Voluntary Disclosure and Equity Offerings: Reducing Information Asymmetry or Hyping the Stock?*

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Abstract
We examine corporate disclosure activity around seasoned equity offerings and its relationship to stock prices. Beginning six months before the offering, our sample issuing firms dramatically increase their disclosure activity, particularly for the categories of disclosure over which firms have the most discretion. The increase is significant after controlling for the firm’s current and future earnings performance and tends to be largest for firms with selling shareholders participating in the offering. However, there is no change in the frequency of forward-looking statements prior to the equity offering, something that is expressly discouraged by the securities law.

Firms that maintain a consistent level of disclosure experience price increases prior to the offering, and only minor price declines at the offering announcement relative to the control firms, suggesting that disclosure may have reduced the information asymmetry inherent in the offering. Firms that substantially increase their disclosure activity in the six months before the offering also experience price increases prior to the offering relative to the control firms, but suffer much larger price declines at the announcement of their intent to issue equity, suggesting that the disclosure increase may have been used to “hype the stock” and the market may have partially corrected for the earlier price increase. Firms that maintain a consistent disclosure level have no unusual return behavior relative to the control firms subsequent to the announcement, while the firms that “hyped” their stock continue to suffer negative returns, providing further evidence that the increased disclosure activity may have been hype, and suggesting that the hype may have been successful in lowering the firms’ cost of equity capital.

Keywords Cost of capital; Disclosure; Information asymmetry; Stock offering

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Condensé
Les auteurs examinent l'activité de publication d'information des entreprises aux environs de l'émission de titres bien établis et le rendement des titres qui y est associé. La période qui entoure l'émission de titres peut inciter fortement l'entreprise à modifier sa politique d'information. Si l'information publiée par une entreprise est susceptible d'augmenter le produit d'une émission de titres, soit en réduisant l'asymétrie de l'information soit en « moussant » (hyping) le titre, le coût des capitaux propres sera plus faible au moment de l'émission. L'article 5c de la Loi sur les valeurs mobilières des États-Unis peut faire contrepoids en restreignant les entreprises dans leurs efforts pour « conditionner le marché », en prévision d'une émission prochaine, en modifiant sensiblement leur activité de publication d'information (gun-jumping). L'entreprise se trouve donc partagée entre le désir d'augmenter ses capitaux propres à des conditions avantageuses et l'obligation de se soumettre aux restrictions que lui impose la loi à cet égard.

Les auteurs décrivent avec minutie les pratiques des entreprises en matière de publication d'information aux environs de l'émission de titres et tentent d'évaluer les conséquences de ces pratiques. Pour faciliter l'analyse, ils s'intéressent plus particulièrement à un nombre relativement restreint d'entreprises au sujet desquelles ils réunissent une importante quantité de renseignements, tant avant qu'après l'émission des titres. Puisqu'ils étudient les variations dans l'activité de publication d'information des entreprises et dans l'évolution chronologique de leur rendement, ils contrôlent les variations, à l'échelle du secteur d'activité, des pratiques en matière de publication d'information et du rendement en compilant des données pour un échantillon correspondant d'entreprises de contrôle qui n'ont pas émis de titres au cours de la même période. Les auteurs limitent leur échantillon aux petites entreprises du fait que ces dernières, auxquelles les analystes accordent un intérêt modéré, sont davantage susceptibles de recourir à leur politique de publication d'information pour influencer la façon dont le marché les perçoit et du fait qu'il est possible de suivre leur activité de publication d'information de manière plus complète.

Les résultats obtenus indiquent que l'activité de publication d'information des entreprises de l'échantillon et des entreprises de l'échantillon de contrôle est très comparable en ce qui a trait à la fréquence et s'intensifie petit à petit jusqu'à six mois avant l'annonce de l'émission. Les entreprises émettrices augmentent toutefois radicalement leur activité de publication d'information six mois avant l'émission comparativement au semestre précédent (et comparativement aux entreprises de l'échantillon correspondant qui ne font pas d'émission). Elles publient à intervalle plus court de l'information au sujet de leur rendement ; elles fournissent davantage de détails et communiquent davantage l'interprétation de leurs résultats par la direction ; elles sont en général plus optimistes dans leurs déclarations relatives au semestre précédent. L'on n'observe cependant pas de changement dans la fréquence des déclarations prospectives préalables à l'émission de titres, ce que découragent expressément les lois sur le conditionnement du marché.

Bien qu'il soit difficile d'en tirer des conclusions définitives, les constatations des auteurs permettent de croire que les entreprises intensifient leur activité de publication d'information à l'approche de l'annonce d'une émission de titres. Les résultats les plus élevés sont observés pour les catégories de renseignements à l'égard desquelles les entreprises sont le plus discrètes, ce qui permet de supposer que les variations dans la publication d'information sont le résultat de choix délibérés de la part des gestionnaires. L'augmentation de la fréquence...
de publication avant l'émission est significative, même une fois contrôlée la performance de l'entreprise au chapitre des résultats actuels et futurs, ce qui indique que l'amélioration de cette performance ne saurait expliquer à elle seule l'intensification de l'activité de publication. En outre, les entreprises ayant des actionnaires vendeurs (souvent des initiés) qui participent à l'émission publient davantage d'information que les entreprises qui n'ont pas d'actionnaires vendeurs, bien que cette observation ne soit pas concluante, compte tenu de la taille modeste de l'échantillon. Enfin, même une fois contrôlée la performance antérieure à l'annonce de l'émission, la fréquence de la publication d'information peut distinguer les entreprises émettrices des entreprises de l'échantillon de contrôle.

Les auteurs se demandent ensuite si ces activités paraissent associées à un coût du capital inférieur. Cette déduction serait forcément circonstancielle étant donné l'impossibilité d'observer quels seraient les rendements s'il n'y avait pas de publication d'information. Les auteurs se demandent si les variations transversales dans l'activité de publication d'information des entreprises expliquent les variations transversales dans le rendement de leurs titres par rapport à celui des entreprises de l'échantillon de contrôle, avant l'annonce d'une émission de titres à venir, au moment de cette annonce et pendant la période qui suit. Les auteurs visent à déterminer si l'augmentation des informations optimistes est associée à une hausse du cours des titres avant l'émission ; si le cours supérieur se maintient une fois l'émission annoncée ; et s'il est justifié à la lumière des rendements postérieurs à l'annonce. Les auteurs, reconnaissant qu'il est difficile d'établir un lien de cause à effet entre l'activité de publication d'information et les rendements et qu'il est impossible de déterminer avec certitude la cause des fluctuations des cours, tentent de dresser un tableau cohérent de l'activité de publication d'information et du comportement concomitant du cours des titres.

Les auteurs constatent que la hausse des cours avant l'émission, par rapport à la situation des entreprises de l'échantillon de contrôle, est en corrélation positive avec la fréquence de publication d'information de l'entreprise, même une fois contrôlés les résultats actuels et futurs. À la limite, les titres des entreprises qui publient de l'information plus favorable enregistrent un rendement antérieur à l'annonce supérieur de 1 à 5 pour cent, selon la nature de l'information. Il est toutefois possible que le cours augmente avec l'activité de publication d'information parce que les gestionnaires « moussent » les titres ou que la situation économiq issue de l'entreprise s'est améliorée sous un angle que ne permettent pas de percevoir les résultats actuels ou futurs. Si l'activité de publication d'information révèle une amélioration de la situation économique, l'asymétrie de l'information est alors réduite et la chute du cours lors de l'annonce de l'émission devrait être plus faible si l'entreprise a publié davantage d'information durant la période précédant l'annonce. En revanche, si l'entreprise se contente de mousser les titres dans la période qui précède l'annonce de l'émission, les investisseurs devraient réévaluer leur attitude à l'égard de l'intensification de la publication d'information une fois connus les mobiles de l'entreprise, et la chute du cours au moment de l'annonce devrait être plus importante si l'entreprise a intensifié ses activités de publication d'information. De plus, si l'entreprise a moussé les titres et que la réaction du marché à l'annonce était incomplète, le rendement du titre à long terme après l'annonce devrait poursuivre sa chute à mesure que le marché constatera que sa performance n'est pas à la hauteur des attentes. Il s'agit là d'un élément crucial puisque, si le fait de mousser les titres augmente le produit de l'émission, la réaction durant la période de l'annonce doit être incomplète, ce qui suppose des rendements négatifs pour la période postérieure à l'annonce.
Les constatations des auteurs confirment que la publication d’information sert à la fois à réduire l’asymétrie de l’information et à mousser les titres, selon les antécédents de l’entreprise en ce qui a trait à la fréquence de publication d’information. Le rendement des titres dans les cinq jours qui entourent l’annonce de l’émission et dans les dix-huit mois suivant cette annonce augmente de façon sensible avec la fréquence de publication de l’entreprise, mais diminuent également de façon sensible avec la variation de la fréquence de publication avant l’annonce. En considérant l’ensemble des trois espaces de temps à l’intérieur desquels le rendement est analysé, il semble que les entreprises qui maintiennent une activité constante de publication d’information voient leurs cours augmenter avant l’émission et ne baisser que légèrement au moment de l’annonce de l’émission, ce qui est conforme à l’idée selon laquelle la publication d’information réduit l’asymétrie de l’information et, partant, les mauvais choix des investisseurs au moment de l’émission. Les entreprises qui intensifient de façon appréciable leur activité de publication d’information dans les six mois qui précèdent l’émission enregistreront également une hausse des cours avant l’émission, mais ces cours déclinent de façon beaucoup plus importante au moment où elles annoncent leur intention d’émettre des titres. Dans le cas de ces entreprises, il semble que l’intensification de la publication d’information corresponde à un effort pour « mousser le titre », le marché corrigeant partiellement la précédente hausse du cours. Enfin, le rendement des entreprises qui ont maintenu constante la fréquence de publication ne présente pas d’anomalie par rapport au rendement des entreprises de l’échantillon de contrôle à la suite de l’annonce, tandis que les entreprises qui ont « moussé » leur titre continuent d’enregistrer des rendements négatifs. Cette observation corroboré la notion voulant que l’intensification de l’activité de publication d’information corresponde, au moins en partie, à un effort pour « mousser » le titre et que cet effort puisse avoir porté fruit en réduisant le coût des capitaux propres des entreprises grâce à l’augmentation du produit de l’émission.

1. Introduction

In this paper we examine corporate disclosure activity around seasoned equity offerings and the associated stock returns. The period around an equity offering presents potentially strong incentives to change a firm’s disclosure policy. If a firm’s disclosures can increase the proceeds from security issuance, either by reducing information asymmetry or by “hyping” the stock, it will enjoy a lower cost of equity capital at the issuance.¹ Potentially offsetting this incentive is section 5(c) of the Securities Act, which constrains firms from “conditioning the market” for the upcoming issuance by significantly altering their disclosure activity (known as “gun-jumping”). Consequently, the firm faces a conflict between the desire to raise equity capital on favorable terms and the need to remain within the bounds of the gun-jumping laws.

Our goal in this paper is to carefully describe firms’ disclosure practices around equity offerings and attempt to assess the consequences of these actions. To facilitate this, we focus on a relatively small number of firms and gather a substantial amount of detail about them both before and after the equity offering. Because we examine changes in firms’ disclosure activity and returns over time, we control for industry-wide changes in disclosure practices and returns by collecting data for a matched sample of control firms that did not issue equity over the same period.
We limit our sample to small firms because, given their limited analyst following, they are more likely to use their disclosure policy to influence market perceptions and we can capture their disclosure activity more completely.

Our results show that the sample and control firms' disclosure activity is very comparable in terms of frequency and tone up to six months before the offering is announced. Beginning six months before the offering, however, the issuing firms dramatically increase their disclosure activity relative to the prior six-month period (and relative to the matched nonoffering firms). They make more frequent disclosures regarding their performance, provide more detail and more management interpretation of their results, and are generally more optimistic in their statements relative to the previous six months. However, there is no change in the frequency of forward-looking statements prior to the equity offering, something that is expressly discouraged by the gun-jumping laws.

While difficult to establish definitively, our evidence suggests that the increase in disclosure activity was in anticipation of the soon-to-be-announced equity offering. Our results are generally strongest for the categories of disclosure over which firms have the most discretion, suggesting that the disclosure changes reflect conscious decisions by managers. The increase in disclosure frequency prior to the offering is significant even after controlling for the firm's current and future earnings performance, indicating that it is not simply improved earnings performance that drives the increase in disclosure. Moreover, firms with selling shareholders (frequently insiders) who are participating in the offering disclose more than firms without selling shareholders, although the results are only suggestive since the sample size is small. Finally, even after controlling for returns prior to the offering announcement, the frequency of disclosure can discriminate between issuing and control firms.

Next, we ask whether these activities appear to be associated with a lower cost of capital. This evidence is necessarily circumstantial since we cannot observe what returns would be in the absence of disclosure. We examine whether cross-sectional variation in firms' disclosure activity explains cross-sectional variation in their stock returns relative to the control firms prior to the announcement of an upcoming equity issuance, at the announcement, and in the post-announcement period. Our interest is in providing evidence on whether increases in optimistic disclosure are associated with increases in share price prior to the offering; whether the increased price is sustained once the offering is announced; and whether it is warranted, as evidenced by the firm's post-announcement returns. Recognizing that drawing a causal link between disclosure activity and returns is difficult and that we cannot definitively establish the cause of various price changes, we attempt to paint a consistent picture of disclosure activity and coincident stock price behavior.

We find that the price increase preceding the offering relative to the control firms is positively correlated with the firm's disclosure frequency, even after controlling for current and future earnings. At the margin, firms making one more positive disclosure statement experience a 1 percent and 5 percent higher pre-announcement stock return, depending on the type of statement made. However, price could be increasing with disclosure activity because managers are hyping
their stock, or because the underlying economics of the firm have improved in a way not captured by current or future earnings. If the disclosure activity reveals this improved economic condition, then information asymmetry is reduced and the price decline at the announcement of the offering should be smaller for a firm that disclosed more in the previous period. Alternatively, if the firm is simply hyping its stock in the pre-offering announcement period then investors should reassess their earlier response to the increase in disclosure once the firm’s motive is known, and the price decline at the announcement should be larger for a firm that increased its disclosure activity. Further, if the firm was hyping its stock and the market response at the announcement was incomplete, then the long-term stock return after the announcement should continue to decline as its performance fails to live up to expectations. This step is crucial because if hyping the stock is going to increase the issue proceeds, then the announcement-period reaction must be incomplete, implying negative post-announcement-period returns.

We find evidence consistent with disclosure being used both to reduce information asymmetry and to hype the stock, depending on the firm’s history of disclosure frequency. The stock returns in the five days around the offering announcement and in the 18 months following the announcement are significantly increasing in the firm’s disclosure frequency, but are also significantly decreasing in the change in disclosure frequency prior to the announcement. Putting the three return windows together, it appears that firms maintaining a consistent level of disclosure experience price increases prior to the offering and only minor price declines at the offering announcement, consistent with the idea that the disclosure reduced the information asymmetry and adverse selection inherent in the offering. Firms that substantially increase their disclosure activity in the six months prior to the offering also experience price increases prior to the offering but suffer much larger price declines at the announcement of their intent to issue equity. For these firms it appears that the disclosure increase may have been an attempt to hype the stock and the market partially corrects for the earlier price increase. Finally, the firms that maintain a consistent disclosure frequency have no unusual return behavior relative to the control firms subsequent to the announcement, while the firms that hyped their stock continue to suffer negative returns. This is consistent with the notion that increased disclosure activity was at least partially hype and that the hype may have been successful in lowering the firms’ cost of equity capital by increasing the proceeds from the offering.

Our research contributes to four different literatures. First, we add to the ongoing debate in the securities law literature over the gun-jumping prohibition in particular, and over special regulation around security issuance more generally. As discussed more fully in the appendix, the limitations on disclosure around securities offerings are unique in that even nonfraudulent disclosure is prohibited, whereas most of the securities law is specifically designed to encourage disclosure. Critics of the law note the evidence on efficient markets (i.e., that investors can see through any attempt by management to influence the market with noncredible disclosures) and argue that disclosure should be encouraged around a securities offering to ensure efficient pricing. Proponents argue that the incentives to shape investors’
opinions are too strong around an equity offering, and this event merits special disclosure regulation (see Chiappinelli 1989; Pierce 1976; and Longstreth and Prager 1993 for an extended discussion).

The SEC is currently reexamining the regulatory structure for offerings and has proposed sweeping changes to the offering process (SEC 1998). At the heart of the current proposal is a fundamental switch from registering transactions to registering companies. The underlying premise is that incentives to manipulate information are not sufficiently different around securities offerings to justify special regulation and, consequently, they should not require additional disclosure and SEC scrutiny. However, little systematic evidence has been brought to bear on management’s disclosure incentives and behavior around equity offerings. As with most research, our results do not provide clear policy implications because we cannot definitively rule out omitted correlated variables or weigh all costs and benefits to disclosure. However, our findings, taken with the results of other studies on earnings management and analyst behavior around equity offerings, suggest that unique incentives may exist to inflate share price preceding an equity issuance.

Second, existing research indicates that managers may attempt to influence the price received in equity offerings through accruals management prior to the security offering (e.g., Teoh, Welch, and Wong 1998; Rangan 1998). Our research indicates that changes in disclosure policy may also be an important mechanism for increasing the proceeds from securities offerings. This result is in contrast to previous disclosure research, which finds no significant increase in management earnings forecasts prior to equity offerings (Ruland, Tung, and George 1990; Frankel, McNichols, and Wilson 1995). Our results show that it would be wrong to conclude that, because earnings forecasts do not increase around securities offerings, the offering firms’ disclosure practices do not change. We document a significant increase in a number of other types of disclosure statements, including performance-related statements and the interpretation or “spin” put on the performance by management. Consistent with our results, Clarkson, Kao, and Richardson (1999) find a significant positive relationship between the change in the number of press releases issued by a sample of 55 of the largest firms on the Toronto Stock Exchange between 1991 and 1992 and the amount of equity issued in 1993. They find a similar relationship between the change in the quality of the Management Discussion and Analysis (MD & A) disclosure and the amount of equity issued in the following year.

Third, many authors have studied the determinants of the price drop at the announcement of the equity offering, generally concluding that the decline is due to adverse selection (Asquith and Mullins 1986; Korajczyk, Lucas, and McDonald 1991; Masulis and Korwar 1986; Mikkelsen and Partch 1986). Unlike previous studies, our research examines how the amount of firm-provided information affects adverse selection at the offering announcement. While our design differs, our results add to this literature by suggesting that sustained disclosure may reduce the information asymmetry and, hence, the adverse selection present at the offering, although temporary increases in disclosure activity prior to the offering tend to have the opposite effect.
Fourth, we add to the literature on the relationship between disclosure and the cost of capital. Most prior research links disclosure to cost of capital indirectly, either through its association with characteristics of the firm’s information environment (e.g., Lang and Lundholm 1996; Healy, Hutton, and Palepu 1999) or through its association with the implicit discount rate used by the market in valuing the firm’s equity (e.g., Botosan 1997; Botosan and Plumlee 2000). This research examines the issue more directly by focusing on the point at which the firm acquires equity capital and, hence, when its equity cost of capital (how much equity it must sacrifice for a dollar of capital) is determined. In addition to considering the potential effect of disclosure in reducing information asymmetry, we suggest that hype may be a mechanism used by management to affect cost of capital.

In the next section we discuss our hypotheses, and in section 3 we describe the sample and the disclosure data we collected. These are followed by two sections of results. In section 4 we examine the firm’s disclosure activities around the equity offering in some detail. In section 5 we examine the consequences of different disclosure activities on the stock returns around the equity offering. We conclude in section 6.

2. Hypotheses

As noted above, our analysis is in two parts. First we examine the determinants of disclosure, and then we investigate the relationship between disclosure choice and stock returns. While we view our analysis as primarily descriptive and not designed to test a specific theory, we use the following hypotheses to guide the exposition.

In terms of disclosure behavior, we have two hypotheses (stated in the alternative form), as follows:

**HYPOTHESIS 1. Issuing firms increase their disclosure activity prior to equity offerings relative to the change in disclosure activity of similar nonissuing firms over the same period.**

There are at least two motives for this hypothesis. First, issuing firms may increase disclosure activity because of a desire to reduce information asymmetry and, hence, the stock price drop normally associated with the announcement of an equity offering. Masulis and Korwar (1986) and others document a share price drop at the announcement of an equity offering, and Myers and Majluf (1984) suggest that the share price drop reflects the adverse selection due to asymmetric information. In support of this, Korajczyk, Lucas, and McDonald (1991) show that firms time their equity offerings shortly after earnings releases, arguing that firms do this because this is when information asymmetry tends to be low. We hypothesize that another way to mitigate an information asymmetry effect is by increasing voluntary disclosure activity prior to the equity offering announcement.

A second reason that firms may increase disclosure prior to an equity offering is to hype the stock, thereby increasing the proceeds from the offering and reducing the cost of capital. This is the concern of regulators in establishing special disclosure
requirements around equity offerings. The concern here is not that disclosure is fraudulent, since that is covered by normal securities regulations, but that by selectively increasing disclosure, firms are "encouraging the formation by the offeree of an opinion of the value of the securities before a registration statement and prospectus are filed" (Cari Loeb, Rhoades & Co., 38 SEC 843 (1959), as quoted in Jennings and Marsh 1987). Later we attempt to distinguish between these two motives for increased disclosure using stock returns.

Our second hypothesis is

**HYPOTHESIS 2.** The hypothesized increase in issuing firms' disclosure activity prior to equity offerings is in anticipation of the upcoming offering.

Evidence in support of the second hypothesis will necessarily be circumstantial because we cannot observe management's intentions.

Our next three hypotheses ask whether there is a cross-sectional relationship between the disclosure activity prior to the equity-issuance announcement and stock returns in periods around the announcement. We focus on three event windows, the pre-announcement period, the announcement window, and the post-announcement period.

**HYPOTHESIS 3.** Stock returns prior to the equity issuance are increasing in the disclosure activity of the firms after controlling for the firms' underlying economic performance.

The following two hypotheses are designed to distinguish between the two different reasons for the hypothesized increase in disclosure activity prior to the offering announcement: reducing information asymmetry and hyping the stock.

**HYPOTHESIS 4.** If the increase in disclosure activity prior to the equity-issuance announcement reduces information asymmetry, then the stock price response to the announcement will be increasing in the increase in disclosure activity. Alternatively, if the disclosure activity is hyping the stock, then the stock price response will be decreasing in the increase in disclosure activity.

If the increased disclosure activity is simply communicating additional information, then more information leaves less residual information asymmetry at the time of the equity-issuance announcement and, consequently, a smaller stock price decline. However, if the increased disclosure activity is an attempt to hype the stock, then when the market learns of the firms' intentions to issue equity it will discount the prior disclosures and the firms that increased their disclosure the most will suffer the largest downward stock price revisions.

The final hypothesis examines the relationship between the pre-announcement disclosure activity and the post-announcement returns.
HYPOTHESIS 5. If the increase in disclosure activity prior to the equity-issuance announcement is hype then it will be negatively related to the stock returns subsequent to the announcement period.

If the disclosures prior to the announcement are simply communicating new information, then there should be no relationship between these disclosures and returns after the announcement period. However, if the increase in disclosure activity is hype designed to raise the equity-issuance price, then management must anticipate only a partial correction at the announcement date. Consequently, the greater the hype in the pre-announcement period, the lower the returns subsequent to the announcement as the firms fail to live up to the expectation they raised earlier.

For the last two hypotheses, we divide disclosure into two pieces: the level of disclosure and the change in disclosure. The notion is that the market may interpret disclosure activity differently based on the pattern, with substantial increases in disclosure viewed as an attempt to hype the stock.

3. The data

The sample

Our intent in selecting the sample is to gather as much detail as possible concerning the disclosures of relatively small firms around the time of a seasoned equity offering. A convenient way to identify such firms is by the filing document they use when registering the new shares with the SEC. In particular, a firm that has been in the SEC filing system for at least three years and has a market capitalization of less than $150 million typically files an S-2 registration statement when issuing new shares. Consequently, our initial sample consists of the 64 industrial firms filing S-2 registration statements with the SEC during 1992. Next we eliminated 11 firms because they were not quoted on NASDAQ's National Market System, so the price data is too sparse to be reliable, and we eliminated 5 firms because they were not covered by COMPSTAT. Of the remaining 48 firms, 7 withdrew their registrations and did not offer stock, leaving 41 firms that issued equity.

For each “offering” firm, we collected data for a matched firm that did not issue equity in the three-year period surrounding the offering firm’s effective registration date. Using a matched-pair design allows us to make more precise statements about how the offering firms alter their disclosures around the equity offering and provides a natural control for industry- and size-related effects in our returns analysis. Because we are studying disclosure activity and returns through time, it is important that we control for any industry-specific and overall trends in disclosure or returns. The final sample, consisting of 41 offering firms and 41 matched nonoffering firms, is given in Table 1.

We selected the 41 nonoffering firms with a number of matching criteria designed to ensure that the nonoffering firms operate in similar information environments and have similar returns determinants to the offering firms. In order of importance, we match on (1) size, as measured by total assets and market value; (2) industry; (3) exchange; and (4) fiscal year-end. As seen in Table 1, 34 of the
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<th>Nonoffering firm match</th>
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(The table is continued on the next page.)
TABLE 1 (Continued)

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<th>XCHG</th>
<th>SIC</th>
<th>Nonoffering firm match</th>
<th>FYR</th>
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<td>Noland Co.</td>
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<td>Ackerley Communications</td>
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<td>Deb Shops Inc.</td>
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<td>8741</td>
<td>Dynamics Research Corp.</td>
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<td>NMS</td>
<td>8711</td>
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</table>

Notes:

FYR = Month of the fiscal year-end.
XCHG = Security exchange the stock trades on, where NMS is the National Market System of the NASDAQ.
SIC = Firm’s Standard Industrial Classification code.
matched pairs have the same fiscal year-end; 5 of the remaining 7 firms have the same fiscal quarter-end. The offering and matched nonoffering firms are traded on the same exchange in 31 cases; the remaining 10 match an AMEX firm with a NASDAQ National Market System firm. The offering and nonoffering firms have the same two-digit SIC code in all 41 cases, and the same four-digit SIC code in 20 cases. The offering firms have an average of $123 million in assets and $84 million in market value as of the beginning of fiscal 1992, compared with $137 million in assets and $72 million in market value for the matched nonoffering firms; these differences are not statistically significant. At the beginning of fiscal 1992 the offering firms have an average of 2.2 analysts and the nonoffering firms have an average of 1.6 analysts; the difference is not statistically significant. On average, the offering firms receive 31.7 percent of their 1992 beginning market value in proceeds from the equity offering.

As shown later, there is no significant difference between the offering and nonoffering firms’ overall disclosure frequency or degree of optimism in their statements one year prior to the registration of the offering. As a consequence, it appears that our selection criteria result in matched pairs of offering and nonoffering firms with a similar information environment one year prior to the offering.

The disclosure data

We collected all available public disclosures by the offering and nonoffering firms from 18 months before to 18 months after the registration date of the offering. To identify public disclosures by or about each firm, we searched the Dow Jones News Retrieval and then LEXIS/NEXIS for both the company name and the company ticker symbol. These two data sources cover 21 news and wire services. We adapted our search for seven firms that changed their name or ticker symbol during the sample period.

By far the most common type of disclosure is a company press release sent out to many wire services simultaneously. Some wire services, such as PR Newswire, then transmit the press release verbatim, while others, such as the Dow Jones News Wire, transmit edited versions of the press release. Consequently, the same underlying disclosure generated multiple documents in our initial search. We sorted the documents chronologically and eliminated all redundant disclosures, keeping only the most extensive version in our data base, generally the initial press release. Of the disclosure events, 13 percent were authored by a noncompany source, typically a business reporter. We included these in the disclosure data base because they were frequently initiated by a company contact. Also, the articles frequently included quotes of company officials. The resulting disclosure data base consisted of 3,257 unique disclosure documents, averaging 13.2 per firm-year, with 11.5 authored by the company and 1.7 authored by an outside source.

The contents of each disclosure document were then coded according to the type of statement and the tone of the statement. Our coding procedure was adapted from Francis, Philbrick, and Schipper 1994, who study disclosures around the time of large earnings declines. The first three types of statements relate to the financial performance of the firm.
1. *Quarterly earnings announcements* include a preliminary or formal announcement, and may include brief financial statements.

2. *Nonquarterly but earnings-related announcements* include, for example, monthly sales reports.

3. *Nonfinancial announcements* will affect earnings in the near future. Examples are new product or contract announcements, and reports on volume, order backlog, litigation, and regulatory action.

The next two categories capture the spin, if any, put on items 1–3.

4. *Significant additional detail* regarding statements 1–3. For example, same-store sales, or the performance of particular divisions. Including financial statements with item 1, without interpretation, does not qualify as item 4.

5. *A managerial quote* expanding on the results reported in statements 1–3.

There are three categories of forward-looking statements.

6. *Short-term forecasts of financial results* may be quantitative or qualitative, but they must be forward-looking.

7. *Short-term forecasts of nonfinancial data* are, most frequently, forward-looking statements about future volume.

8. *Long-term forecasts* of earnings or nonfinancial data are forecast more than a year into the future.

An example that includes a nonfinancial announcement with significant detail, a managerial quote, and a short-term forecast is the following press release of the Michael Baker Corporation:

Funded backlog was $296.3 million at the end of the second quarter, compared to $130.3 million a year ago. Total backlog, which includes the option portion of contracts, was $490.5 million, compared to $322.4 million a year ago. Thomas said the company’s three operating groups were profitable in the second quarter and for the first six months of the year. “The Engineering Group, in particular, had a strong second quarter and continues to have an outstanding year,” he said. “The Construction Group showed improved results thanks to its strong performance on existing contracts, and the Operations and Maintenance Group continues to perform well.” Thomas said the company expects to report further growth the rest of the year.

The remaining categories of disclosure are

9. *Current investing or financing transactions*, other than equity transactions — for example, a capital expansion or debt retirement. Also included here are corporate structure changes.

10. An announcement of the *public offering* that caused the firm to be in the offering sample.
11. Stock-related information, such as dividend announcements, stock splits, and recommendations on the stock by noncompany sources.
12. Other equity transactions beyond the public offering that, by construction, can be made only by the offering firms.
13. Personnel and management changes, which include promotion announcements, retirements, and new hiring.
14. Changes in the reporting regime, examples of which include implementing monthly sales reporting, a change in accounting principles, or listing on the New York Stock Exchange.
15. Awards won and charitable contributions made.

For parsimony, when presenting our results we frequently group different categories of statements together, such as the “performance” items, 1–3; the “management spin” items, 4–5; and the “forward-looking” items, 6–8. By construction, only the offering firms can make statements in categories 10 and 12, so we excluded these two categories from all our tests. We group the remaining categories (9, 11, 13–15) together under the heading “other”.

As well as sorting statements into 1 of the 15 categories given above, we classified each statement as pessimistic, neutral, or optimistic, which was a more subjective process than simply classifying the type of statement. Frequently the headline of the press release was a good indicator of the tone of the statements it contained. The default tone is neutral, so only statements that were clearly optimistic or pessimistic were coded as such. For example, a forward-looking statement that was “cautiously optimistic” was classified as neutral. Although the coding of the type and tone of statements in disclosures was undoubtedly imprecise, the same procedure was used for both the offering firms and the matched nonoffering firms.16

For the whole sample there are 6,210 statements, averaging 1.9 statements per disclosure document and 25.2 statements per firm-year. A disclosure document contains only 1 statement 53 percent of the time, 2 statements 23 percent of the time, 3 statements 12 percent of the time, and 4 or more statements 12 percent of the time. Table 2 gives the frequency of the different statement types and tones for the entire sample.

The most common types of disclosure statements are earnings announcements and announcements of nonfinancial but earnings-related events, such as new product announcements; combined, these two items represent 30.3 percent and 35.3 percent of all statements made for the offering and nonoffering firms, respectively, or about 8.6 and 7.7 statements per firm-year, respectively. There are almost as many statements adding significant detail and managerial emphasis to the performance results, combining for 24.6 percent and 27.2 percent of the disclosure statements of the offering and nonoffering firms, respectively, or 7.0 and 6.0 statements per firm-year, respectively. Forward-looking disclosures (items 6, 7, and 8) collectively make up only 12.9 percent and 10.5 percent of the offering and nonoffering firms’ statements, respectively. The remaining categories of disclosure combine for 27.9 percent and 24.7 percent of the offering and nonoffering firms’ statements, respectively, with investing/financing statements and stock-related statements being the most common.
<table>
<thead>
<tr>
<th>Type of statement</th>
<th>Tone of statement</th>
<th>Per firm-year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Quarterly earnings announcement</td>
<td>Pessimistic 406 6.54</td>
<td>985 4.00</td>
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<tr>
<td></td>
<td>Neutral 27 0.43</td>
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<tr>
<td></td>
<td>Optimistic 552 8.89</td>
<td></td>
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<tr>
<td>2. Nonquarterly/earnings-related</td>
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<tr>
<td></td>
<td>Optimistic 78 1.26</td>
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<tr>
<td>3. Nonfinancial (e.g., new products)</td>
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<tr>
<td></td>
<td>Neutral 505 5.05</td>
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<tr>
<td>4. Significant additional detail</td>
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<td>820 3.33</td>
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<td></td>
<td>Neutral 235 3.78</td>
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<tr>
<td></td>
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<td>5. Managerial quote/emphasis</td>
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<td>Neutral 220 3.54</td>
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<td>6. Short-term forecast of earnings</td>
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<td>7. Short-term forecast of nonfinancial data</td>
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<td>8. Long-term forecast</td>
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<td>9. Investing/financing transactions</td>
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<td>Neutral 291 4.69</td>
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<td>10. The public offering</td>
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<td>15. Awards/charities</td>
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<td>Neutral 27 0.43</td>
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<td>Optimistic 25</td>
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<td>Total</td>
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</tr>
<tr>
<td></td>
<td>Optimistic 2,829</td>
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</table>

Note:
Entire sample of 82 firms over three years. Top entry in a cell is the count, and bottom entry is the percent of the total.
Not surprisingly, the overall tone of disclosure statements is optimistic, as seen at the bottom of Table 2. Over 45 percent of the firms' statements are optimistic, compared with only 17 percent that are pessimistic. The tone of the performance statements (items 1–3) is determined either by the benchmark used in the disclosure itself or, absent such a benchmark for item 1, by comparison with the quarterly earnings from the previous year. For nonfinancial statements (item 3), new contracts or new products are toned as optimistic only if significant detail is given indicating optimism. As seen in Table 2, each of the performance categories is skewed toward optimistic statements; as shown later, this is particularly true for the offering subsample of firms. Additional detail and managerial emphasis (items 4–5) are heavily skewed toward optimistic statements. The tone of the remaining categories (items 9–15) is most frequently neutral.

4. Disclosure activities

In this section we examine how the offering firms change their disclosure activities, relative to the nonoffering firms, prior to registering the offering with the SEC. Realizing that our evidence can only be circumstantial, we also attempt to infer the firm's intent behind the increase in disclosure activity. Our hypothesis in this section is that offering firms will increase disclosure activity prior to the equity offering in an attempt to lower the cost of equity capital, subject to the constraint of the gun-jumping regulations.

As a summary measure, Figure 1 presents the difference between the offering and nonoffering firms' overall disclosure frequency and the mix of optimistic, neutral, and pessimistic disclosures over six 6-month periods extending from 18 months before to 18 months after the registration date.

In the period immediately prior to the offering, the frequency of optimistic statements increases dramatically and the frequency of pessimistic statements falls slightly. The relative frequency of optimistic statements increases by 4.4 over the prior year and the relative frequency of pessimistic statements falls by 0.71 over the prior year, both of which are significant at less than the 0.10 level. After the offering, the mix of tones becomes decidedly more neutral: the relative frequency of pessimistic and neutral statements increases, while the relative frequency of optimistic statements declines.

As noted in the previous section, there is no significant difference between the offering and nonoffering firms' overall frequency of disclosure statements made during the first two six-month intervals. Similarly, the mix of statement tones by the two sets of firms is very similar during this time period. The offering firms make slightly more optimistic and neutral statements and slightly fewer pessimistic statements, but the differences are not significant. At this point in time the offering firms are indistinguishable from their nonoffering matches. But as Figure 1 shows, the offering firms begin to make more frequent and more optimistic disclosure statements as they approach the registration date.

The most complete measure of a firm's disclosure activity in a given category would be the frequency of each of the three tones of disclosure: optimistic, neutral, and pessimistic. However, this includes some redundancy because the decrease in
pessimistic disclosures seen in Figure 1 is probably caused by the increase in optimistic disclosures. For this reason, our measure of disclosure activity in the analysis that follows is the frequency of neutral and optimistic disclosures combined. We combine these two categories for parsimony and because, as a practical matter, the distinction between them in our coding scheme is subjective. As an empirical matter, the frequency of neutral statements made during the 18 months prior to registration is significantly positively correlated with stock returns over the same period, as is the frequency of optimistic statements, while the frequency of pessimistic statements is negatively correlated with stock returns over the same period. All the results presented are similar if we include pessimistic statements in our disclosure measure.

A potential concern regarding the preceding figure is that previous empirical research has shown that firms with better performance disclose more frequently (see Lang and Lundholm 1993 and the references therein). Therefore, it is possible that changes in the frequency of the offering firms’ disclosures may be due to their superior concurrent performance or future prospects, and not because they anticipated offering stock to the public. To control for the effect of performance we estimate the following regression:

\[
\text{Change in disclosure frequency} = \alpha + \beta_1 \times \text{pre-offering earnings} + \beta_2 \times \text{post-offering earnings} + \epsilon.
\]

All variables are measured as the difference between the offering and nonoffering firms. The intercept captures the average change in disclosure after controlling for
earnings performance both before and after the offering. The change in disclosure frequency is based on the change in the difference in disclosure frequency between the offering and nonoffering firms during the six months prior to the first announcement of the offering and the previous six months. Pre-offering earnings are measured over the two quarters preceding the offering announcement, and post-offering earnings over the two years following the announcement, both deflated by share price at the beginning of the pre-offering period.

The results in Table 3 confirm what is illustrated in Figure 1.

After controlling for current and future performance, the increase in the frequency of disclosure is 4.86 statements with a p-value of 0.00. The offering firms significantly increased their disclosure activity relative to the change in nonoffering firms’ disclosures, even after controlling for any increase that might be caused by improved financial performance, either concurrently or in the following two years. An examination of the specific categories of disclosure in Table 3 shows that the increase in disclosure frequency is spread across a variety of categories. The three performance categories combined increase by 1.29 statements, which is significant at the 0.02 level, with the largest increase coming from nonfinancial statements (item 3). This is a highly discretionary category of disclosure and, as such, is consistent with managers who voluntarily increase their disclosure activity prior to the equity offering.

Disclosure in the management spin categories (items 4 and 5) also increases significantly. The results for management spin are particularly interesting because the decision to expand on the performance results is very discretionary. The offering firms increase the amount of additional detail they provide about their performance disclosures (item 4) by 0.61 statements and increase the frequency of managerial interpretations of the results by 0.87 statements; both are significant at the 0.02 level. The two categories of management spin combined increase by 1.48 disclosures per firm, with a p-value of 0.00.

Table 3 shows that the only category that does not increase significantly in frequency during the six months preceding the offering announcement is forward-looking statements (items 6–8): the coefficient for the three categories combined is 0.02 and insignificant. The lack of a significant increase in the relative frequency of forward-looking information is consistent with Frankel, McNichols, and Wilson 1995, who find no increase in the frequency of management earnings forecasts prior to a public offering. However, our results indicate that it would be wrong to conclude that disclosure in general does not increase prior to the offering; all the other disclosure categories increase. Earnings forecasts probably do not increase significantly because the SEC expressly discourages forecasts prior to registering an offering. Combined with the significant increase in the frequency of positive management spin disclosures, this suggests that firms may be walking a fine line between making explicit forecasts and simply presenting “factual business and financial developments”, as allowed in the gun-jumping regulations.

All the remaining categories of disclosure in Table 3 increase significantly. Of particular note is the increase in investing/financing disclosures (item 9) and stock-related disclosures (item 11), which may reflect a combination of increased
TABLE 3  
Average change in offering firms’ disclosure frequency between the six months prior to the announcement of the offering and the preceding six months, relative to nonoffering firms

<table>
<thead>
<tr>
<th></th>
<th>Mean change</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>All statements</td>
<td>+4.86</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Performance statements

1. Quarterly earnings +0.35 0.04
2. Other earnings +0.17 0.18
3. Nonfinancial +0.77 0.10
   Items 1–3 combined +1.29 0.02

Management spin statements

4. Additional detail +0.61 0.02
5. Managerial quote +0.87 0.02
   Items 4 and 5 combined +1.48 0.00

Forward-looking statements

6. Short-term forecast, financial +0.10 0.38
7. Short-term forecast, nonfinancial +0.07 0.32
8. Long-term forecast −0.15 0.16
   Items 6–8 combined +0.02 0.48

Other statements

9. Investing/financing +0.62 0.08
11. Stock-related +0.68 0.01
13–15. Other +0.76 0.03
   Items 9, 11, and 13–15 combined +2.06 0.00

Notes:

Average change in disclosure frequency after controlling for earnings is computed as the intercept from the following regression:

\[
\text{Change in disclosure frequency} = \alpha + \beta_1 \times \text{pre-offering earnings} + \beta_2 \times \text{post-offering earnings} + \epsilon.
\]

The change in disclosure frequency is computed as the difference between the disclosure frequency six months prior to the first announcement of the offering and the previous six-month period. Pre-offering and post-offering earnings are earnings over the two quarters prior to the announcement date and over the two years following the announcement, respectively. Disclosure frequency, pre-offering earnings, and post-offering earnings are each differenced relative to the comparable quantity for the matched nonoffering firm. The p-values are for one-tailed tests, each with 41 observations.
disclosure and increased underlying economic activity, such as new investment opportunity. As an additional control for the firm’s underlying economic performance, we include the frequency of item 9 and item 11 in the previous regressions as control variables. The results (not reported) remain significant.\textsuperscript{22}

The preceding evidence shows that disclosure increases prior to equity offerings, particularly for those categories of disclosure that are most discretionary, even after controlling for the firms’ current and future earnings and their disclosures concerning investing/financing activities. To further examine the hypothesis that the increased disclosure is an attempt to raise the firm’s stock price, we ask whether the disclosure is highest for firms with the greatest incentives to raise the stock price. While management is likely to benefit from an increased share price generally, incentives to increase the proceeds from the offering are particularly strong when a significant stockholder is also selling shares as part of the offering. To examine this possibility, we compare the 23 offerings in which secondary shareholders either initially registered or actually sold stock as part of the offering (two initial registrants withdrew their secondary shares and two joined the offering after the initial registration) with the 18 cases in which they did not. In 15 cases the selling shareholders were also corporate insiders, providing a particularly strong incentive to influence the offering price.

Given the small number of observations and resulting large standard errors, it is difficult to achieve statistical significance, and the results should be viewed only as suggestive. Results (not tabulated) indicate an increase in each of the four categories of disclosure, although the difference is statistically reliable only for earnings forecasts ($p$-value of 0.02). Overall, the change in disclosure is higher by 2.44 disclosures for firms with selling shareholders. Comparing these results with those in Table 3 indicates that the increase in disclosure is more than 50 percent higher for firms with selling shareholders. The result for forecasts is also striking because this is the category for which the securities law is most explicit.\textsuperscript{23} One interpretation is that management is more aggressive when insiders’ interests are at stake.

**Endogeneity**

A potential concern with the preceding analysis, and with the stock return analysis that follows, is the possibility that the decision to issue equity, the decision to increase disclosure, and the stock price increase prior to the equity-issuance announcement are all driven by a fourth factor, a positive net present value project that becomes available to the firm. Ideally, we would like to explicitly control for the company’s investment opportunity set, but this is difficult to observe. Therefore, our analysis attempts to rule out this potential omitted variable as an alternative explanation in a number of different ways. First, if such a project exists, it should be manifested in current or future earnings. However, as noted above, the relationship between disclosure and equity is robust to including current and future earnings. Therefore, unless the net present value project is not reflected in earnings for at least two years, it does not appear that the change in disclosure is driven by expected profitability. Adding the increase in the disclosure of investing/financing activities to the regressions in Table 3 does not alter their results; therefore, the offering firms’ disclosures
about their investment opportunities are not driving the increases in other disclosure categories. Further, the facts that disclosure increases (1) occur in the categories over which management has the most control and (2) are most pronounced for firms with selling shareholders would not be predicted if the disclosure increase simply reflects new investment opportunities. Finally, if the increase in stock price prior to the offering is caused by an expanded investment opportunity set, then the stock returns subsequent to the equity offering announcement should not be related to the prior increase in disclosure. Instead, we find a negative relationship between this disclosure activity and subsequent returns (as discussed later).

To provide further evidence of this possibility, we investigate whether a firm's disclosure behavior prior to announcing its equity offering identifies the firm as a future "offering" firm, after controlling for the share price increase. Although it is possible that current and future earnings might not capture the positive net present value projects, if the information is made public by some means, stock returns should capture them. In Table 4 we report results from logistic regressions of whether the firm is in the offering or nonoffering subsample on the firms' stock returns in the six months prior to the offering announcement, and on their disclosure frequency during the same period. Note that, to the extent that disclosure activity prior to the offering announcement is causing positive stock returns over the same period, this test is biased against finding an incremental disclosure effect.24

Not surprisingly, the results in Table 4 show that the pre-announcement stock return is significantly related to the probability that the firm is in the offering subsample. However, more importantly, after controlling for stock returns, the frequency of disclosure statements is significantly related to the probability of issuing stock, with a p-value of 0.01. A hypothetical "average" firm (one with all independent variables at the mean value) with one more disclosure is 4 percent more likely to be an offering firm.25 Examining the different subcategories of disclosure shows that each is positively related to the probability that the firm will issue equity, with the strongest results in the management spin category (items 4 and 5). A firm with one more management spin statement is 9 percent more likely to be an offering firm. In comparison, a firm with a 5 percent higher stock return is 4 percent more likely to be an offering firm.

Although we cannot unambiguously establish the offering firms' motives for increasing their disclosure activity prior to announcing the offering, the combined evidence suggests that they may be in anticipation of the offering. Given the endogeneity in the disclosure choices, the offering choice, and the stock returns, a simultaneous system of equations might appear to be the appropriate statistical design. However, that approach would likely introduce more inconsistency in the estimates than does simultaneity. A simultaneous-equations approach requires us to identify determinants of each of the three choice variables with significant explanatory power, but that are exogenous to the other two variables. If the variables either are not exogenous or have low explanatory power, a simultaneous-equations approach will introduce more inconsistency than it eliminates (see Bound, Jaeger, and Baker 1993). Given the matching criteria, cross-sectional variation in variables likely to be correlated with only disclosure has been intentionally minimized.
TABLE 4
Logistic regressions of an offering/nonoffering firm indicator variable on disclosure frequency and pre-announcement returns

<table>
<thead>
<tr>
<th>Disclosure category</th>
<th>Disclosure frequency</th>
<th>Return</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coefficient</td>
<td>p-value</td>
</tr>
<tr>
<td>All statements</td>
<td>0.15</td>
<td>0.01</td>
</tr>
<tr>
<td>Performance (items 1–3)</td>
<td>0.26</td>
<td>0.02</td>
</tr>
<tr>
<td>Management spin (items 4–5)</td>
<td>0.36</td>
<td>0.01</td>
</tr>
<tr>
<td>Forward-looking (items 6–8)</td>
<td>0.16</td>
<td>0.17</td>
</tr>
<tr>
<td>Other (items 9, 11, 13–15)</td>
<td>0.24</td>
<td>0.05</td>
</tr>
</tbody>
</table>

Notes:
The estimated probability that the firm is an offering firm is given by $e^\beta / (1 + e^\beta)$ where

$$P = \alpha + \beta_1 \times \text{disclosure frequency} + \beta_2 \times \text{return} + \varepsilon.$$

The dependent variable is 1 for an offering firm and 0 for a nonoffering firm. The pre-announcement return is the continuously compounded return for six months prior to the first announcement of the offering firm’s intent to issue equity (trading days −130 to −3). Disclosure frequency is computed over the six months immediately prior to the announcement date. The p-values are from one-tailed tests, each with 82 observations.

(other than performance, which is explicitly controlled for in the tests). It is particularly difficult to think of exogenous variables for stock returns that will not be correlated with disclosure as well, given that industry and size are controlled through the matching process. Combining weak exogenous variables with our small sample size would result in a test with little power and a questionable specification.

5. The relationship between disclosure and stock price

As documented in prior research, the announcement of an equity offering is typically preceded by a significant increase in price. The offering firms’ returns are 43 percent higher than the nonoffering firms’ returns during the six months prior to the first announcement of the equity offering.26 Also consistent with earlier literature, the offering firms have a significant negative price reaction to the announcement of the intent to issue stock, relative to the nonoffering firms. In the five days surrounding the announcement, the mean difference in returns is −4.6 percent, which is significantly different from zero at the 0.01 level.27 In the 18 months after the announcement, the difference in returns is not significantly different from zero, although there is some evidence during the final 6 months that the offering firms underperform their nonoffering counterparts, consistent with Spiess and Affleck-Graves 1995 and Loughran and Ritter 1995.

The previous section documented a significant increase in disclosure frequency prior to the registration of the offering. In the three sets of tests that follow
we examine the cross-sectional relationship between disclosure activity prior to the equity offering and stock returns before, at, and after the announcement of the offering.

**Returns prior to the announcement**

To assess the association between the offering firms’ pre-announcement stock returns and their disclosure activity we estimate the following regression:

\[
\text{Pre-announcement return} = \alpha + \beta_1 \times \text{disclosure frequency} + \beta_2 \times \text{pre-offering earnings} + \beta_3 \times \text{post-offering earnings} + \varepsilon.
\]

To control for potential industry and size effects and for consistency with the disclosure analysis, all variables are measured relative to the nonoffering firms. The pre-announcement return is the continuously compounded return over the window from six months prior to the announcement of the equity offering to three days prior to the announcement (trading days -130 to -3). Independent variables include the frequency of disclosure and controls for earnings during the two quarters prior to the offering announcement and during the two years following the announcement, each deflated by price at the beginning of the pre-announcement return window. Results are presented in Table 5.

Overall, the coefficient on disclosure frequency (\(\beta_1\)) is positive and significant; firms with more disclosure statements experience greater returns, even after controlling for current and future earnings performance. Holding earnings performance constant, the model indicates that a firm with one more neutral or optimistic disclosure statement experiences on average a 1.6 percent higher stock return. Although one cannot draw a causal link based solely on the pre-announcement returns, the results are consistent with a positive association between the intensity of the communications with the market prior to the stock offering and stock price. Further, the robustness of results to inclusion of earnings controls suggests that the pre-announcement run-up is not simply due to higher current or near-term future earnings performance. Finally, the results (not presented) are very similar if the frequency of investing/financing transactions (item 9) is included as an additional control variable.

Examining the various categories of disclosure reveals that, after controlling for earnings performance, the frequency of disclosure always has a positive relation with the stock return and is significant for all categories of statements. Additional analysis (not tabulated) indicates that the significantly positive coefficient for performance characteristics (items 1–3) is driven primarily by nonfinancial performance statements, which is the category of performance disclosure over which management exercises the most discretion. Management also has considerable discretion over the spin put on performance statements (items 4 and 5), which is also a significant category.

The frequency of forward-looking statements (items 6–8) is also significantly positively related to stock returns, driven primarily by short-term forecasts. Forward-looking statements have the largest coefficient estimate of any category, indicating
<table>
<thead>
<tr>
<th>Disclosure category</th>
<th>Disclosure frequency</th>
<th>Pre-offering earnings</th>
<th>Post-offering earnings</th>
<th>Adjusted R²</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coefficient</td>
<td>p-value</td>
<td>Coefficient</td>
<td>p-value</td>
</tr>
<tr>
<td>All statements</td>
<td>0.016</td>
<td>0.00</td>
<td>1.31</td>
<td>0.00</td>
</tr>
<tr>
<td>Performance (items 1–3)</td>
<td>0.025</td>
<td>0.07</td>
<td>1.18</td>
<td>0.00</td>
</tr>
<tr>
<td>Management spin (items 4–5)</td>
<td>0.040</td>
<td>0.02</td>
<td>1.24</td>
<td>0.00</td>
</tr>
<tr>
<td>Forward-looking (items 6–8)</td>
<td>0.054</td>
<td>0.00</td>
<td>1.15</td>
<td>0.00</td>
</tr>
<tr>
<td>Other (items 9, 11, 13–15)</td>
<td>0.025</td>
<td>0.05</td>
<td>1.25</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Notes:

Reported coefficients are $\beta_i$s from the following regression:

$$\text{Pre-announcement return} = \alpha + \beta_1 \times \text{disclosure frequency} + \beta_2 \times \text{pre-offering earnings} + \beta_3 \times \text{post-offering earnings} + \epsilon.$$  

The dependent variable is the difference between the offering and nonoffering firms’ continuously compounded returns from day $-130$ to day $-3$ relative to the first announcement of the intent to issue equity. Disclosure frequency is computed over the six months immediately prior to the announcement date, and pre-offering and post-offering earnings are earnings over the two quarters prior to the announcement and two years following the announcement, respectively. Each independent variable is computed as the difference between the offering and matched nonoffering firm value. The $p$-values are from one-tailed tests, each with 41 observations.
that a firm with one more forward-looking statement has a 5.4 percent higher stock return. Thus, while the frequency of forecasts does not increase prior to the offering announcement, firms that provide a higher (and constant) frequency have greater stock returns, suggesting that firms may be tempted to increase the use of forecasts before issuing equity absent the gun-jumping regulations.32

**Returns at the announcement**

As noted earlier, the average price reaction at the announcement of the intent to issue equity is negative and comparable in magnitude to the results from prior studies (see Smith 1986). This result is typically attributed to the information asymmetry between the firm and the market concerning the value of the firm's activities. Absent any credible communication between the firm and potential new investors, adverse selection will cause the price of newly issued equity to fall below the existing price level prior to the issue (see Myers and Majluf 1984). If the firm can reduce the information asymmetry by credibly communicating with the market, the reaction to the announcement should be less severe. However, an alternative possibility is that the firm has artificially increased its price with heightened disclosure activity in anticipation of the equity issue (i.e., it hyped the stock). In this case, upon learning that the firm intends to issue equity, the market might become skeptical about the motives behind the previous disclosure increase and react more negatively at the announcement.

To investigate these possibilities, we estimate the following regression:

\[
\text{Announcement return} = \alpha + \beta_1 \times \text{disclosure frequency} + \beta_2 \times \text{change in disclosure frequency} + \epsilon
\]

where the announcement return is measured over days $-2$ to $+2$ surrounding the offering announcement, the disclosure frequency is measured during the six months prior to the announcement (as in Table 5), and the change in disclosure frequency is relative to the preceding six months (as in Table 3). As before, all measures are relative to the matched nonoffering firms to control for potential contaminating factors affecting industry-wide returns. The disclosure frequency measures the ability of disclosure to reduce information asymmetry; regardless of how the firm arrived at its level of disclosure, greater disclosure should represent less information asymmetry. After controlling for the level of disclosure, the change in disclosure frequency measures the firm's hype; how the firm arrived at its level of disclosure is potentially related to the amount of disclosure it produced with the intention of increasing its stock price prior to the offering. Both disclosure variables are based on time periods strictly prior to the announcement return window. The resulting regression estimates are presented in Table 6.33

As seen in Table 6, there is a significantly positive relation between the frequency of all disclosure statements made during the previous six months and the announcement-period return, and a significantly negative relation between the change in the frequency of disclosure statements and the announcement-period return. That is, after controlling for the change in disclosure frequency, the price drop
TABLE 6
Regressions of announcement-period returns on the level and change in disclosure frequency prior to the announcement

<table>
<thead>
<tr>
<th>Disclosure category</th>
<th>Disclosure frequency</th>
<th>Change in disclosure frequency</th>
<th>Adjusted $R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coefficient</td>
<td>$p$-value</td>
<td>Coefficient</td>
</tr>
<tr>
<td>All statements</td>
<td>0.004</td>
<td>0.03</td>
<td>-0.005</td>
</tr>
<tr>
<td>Performance (items 1–3)</td>
<td>0.008</td>
<td>0.07</td>
<td>-0.008</td>
</tr>
<tr>
<td>Management spin (items 4–5)</td>
<td>0.009</td>
<td>0.06</td>
<td>-0.013</td>
</tr>
<tr>
<td>Forward-looking (items 6–8)</td>
<td>0.008</td>
<td>0.22</td>
<td>-0.006</td>
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<tr>
<td>Other (items 9, 11, 13–15)</td>
<td>0.003</td>
<td>0.32</td>
<td>-0.007</td>
</tr>
</tbody>
</table>

Notes:
Reported coefficients are $\beta_i$s from the following regression:

$$\text{Announcement return} = \alpha + \beta_1 \times \text{disclosure frequency} + \beta_2 \times \text{change in disclosure frequency} + \epsilon.$$ 

The dependent variable is the difference between the offering and nonoffering firms’ continuously compounded returns from day −2 to day +2 relative to the first announcement of the intent to issue equity. Each independent variable is computed as the difference between the offering and nonoffering firms’ disclosure frequencies. Disclosure frequency is computed over the six months immediately prior to the announcement date, and the change in disclosure frequency is computed relative to the preceding six-month period. The $p$-values are from one-tailed tests, each with 41 observations.

at the announcement is less severe for firms that produce more frequent disclosures prior to the announcement. However, after controlling for the level of disclosure frequency, the price drop is more severe for firms that achieve their disclosure level by simply increasing their disclosures in the six months prior to the announcement. One interpretation is that an increase in disclosure may be seen as hyping the stock rather than further reducing the information asymmetry prior to the offering. The market rewards firms that have higher disclosure frequencies, possibly because information asymmetry is reduced, but at the same time it penalizes firms that increase their disclosure frequency with the subsequently revealed intent of issuing equity in the future. Moreover, the coefficient on the disclosure change is greater in absolute value than the coefficient on the disclosure level, suggesting that a change in the frequency of disclosure in the last six months prior to the announcement has a net negative effect on the announcement period return — the market penalty for increasing the disclosure frequency just prior to an equity offering exceeds the market reward for having a higher disclosure frequency.\(^{34}\) However, the stock price drop is less than the run-up in the pre-announcement period, allowing for the possibility that the effect of increased disclosure in the pre-announcement period was not totally undone at the announcement, an issue that we consider in the next section.
The negative reaction to an increase in disclosure activity calls into question the standard view of voluntary disclosures as a credible communication mechanism. If all disclosures were credible, then a disclosure increase immediately before the equity offering announcement should have no less veracity simply because it is a change from the previous period’s disclosure frequency.

The results for the performance statements (items 1–3), management spin statements (items 4–5), forward-looking disclosure (items 6–8), and other statements (items 9, 11, 13–15) show a similar pattern. The coefficient on the frequency of disclosures is positive, and the coefficient on the change in the frequency of disclosures is negative. The results are strongest for the management spin statements. They indicate that a firm with one more disclosure has a 0.9 percent higher stock return at the announcement. If the firm added this extra disclosure statement during the six months prior to the announcement, then the positive influence on the stock return is more than offset by the 1.3 percent lower stock return due to increasing the frequency of disclosure.35

Previous research in finance has attempted to explain the cross-sectional variation in the announcement-period return, with only limited success. Masulis and Korwar (1986) find that the announcement-period return is positively related to the previous 60-day market return, negatively related to the previous 60-day firm return, and significantly lower for offerings in which management sells shares. They find limited evidence that the return is positively related to the dilution of the offering, although Mikkelsen and Partch (1986) find no such relationship, and positively related to the change in leverage. Mikkelson and Partch also find that the announcement-period return is significantly higher for firms that state that the offering proceeds will be used for capital expenditures, although Masulis and Korwar find no significant difference in returns based on the stated use of the capital. Perhaps closest to our study, Korajczyk, Lucas, and McDonald (1991) find that the return at the offering announcement decreases as the amount of time since the last earnings announcement increases. They argue that the longer a firm waits after the earnings announcement before announcing its intent to offer stock, the greater the information asymmetry at the offering announcement date and the lower its return. After controlling for the change in the disclosure frequency, the positive relation we observe between the frequency of disclosure and the announcement-period return is consistent with this argument.

As a specification check we include all the significant variables from the previously discussed studies in the Table 6 regressions to verify that our disclosure measures are not simply proxies for these other variables. In particular, we include the number of days between the first offering announcement and the last earnings announcement, a variable indicating that the stated use of funds was for capital expenditures, a variable indicating that management was selling shares, the percentage of dilution, the stock return from −60 to −3 days relative to the offering announcement, market-to-book ratio, and price-earnings ratio. We find that none of these variables is significant, and the significance of the disclosure variables remains very similar to what is reported in Table 6.36
Returns after the announcement

An issue with the preceding results is whether the announcement-period reaction is complete. A complete market reaction would completely correct for any pre-announcement hype, and the managers' efforts to lower the cost of capital would be ineffective. Previous research shows that returns subsequent to a public offering are generally negative (Loughran and Ritter 1995), and that cross-sectional variation in subsequent stock price movements is predictable based on the behavior of discretionary accruals (Teoh, Welch, and Wong 1998; Rangan 1998) and affiliated analysts (Dechow, Hutton, and Sloan 1999; Michaely and Womack 1996; Dunbar, Hwang, and Shastri 1997). In the next set of tests we examine whether the pre-announcement disclosure activity can also explain post-announcement price movements.

We estimate the following regression:

\[
\text{Post-announcement return} = \alpha + \beta_1 \times \text{disclosure frequency} + \beta_2 \times \text{change in disclosure frequency} + \epsilon
\]

where the post-announcement return is measured over the 18 months following the announcement (trading days +3 to +390). As before, all variables are computed relative to the matched nonoffering firm. There are, on average, 33 days between the announcement of the offering and the actual sale of stock. We investigate whether there is any significant price correction or association with the pre-announcement disclosure activity in this subperiod. We find no significant effects, so for convenience we report results for the entire post-announcement period rather than divide it into periods before and after the actual offering date.

As Table 7 shows, the results in the post-announcement period are very similar to the results in the announcement period.\textsuperscript{37} For all disclosure statements combined, the post-announcement returns are significantly increasing in the frequency of disclosure prior to the announcement and significantly decreasing in the change in disclosure frequency prior to the announcement.\textsuperscript{38} Thus, the market reaction at the announcement of the offering appears to have been incomplete. Even though the announcement-period reaction was most severe for firms that hyped their stock by increasing their disclosure frequency, the post-announcement return is still decreasing in this variable. In other words, the hype in the pre-announcement period appears to have been successful; the share price remained elevated even after the announcement of the offering, thereby increasing the proceeds of the offering. The post-announcement returns also suggest that the pre-announcement price was too high for firms that increased their disclosure frequency prior to the offering, providing further evidence that the increase in disclosure may indeed have been hype.\textsuperscript{39} The pattern is similar for all categories of disclosure except forward-looking statements.\textsuperscript{40}

To graphically summarize the results in Tables 5 through 7, we divide the offering firms into two groups labeled the "stock price hypers" and the "consistent disclosers", and plot their returns in Figure 2 over the three periods around the announcement. For each decile of overall disclosure frequency during the six months prior to the offering announcement we sort the two firms with the highest
TABLE 7
Regressions of post-announcement returns on the level and change in disclosure frequency prior to the announcement

<table>
<thead>
<tr>
<th>Disclosure category</th>
<th>Disclosure frequency Coefficient</th>
<th>Disclosure frequency p-value</th>
<th>Change in disclosure frequency Coefficient</th>
<th>Change in disclosure frequency p-value</th>
<th>Adjusted $R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>All statements</td>
<td>0.028</td>
<td>0.02</td>
<td>-0.021</td>
<td>0.04</td>
<td>0.07</td>
</tr>
<tr>
<td>Performance (items 1–3)</td>
<td>0.071</td>
<td>0.01</td>
<td>-0.035</td>
<td>0.11</td>
<td>0.08</td>
</tr>
<tr>
<td>Management spin (items 4–5)</td>
<td>0.061</td>
<td>0.05</td>
<td>-0.036</td>
<td>0.05</td>
<td>0.04</td>
</tr>
<tr>
<td>Forward-looking (items 6–8)</td>
<td>0.002</td>
<td>0.49</td>
<td>0.007</td>
<td>0.45</td>
<td>-0.05</td>
</tr>
<tr>
<td>Other (items 9, 11, 13–15)</td>
<td>0.036</td>
<td>0.14</td>
<td>-0.032</td>
<td>0.12</td>
<td>-0.01</td>
</tr>
</tbody>
</table>

Notes:
Coefficient estimates are the $\beta_1$ and $\beta_2$ coefficient estimates from the following regression:

$$Post-announcement\ return = \alpha + \beta_1 \times \text{disclosure frequency} + \beta_2 \times \text{change in disclosure frequency} + \epsilon.$$  

The dependent variable is the difference between the offering and nonoffering firms’ continuously compounded returns from day +3 to day +390 relative to the announcement of the intent to issue equity. Each independent variable is computed as the difference between the offering and nonoffering firms’ disclosure frequency. Disclosure frequency is computed over the six months immediately prior to the announcement date, and the change in disclosure frequency is computed relative to the preceding six-month period. The $p$-values are from one-tailed tests, each with 41 observations.

increase in frequency into the “hypers” group and the other two firms into the “consistent disclosers” group. Thus, the two groups of firms are matched on the level of disclosure prior to the offering, but differ by how they achieved this level. As the figure shows, both types of firms enjoy a stock price increase prior to the announcement date. However, at the announcement of the upcoming offering, the hypers suffer a much larger price drop than the consistent disclosers, which continues during the 18 months after the announcement. The consistent disclosers suffer only a modest price decline at the announcement and have no significant decrease in post-announcement returns. The figure illustrates that how the firm got to its disclosure level immediately prior to the offering is important. The market penalizes firms that increase their disclosure activity with the ulterior motive of issuing stock at a later date, but the post-announcement stock returns show that the penalty is incomplete.

6. Conclusions
The evidence suggests several conclusions. First, companies significantly increase disclosure activity prior to announcing an upcoming equity offering, and it appears
Figure 2  Cumulative returns for 6 months prior to offering announcement, 5 days around announcement, and 18 months after announcement

Note:
For each decile of total disclosure frequency, the stock price hypers are the two firms with the largest increase in frequency prior to the offering announcement, and the consistent disclosers are the two firms with the smallest increase in frequency.

as though the increase is in anticipation of the future offering. The change in disclosure activity goes beyond what would be justified by the company’s improvement in current or future earnings and is larger for firms with selling shareholders. The disclosure activity successfully distinguishes between firms that later offer stock and those that do not.

The stock returns tests indicate that offering firms that disclose more experience share price increases prior to the offering announcement beyond what would be predicted based on the firms’ current and future earnings. Although some of the price increase is generally reversed when the firm announces its intent to issue equity, the market reaction at the offering announcement depends on how the firm reached its level of disclosure activity. The market appears to interpret large increases in disclosure prior to the offering announcement as hype, reacting much more negatively to firms that increased their disclosure activity prior to the announcement than to those that maintained a relatively constant disclosure level. However, the market reaction is apparently incomplete for firms with large pre-announcement increases in disclosure, as evidenced by the negative post-announcement drift in stock prices. This reinforces the conclusion that the pre-
announcement disclosures were optimistic, but also suggests that any hype may have been successful in lowering the cost of equity capital.

Taken together, our results suggest that firms change their disclosure activity prior to offerings in ways that appear to violate the spirit if not the letter of gun-jumping regulations, and that the activity may have a significant influence on the share price. While not conclusive, this suggests that the SEC’s past concern over gun-jumping may have had merit, and that the current proposal to move from a transaction-based regulatory approach to a company-based approach may merit further research.

Appendix

Disclosure law concerning an equity offering

In general, a firm is free to disclose anything it wishes, as long as the statement is believed to be true at the time the disclosure is made and has some basis in fact. However, section 5(c) of the 1933 Securities Act prohibits any “offer to sell” a new security prior to filing a registration statement with the SEC. An offer to sell has been liberally interpreted to include anything that might “contribute to conditioning the public mind or arousing public interest in the issuer” (SEC release no. 3844). When this prohibition becomes effective is not specified; rather, any disclosure that has the effect of conditioning the market, regardless of its intent and timing, is considered a violation of section 5(c). Such a violation is known as “gun-jumping”. The SEC gives an example of a prospective underwriter who arranged a series of press releases prior to the registration of the stock, in which the company’s proposed development of properties and estimates of ore reserves were given. The goal of the gun-jumping regulation is to increase reliance on the prospectus by limiting the use of other communication channels that the firm can use to influence potential investors’ perceptions of the company. For example, in the matter of Loeb, Rhoades and Co., the Second Circuit Court of Appeals stated:

One of the evils of a premature offer is its tendency to encourage the formation by the offeree of an opinion of the value of the securities before a registration statement and prospectus are filed. … Any offeree, such as the reader of a press release, is encouraged to form a premature opinion of the value without benefit of the full set of facts contained in a prospectus. [Carl Loeb, Rhoades & Co., 38 SEC 843, 1959, as quoted in Jennings and Marsh 1987].

For companies involved in seasoned equity offerings the legal environment is particularly complicated. They must not run afoul of the gun-jumping prohibitions, but they must also maintain their mandatory disclosures, and they must not violate section 10b-5 of the Securities Exchange Act by failing to update a previous disclosure than has become misleading. SEC release no. 5180 provides more specific guidance, stating that an issuer can

1. continue to advertise its products and services;
2. continue to send out periodic financial reports, proxy statements, and dividend notices;
3. continue to make announcements to the press with respect to factual business and financial developments;
4. continue to respond to unsolicited inquires from stockholders, analysts, the press, or others concerning factual matters; and
5. issue a "rule 135 notice" disclosing only the name of the issuer, the basic terms of the proposed securities, the anticipated time of the offering, the use of proceeds, and the amount of securities being offered by selling shareholders.

Generally, established disclosure policies can be maintained, but new ones should not be initiated during the offering period. In addition, the SEC explicitly states that issuers and their underwriters should not initiate forecasts, predictions, or projections related (but not limited) to revenues or income, and should avoid publishing opinions concerning the value of the stock. However, the SEC avoids drawing a bright line on other forms of disclosure, leaving the regulation deliberately vague. Finally, the gun-jumping disclosure regulations extend over a vaguely defined "quiet period" that begins when the firm first contemplates an offering, if not sooner, and continues until the sale is completed. But since intent is irrelevant, any disclosure that "conditions the market" for the upcoming offering can be construed as a gun-jumping violation, even if the firm has not yet decided to issue equity.

A recent incident illustrates the tensions inherent in the gun-jumping regulation. Prior to their proposed initial public offering, the CEO of Wired Ventures sent an e-mail to the company's 334 employees following news reports that were skeptical of the company's IPO prospects. The CEO noted that the company was "hampered in our ability to defend ourselves by the SEC's so-called 'quiet period' " and highlighted what he called the company's "great business" (Wall Street Journal 1996). Inadvertently, the message found its way to an online service and was widely disseminated. Although there was no apparent intent in the case and no allegation of fraudulent disclosure, the issue came to the SEC's attention and Wired withdrew its offering. As the Wall Street Journal article notes (at C1), companies issuing securities can't tell potential investors anything that isn't in the prospectus during the "quiet period" .... Even if an item is in the prospectus, securities lawyers warn, highlighting certain facts over others in writing during the quiet period could be frowned upon by regulators as self-touting. You start with the premise and conclusion that when you say "my company is going public" you are getting close to conditioning the market.

The SEC is authorized to seek injunctive relief for violations of section 5(c). However, the most common enforcement mechanism is for the Commission to delay the effective date of the registration (known as a "cooling off period"). Such a delay can be costly for several reasons. First, the issuers generally have plans for the money raised in the offering, which must be postponed. Further, a delay often
means costs associated with revising and resiling the prospectus. Finally, firms generally attempt to issue equity when their stock price is high. A delay may be interpreted negatively, thereby reducing the proceeds from the offering.

Endnotes

1. As discussed later, we use the term “hype” to refer to increased positive disclosure prior to the equity offering. Such disclosure need not be false; it may simply be additional self-touting of positive facts to bolster demand prior to the offering. We label this behavior hype because, as we show later, the increase in disclosure exceeds what would be predicted by current and future earnings prospects and because firms that increase their disclosure most prior to the offering have the lowest returns after the offering. It is also consistent with discussions of hype around securities offerings in the business press (e.g., Lashinsky 1999; Ewing 1999; Pulliam 1999; Scott 1999).

2. As discussed in more detail later, we use the term “optimistic” to indicate disclosure that is positive in tone and might be expected to increase share price. In our empirical analysis, disclosure is categorized as “optimistic”, “neutral”, or “pessimistic”. Empirically, the optimistic disclosure is positively correlated with stock returns, suggesting that the market on average interprets it as good news.

3. All returns are computed relative to the control firms for consistency with the disclosure analysis and to control for any differences in returns behavior driven by industry, size, or market listing. Explicit controls are included for differences in earnings performance and risk.

4. This is also consistent with business press assertions that firms increase disclosure around offerings to temporarily boost share price and increase the proceeds from the offerings (e.g., Lashinsky 1999; Kwon 1999; Ewing 1999).

5. The current proposal would essentially eliminate filing and disclosure requirements around equity offerings for larger, seasoned firms and significantly reduce requirements for smaller, seasoned firms like those in our sample.

6. Also related is research on bias in affiliated analyst forecasts around equity offerings (e.g., Lin and McNichols 1998; Dechow, Hutton, and Sloan 1999; Dugar and Nathan 1995). Because of their small size, the firms in our sample have a very limited analyst following (less than two on average), and many are not followed by any analysts.

7. Anecdotal evidence from investor relations professionals and discussions in the business press confirm that firms often substantially increase disclosure prior to equity offerings to temporarily enhance stock price and, hence, offering proceeds. Another potential factor affecting disclosure around equity offerings is concern over litigation. However, research by Jones and Weingram (1997) provides no evidence of increased litigation exposure around equity offerings. We find no evidence of litigation for our sample firms around their offerings.

8. In a related situation, Marquardt and Wiedman (1998) document a positive association between managerial participation in equity offerings and earnings forecasts in the nine months prior to equity offerings. They interpret this result as management’s attempt to lower the information asymmetry when they are participating in the offering.
9. A third potential reason to expect increases in disclosure activity for the issuing firms is an increase in performance. We explicitly control for this in both the disclosure and returns analyses, and discuss it in detail later.

10. An initial public offering requires a slightly more detailed S-1 registration statement, and a firm that has been in the SEC filing system for at least three years and has a market capitalization of greater than $150 million can file an S-3 registration statement, which allows considerable incorporation of information by reference to the periodic filings.

11. We eliminate 26 offerings by utilities (SIC codes 4900-4999) and financial and insurance institutions (SIC codes 6000-6999) because firms in regulated industries operate in a different disclosure environment than industrial firms.

12. The seven firms that withdrew offerings are also potentially interesting. However, the sample size limits our ability to draw inferences. We collected disclosure data for those observations, but could not draw any clear conclusions.

13. Although not the basis of matching, the offering and nonoffering firms also have statistically indistinguishable levels of book value and debt-equity as of the beginning of fiscal 1992, and indistinguishable levels of return on equity and return on assets for fiscal years 1991, 1992, and 1993.

14. Specification checks show that our results are not sensitive to the inclusion of noncompany-authored disclosures.

15. Our frequency of disclosure is similar to that of Francis, Philbrick, and Schipper (1994), who find 13.5 disclosures per firm-year for a sample of 94 firms either named in 10b-5 class-action lawsuits or experiencing a large earnings decline in the biotechnology, computer, electronics, or retailing industries.

16. We developed the category definitions and tone definitions for each category iteratively on a separate small sample of firms until a research assistant and an author coded the vast majority of the documents the same way.

17. In absolute terms, there are very few pessimistic disclosure statements. In the six months prior to the offering there are only 46 pessimistic statements out of a total of 660; over half of them get a pessimistic coding because of our rule that, absent some disclosed benchmark, earnings announcements are assigned a tone based on a random walk of quarterly earnings.

18. In 30 of the 41 cases the offering was registered with the SEC on the same day it was first announced. Remeasuring the disclosure frequency relative to the registration date yields almost identical disclosure frequencies.

19. To reduce the potential effect of extreme observations, we trim the post-offering earnings to be not greater than 100 percent, which affects four observations. Results for the variables of interest are virtually identical without trimming. Results in this regression and the regressions that follow are not sensitive to the specific earnings control employed. As alternatives, we used the change in earnings, the return on equity, and the return on assets with no effect on our results. The estimate of increased disclosure frequency and the significance levels that result without earnings controls are very similar to those reported in Table 3.

20. Earnings controls are generally not statistically significant and results are not sensitive to their inclusion. The lack of a significant positive relation in this context is not
necessarily surprising given that we consider a much smaller sample, an alternative disclosure metric, and a different setting than prior research (e.g., Lang and Lundholm 1993).

21. Our disclosure data contains a quarterly earnings announcement for each of the 12 quarters for all offering and nonoffering firms. In a six-month window we could observe between one and three quarterly earnings announcements. The offering firms’ increase in quarterly earnings statements in the six months prior to registration is consistent with the findings in Korajczyk, Lucas, and McDonald (1991), who show that firms tend to time an equity offer to closely follow an earnings announcement.

22. We also investigate whether statements in the registration statement filed with the SEC concerning the use of the funds can influence the disclosure frequency prior to the offering announcement: 16 firms stated that the use was for “general corporate purposes”, 21 firms planned to use the funds to refinance debt, 1 firm intended to make future acquisitions, and the remaining 3 gave no intended use. We find no significant difference in the change in disclosure frequency between any of these categories of use.

23. While we examine a different disclosure window, the increase in forecast frequency is consistent with Marquardt and Wiedman (1998).

24. Our goal is not to assess whether an increase in disclosure “causes” firms to issue equity, but rather whether the relationship between disclosure and issuance is robust to the inclusion of returns in the regression. An alternative specification would be to regress the disclosure variable on an issuance indicator variable and returns. Applying that specification yields very similar results to those reported in Table 4 (the relationship between disclosure and equity issuance remains positive and significant at levels virtually identical to those in Table 4, and the relationship between disclosure and returns remains marginally significant).

25. It is necessary to interpret the coefficients of a logistic regression relative to some benchmark because, unlike linear regression, the marginal effect of the independent variable depends on its level.

26. Our results are not strictly comparable to the previous literature because, given our small sample size and time period clustering, we measure returns relative to control firms.

27. Asquith and Mullins (1986) find that for primary issues during 1963–81, the cumulative excess returns (over beta-adjusted control portfolios) are 40.4 percent, and the five-day announcement excess return is −3.5 percent; Lee (1997) reports similar statistics for the 1976–90 period.

28. A potential concern is that our matching on industry and size may not completely control for risk differences driving returns. Results are robust to including potential risk measures, including leverage, beta, market-to-book ratio, and price–earnings ratio.

29. We use continuously compounded returns because they have desirable statistical properties. Results in Tables 5–7 are very similar when we use buy-and-hold returns instead.

30. To ensure that extreme observations do not have undue effects on the results, we trim the differences in pre-announcement returns to be not greater than 100 percent, which affects five observations. Results are virtually identical without trimming. As in the
previous section, the return results in this section are not sensitive to the earnings controls included. We have also included the change in earnings, the return on equity, and the return on assets with similar results.

31. Current and near-term future earnings are admittedly an imperfect proxy for performance. However, it is difficult to imagine what performance news could have reached the market in the pre-announcement period that would not be reflected in earnings over the next two years. Results that follow for returns in the announcement and post-announcement periods further suggest that the stock price run-up may be at least partially related to the firm's disclosure activity.

32. The results in Table 5 are very similar if we substitute the change in disclosure frequency for the level of disclosure frequency.

33. During the five-day window around the announcement, 12 firms make some disclosure statement beyond the announcement of the intent to issue equity. We find no significant relation between the difference in the offering and nonoffering firms' announcement-period returns and these disclosures. Consequently, we attribute the price reaction during the announcement period to the announcement of the equity offering and not to other disclosures during the five-day window.

34. This conclusion is confirmed when the regression is estimated including only the change in disclosure. The coefficient on disclosure change remains significantly negative.

35. We also investigate whether the use of the funds given in the registration statement filed with the SEC has an influence on the price reaction at the announcement and find no significant difference in the announcement period returns between any of the categories of uses.

36. The lack of significance for the control variables may reflect the much smaller sample size in this study relative to the prior literature and the fact that our design is not strictly comparable to the prior literature since we use a control sample.

37. The results in Table 7 are similar if the earnings controls are included.

38. Results are virtually identical if the returns window is defined as the period subsequent to the issuance of equity (as opposed to the announcement). The coefficient estimate for the frequency of all statements is 0.029 (p-value of 0.02) and for the change in frequency of all statements is −0.019 (p-value of 0.06). Results across the different categories of disclosure are also very similar.

39. Another possibility is that pre-announcement stock price run-up reflects an overreaction of some other sort that causes management to issue securities, and is followed by a price correction unrelated to prior disclosure policy. This does not appear to be the case here because we know of no reason to expect the pre-announcement overreaction to be correlated with disclosure. In addition, if that were the explanation for the results, the magnitude of the post-announcement price drop should be explained by the pre-announcement run-up. However, including pre-announcement return in the regression does not affect inference.

40. It is possible that our results are capturing the effect of disappointing earnings due to the unwinding accruals made prior to the offering, as in Teoh, Welch, and Wong 1998 and Rangan 1998, or due to biased affiliated analyst recommendations, as in Lin and McNichols 1998 and Dechow, Hutton, and Sloan 1999. However, those effects should be captured by inclusion of post-offering earnings, which does not change our
conclusions. Alternatively, the results may be capturing the effects of risk differences between issuing firms relative to their controls. By construction, size, industry, and exchange differences are minimized through our choice of control firms. Including additional controls for price-earnings, market-book, and leverage does not change the results.

41. Theoretically, the “consistent” discloser group could include firms with consistently low disclosure levels, making results for that group difficult to interpret. As a practical matter, most firms in the consistent discloser group have high disclosure levels relative to the control firms, and eliminating firms with disclosure levels below their controls does not alter the conclusions.

42. The post-announcement returns shown in Figure 2 suggest a profitable trading strategy. However, our use of continuously compounded returns, as well as the difficulty of collecting and coding the disclosure data, makes the implementation of the strategy difficult.

43. See Jennings and Marsh 1987 (1012). The remaining discussion of the legal environment draws heavily from Jennings and Marsh (69–109) and Richardson and Reece 1993.

44. Interestingly, the SEC is currently soliciting comment on a proposal to allow firms contemplating an initial public offering to “test the waters” by communicating with potential investors prior to registering an offering (SEC 1998). If the firm then decides to go forward with the offering, there will be a cooling off period between the initial solicitation of interest and the sale of securities.

References
Clarkson, P., J. Kao, and G. Richardson. 1999. Evidence that management discussion and analysis (MD & A) is a part of the firm’s overall disclosure package. Working paper, University of Alberta.


Securities Act of 1933, 15 USC, section 77.


