.72</i>	-0.0319 <i>-0.21</i>	0.0409 <i>2.68</i>
MFSUR	0.0933 <i>3.31</i>	0.0206 <i>2.47</i>	1.4494 <i>7.92</i>	1.2722 <i>7.09</i>
NYSE	0.0334 <i>5.70</i>	0.0078 <i>3.39</i>	0.0122 <i>1.21</i>	0.0058 <i>1.34</i>
MFSUR*NYSE	0.6152 <i>5.77</i>	0.8082 <i>11.14</i>	0.6534 <i>1.74</i>	0.7533 <i>2.66</i>
MFAQ	-0.0469 <i>-9.99</i>	-0.0122 <i>-6.72</i>	-0.0326 <i>-3.29</i>	-0.0048 <i>-1.21</i>
LMB	-0.0111 <i>-3.12</i>	-0.0048 <i>-3.19</i>	-0.0186 <i>-2.47</i>	-0.0038 <i>-1.19</i>
LMVE	0.0032 <i>1.35</i>	0.0013 <i>1.42</i>	0.0016 <i>0.28</i>	-0.0051 <i>-2.11</i>
AFNUM	0.0012 <i>2.08</i>	0.0002 <i>1.28</i>	0.0001 <i>0.08</i>	0.0004 <i>1.33</i>
# of obs	5,335	16,042	1,040	3,271
R² (%)	6.62	2.60	12.47	5.54

Figure 1 shows the frequency of management forecasts per quarter for the full sample.

Figure 1

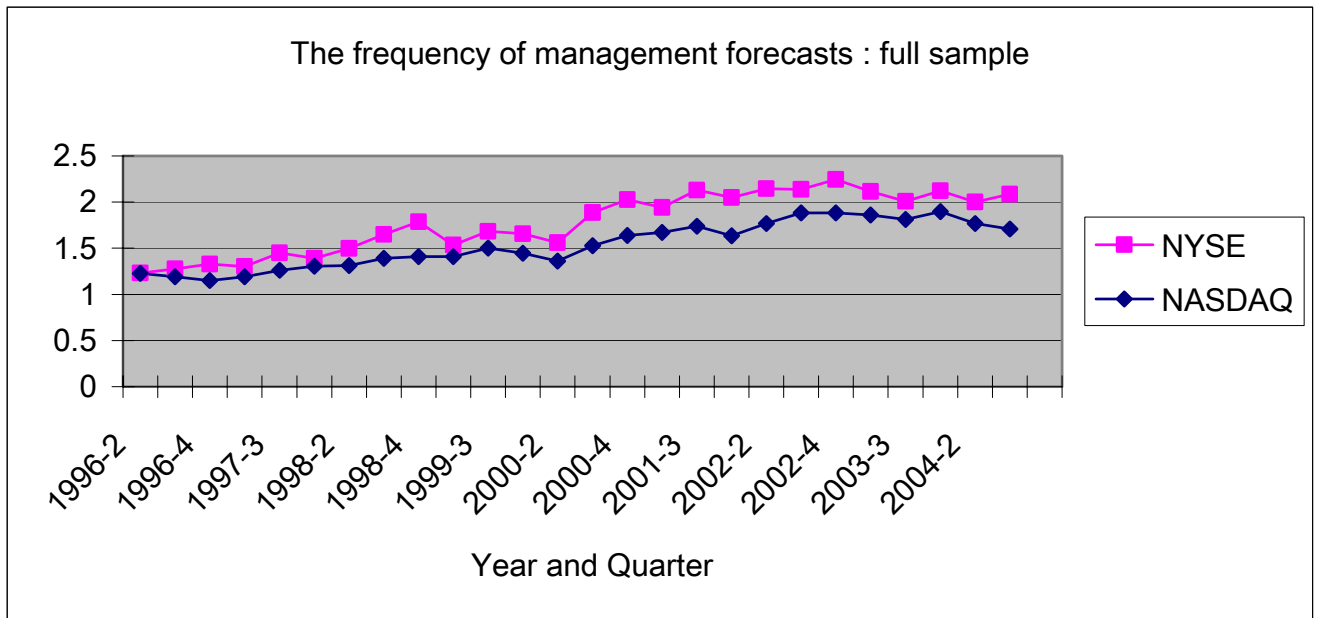


Figure 2 shows the frequency of management forecasts per quarter for the matched sample.

Figure 2

