

Shelf registrations and offerings: intra-industry effects

Sigitas Karpavičius* Jo-Ann Suchard†

November 6, 2008

Abstract

The goal of this paper is to examine the stock price reactions of both the announcing firms and their rivals to the announcements of the shelf registrations and shelf offerings. The paper documents that the response of the announcing firms is higher than previously reported in the literature. We find that intra-industry effects exist, i.e. the announcement of shelf registration conveys new information to investors about the rival firms. The major determinant of rival firms' response is the market condition. The stock price of rival firms is negatively affected during a bull market and positively when the market is bearish. In addition, this paper documents that a shelf offering is a firm specific event.

Key words: shelf registration, shelf offering, intra-industry effects.

JEL classification: G14, G32.

*Sigitas Karpavičius is at University of New South Wales.

Corresponding author. Address: Banking and Finance, Australian School of Business, UNSW, Sydney NSW 2052, Australia. Email: s.karpavicius@unsw.edu.au.

†Jo-Ann Suchard is at University of New South Wales.

1 Introduction

Seasoned equity offerings (SEOs) play an important role in the life of corporations because during these events the firms substantially increase their capital. Recently shelf registrations have become the key method to offer primary equity, i.e. the capital raised via shelf offerings accounts of one half of the value of the U.S. SEOs (see Autore et al., 2008; Bortolotti et al., 2008). Notwithstanding the importance, shelf registrations have attracted surprisingly little attention among scholars and have not been intensively examined. Moore et al. (1986); Bhagat et al. (1985); Heron and Lie (2004) and other researchers find that the announcement of shelf registration negatively affects the stock price of an announcing firm. Contrary to other flotation methods, the impact of announcement of shelf registration on rival firms is not examined. Hence, the information content of the announcements of shelf registrations and shelf offerings is still not clear, and the question whether these events are firm-specific or intra-industry remains unanswered.

This paper measures the stock market reaction to the announcements of shelf registrations and shelf offerings. If the announcement contains any information, this will be reflected by the significant positive or negative share price response within a short time period. If the rival firms are affected by the firm-level announcement, then it has industry-wide implications. We find that the response of the announcing firms is more negative than previously reported in the literature (see Moore et al., 1986; Heron and Lie, 2004; Bortolotti et al., 2008; Autore et al., 2008). Since the latter authors use a sample that ends in 2004, this paper provides more recent evidence of the stock price reaction of announcing firms. In addition, more negative abnormal returns of announcing firms imply higher total flotation costs, thus the benefits of using shelf registrations to raise new capital might be overstated. The results show that intra-industry effects exist. The announcement of a shelf registration conveys new information to investors about rival firms. The

major determinant of a rival firms' response is the market condition. The stock price of rival firms is positively affected during a bull market (0.15%) and negatively when the market is bearish (-0.62%). The responses are statistically significant. The firms' decision to register the shelf during a bull market is interpreted by investors as good news for the whole industry, as the rival counterparts experience a stock price increase, but bad news for the announcing firm since its stock price drops. The reactions during a bear market are adverse. The announcing firm's stock price decreases more than when the market is bullish, and the rival counterparts are negatively affected. Investors interpret the announcement that not only the announcing firm (as Myers and Majluf (1984) suggest), but also its rival counterparts are overvalued. Thus the news is bad. Since the financial details are not included in the announcement of shelf registration, our findings contribute to the existing literature by measuring "the value" of the announcement, i.e. CAARs of rival firms. In addition, we find that the rival firms are unaffected by the announcement of shelf offering. Therefore, this event is firm specific.

The plausible interpretation of our findings is as follows. The SEO announcement might signal the availability of new projects or the fact that the issuer is overvalued, or be a synthesis of both. In a bull market, stock prices rise and economic outlook is positive indicating project opportunities in the near future. Unexpected announcement of the shelf registration might point out that the prospects for the announcing firm's industry are underestimated. Thus the stock prices of industry counterparts slightly increase. The reaction of the announcing firm's stock is a composite of the positive "new opportunities" effect and negative "being overpriced" (see Myers and Majluf, 1984) effect. The latter dominates. Thus the shelf registration's announcement reduces the competitiveness of the announcing firm relative to its competitors. The announcement is bad news for an announcing firm, but good news for its rival counterparts. The results show that the announcing firm and its rival firms experiences the stock price decrease in a bear market.

The announcement of shelf registration in a bear market spreads a negative information to the market about the whole industry, such as firms in a particular industry are overpriced or suboptimal level of leverage. The “new opportunities” effect is negligible because when the market is bearish, the macroeconomic prospects are likely to be negative, thus the success of new projects might be doubtful to investors. Therefore, the stock price of the announcing firm decreases more than when the market is bullish (for 1-tailed test $p\text{-value}=0.09$) and the rival firms’ stock price falls down too. Since it is bad news for both parties, we document the contagion effects.

The rest of the paper is structured as follows. Section 2 describes briefly the shelf registrations and offerings. Section 3 summarizes the existing literature. Section 4 describes the data sample. The methodology and research methods used in the analysis are presented in Section 5. Obtained results and robustness checks are detailed respectively in Sections 6 and 7. Finally, Section 8 concludes.

2 Institutional background

In 1983, the U.S. Securities and Exchange Commission (SEC) adopted Rule 415 providing for shelf registration offerings. Through a shelf registration, issuers could sell securities (i.e. make shelf offers) on a continuous or delayed basis within a two-year time period. Since 1992 firms are allowed to register universal shelves that might contain not only equity but also debt securities. Due to additional flexibility, the universal shelf registrations became more popular than equity shelf registrations (see Eckbo et al., 2007). In 2005, SEC imposed new rules, under which the shelf registration can be used for three years. Moreover, the unsold securities and filing fees can be transferred to the new shelf registration statement. The whole capital raising process via shelf registration can be summarized as follows. A firm registers a prospectus

with SEC. The prospectus contains maximum number of securities the firm can offer *from time to time* and maximum aggregate offering price that is used to calculate the registration fee. After SEC reviews the prospectus and declares that it is effective, the firm can start making “off-the-shelf” offerings. The effective shelf registration is not an obligation to the firm to offer all the securities registered. If the firm wants to conduct the shelf offering, it must provide SEC with the prospectus supplement with the number of securities offered and offer price.

This method provides firms with flexibility to issue new securities when needed or when market conditions are favorable. Therefore, an announcement of shelf registration might convey industry-wide news. After a firm makes a shelf registration, it receives bids from the investment banks to buy the securities at a certain price (see Denis, 1991; Jensen and Hudson, 1995). Therefore, this flotation method is effectively the auction (Bortolotti et al., 2008). Since the management of the firm has a superior information regarding the true value of the firm, it is likely that only bids above this value are accepted.

The unique feature of the announcement of shelf registration is its uninformative nature. Usually the announcement does not contain the purpose of offering and share price of the offering. The time of issue and underwriters are seldom given too. The announcements of rights, private placements or firm commitments typically have this information. Thus the stock market reaction to the latter announcements might be affected by the additional information and so might reflect value dilution. The poor information content of the shelf registrations’ announcements give us the unique opportunity to study solely the information content of a capital raising announcement, i.e. not considering the impact of the financial details of the proposed issue as well as purpose of the offering that might contain additional information regarding the firm’s future plans and performance. We analyze the information content via the stock price reaction of the announcing firm and its rival

counterparts. For robustness, we also analyze the information content of shelf offerings. When a firm announces a shelf offering, it might disclose the financial details of the issue, but it might also delay announcing the details until the next announcement. One can see the shelf offering as the successful bid of investment bank. The announcement of a shelf offering contains additional information, such as the financial details of the offering etc., and it is likely that information regarding market conditions has been already conveyed to investors by the announcement of shelf registration that was made earlier. Therefore, we expect that the announcement of shelf offering is a firm-specific event. Thus it should not influence the stocks of rival firms.

3 Literature review

There is a relatively large literature on the effects of SEOs announcements. In general, issuer stocks experience an abnormal return of -2 percent over 2 or 3-day event window (for more detailed review see Eckbo et al., 2007). One of the most widely accepted explanations for the price reaction is Myers-Majluf asymmetric information model. Myers and Majluf (1984) suggest that the negative reaction of the announcing firms' stock price is related to inside information held by firms' management, i.e. knowing that firm's stock is overvalued, management can exploit this situation and issue new shares in order to finance a new project. Thus a SEO announcement signals to investors that the stock is overpriced, and thus there is a negative impact on the stock price.

Table 1 presents the announcing firm's stock price response to a shelf registration (see Panel A) and a shelf offering (see Panel B). Two early studies, Bhagat et al. (1985) and Moore et al. (1986), report a significant negative reaction to firms announcing shelf registrations. Moore et al. (1986) document that the abnormal returns observed when shelf and traditional registrations

are announced are not statistically significantly different no matter whether utility or non-utility firms make the announcement. Heron and Lie (2004) analyze the sample of equity offerings announced between 1980 and 1998. They show that the excess returns of the firms announcing shelf registrations are statistically significant and equal to -1.30% . Two recent studies, Autore et al. (2008) and Bethel and Krigman (2005), report that the firms announcing shelf registrations experience insignificant negative abnormal returns over respectively the 3-day and 4-day event windows. The latter results might be imprecise since the authors do not remove the observations when other important announcements regarding the issuer are made around the announcement date. In addition, Autore et al. (2008) perform event studies around the filing dates but not announcement dates. Bortolotti et al. (2008) analyze the accelerated underwritings executed around the world. The authors argue that the popularity of such offers increased due to lower issuance costs and the fact that an issuer bears less price risk. Bortolotti et al. (2008) document the negative but insignificant excess returns for announcing firms. In terms of shelf offerings, the empirical evidence are mixed. Moore et al. (1986) find that utility issuers have positive but statistically insignificant excess return, and non-utility issuers have negative but also statistically insignificant excess return. Denis (1991) uses relatively small sample of observations and report the lower abnormal returns for industrial issuers compared to ones found by Moore et al. (1986). Bethel and Krigman (2005) and Autore et al. (2008), using more comprehensive samples, report that the abnormal returns for firms announcing shelf offerings are negative (respectively -1.35% and -2.41%), lower than in previous studies, and statistically significant.

[Insert Table 1 here]

Empirical evidence suggests that there is an impact of a SEO announcement on a rival firms' stock price too. However, the market reaction is not homogeneous. Slovin et al. (1992) find a negative reaction of commercial

bank common stock issues on rival banks over the period 1975 through 1988. In contrast, industrial firms are unaffected by SEOs announcements by their rivals over the period 1980 through 1985. However, the sample of industrial firms SEOs, used by Slovin et al. (1992), includes mostly equity issues sold through a firm commitment agreement.¹ Szewczyk (1992) analyzes a sample of 128 SEOs announcements made over the period 1970 through 1983. The author finds that the stocks of issuers and their rivals are negatively affected. Polonchek and Miller (1999) analyze the impact of SEOs announcements made by insurance companies on rival firms. The sample consists of 59 primary offerings and 10 joint offerings occurring between 1977 and 1993. The authors find a small negative but significant impact on rival firms' stock price. Besley et al. (2007) examine the impact of a private placement of common equity on rival firms. The sample includes 379 private placements over the period 1985 through 2002. Besley et al. (2007) find a small negative but significant reaction in the rival firms' stock price. However, the impact on rival firms of the announcements of the shelf registrations and offerings has not been yet examined.

The positive share price response of rival firms to the announcement might indicate that all firms in the industry are undervalued, and vice versa. A recent study by Besley et al. (2007) emphasizes the importance of market condition (bull vs. bear) and industry (high-tech vs. non high-tech). Akhigbe et al. (2003) document the stronger reaction of high-tech firms too. The high-tech industry features more dynamic environment, stronger competition and higher uncertainty. Thus response of the industry to any shock is stronger. Keeping in mind the findings of these recent studies, we expect that the absolute value of the abnormal returns for the high-tech firms will be bigger than the ones for the non high-tech firms, and that the excess returns will be different during the bullish and bearish markets.

¹In the initial sample, only 8 out of 240 issues are implemented using best-efforts method; however, 211 events are used in the analysis (see Slovin et al., 1990, 1992).

To our knowledge, there are at least two explanations for the statistically significant stock price reaction of rival firms at the announcement of a SEO. Firstly, intra-industry effects. Theory suggests that the rival firms are affected by the announcement of SEO, as some industry-wide information (positive or negative) is spread to market participants. The studies that address this issue include Slovin et al. (1992); Szewczyk (1992); Polonchek and Miller (1999). There are two kinds of intra-industry effects: competitive and contagion. According to competitive effect, a certain event can alter a firm's competitiveness relative to its rivals. Then the stock prices of an announcing firm and its competitors are affected in the opposite directions. However, when a contagion event occurs, the stock prices of the announcing firm and its competitors move in the same direction. The contagion approach is consistent with the co-movement of asset returns. According to Tawatnuntachai and D'Mello (2002), the competitiveness and contagion effects are not mutually exclusive, thus the observed stock price response to an announcement is the accumulated impact of these two effects.

The second explanation of the response of rival firms' stocks implies that the SEO announcement is an ambiguous signal to the investor. According to Epstein and Schneider (2008), ambiguity-averse investors react negatively to news of uncertain quality. This approach implies that the reaction of investors to ambiguous news is asymmetric, i.e. investors discount good signals, but "overreact" to bad signals. This approach implies that the negative abnormal return does not necessarily mean that the news is bad, but might indicate the market's discomfort with an unclear signal. If the SEO announcement is an ambiguous signal, then the abnormal stock returns over a longer event window will be 0.

4 Data

The initial sample consists of shelf registrations and shelf offerings of primary common stock, registered with Securities and Exchange Commission (SEC) during the period January 1996 through December 2005, and is obtained from SDC Platinum database (U.S. Common Stock Shelf Registrations and U.S. Common Stock). The sample of common stock shelf offerings includes both offerings made under common stock shelf registrations and universal shelf registrations. To ensure that announcing firm is matched with its industry rival firms in the analysis, we exclude the industries whose title in SIC contains the word “miscellaneous” or phrase “not elsewhere classified”. In order to capture the pure effects of the announcements, we also eliminate the secondary or combined primary-secondary security registrations and offerings as well as the shelf registrations of mixed securities and IPOs. We exclude real estate investment trusts (with SIC code 6798) due to the large number of their SEOs announcements in the initial sample that could potentially bias the results. The final sample consists of 165 shelf registrations announcements and 307 shelf offerings announcements that satisfy the following conditions:

1. The announcement date is unambiguous. The exact announcement date is the filing date with SEC or the date of the corresponding article in Factiva News database (whichever first).
2. The offered security is common stock. No other class of securities was jointly issued.
3. No other important announcements regarding the issuer and whenever possible its rival counterparts appeared in Factiva News database around the announcement date.
4. The stock of the announcing firm was traded on the New York Stock

Exchange (NYSE), the American Stock Exchange (AMEX) or the National Association of Securities Dealers Automatic Quotation system (NASDAQ) at the time of offering announcement.

5. The required stock and firm information of announcing firm and at least one its rival counterparts is available on the Center for Research in Security Prices (CRSP) and COMPUSTAT databases.

The final sample consists of 307 shelf offerings announcements, out of which 57 offers are made under common stock shelves and 250 offers are made under universal shelves. Thorough data “cleaning” procedure allows us to retain only 39 shelf registrations that match 40 shelf offerings, i.e. these 40 shelf offerings are made under one of 39 shelf registrations. The explicit analysis of such a small sample of data collected during the period of 10 years creates some doubts regarding results’ consistency.² Therefore, we focus on a full final sample that consists of 165 shelf registrations announcements and 307 shelf offerings announcements.

Consistent with the existing literature, we form the rival firms equally weighted portfolio for each event, i.e. we group all rival firms that share the same 4-digit Standard Industrial Classification (SIC) code as the announcing firm.³ Panels A and B in Table 2 present the frequency distribution of announcing firms by industry, stock exchange and use of proceeds. In the sample of shelf registrations, we retain 13 financial firms (with SIC codes 6000-6999) and 7 public utility firms (with SIC codes 4900-4999) and 145 other firms. There are 57 financial firms and 37 public utility firms in the sample of shelf offerings. As Akhigbe et al. (2003) and Bortolotti et al. (2008), we do not exclude those industries from the sample. This allows us

²The issues regarding consistency arise since some announcements were made during a bull market, others were made during a bear market; in addition, some announcing firms are high-tech, the rest are not etc.

³The SIC codes of announcing firms and rival firms are taken from COMPUSTAT database.

to retain a larger sample size. Approximately two thirds of the firms that announced shelf registrations and one third that announced shelf offerings are from high-tech industries. The separation of firms to high-tech and non high-tech industries is made using the SDC classification, i.e. according to the primary line of business. Almost all the firms in the sample use the proceeds of shelf offerings for refinancing and general corporate purposes. Only in less than 4 percent of cases the proceeds are used for other purposes (e.g. investment). Thus the majority of firms do not disclose the use of proceeds explicitly. The stocks of only a few firms in the sample are traded on AMEX. The stocks of the majority of firms included in the sample of shelf registrations announcements are traded on NASDAQ. Approximately the same number of stocks of the firms from the sample of the shelf offerings announcements are traded on NYSE and NASDAQ.

Panels C and D in Table 2 provide with the descriptive statistics of the sample. The size-related measures, sales and assets, imply that announcing firms are larger than their rival counterparts. The profitability measures, net income and return of equity (ROE), show that announcing firms are less profitable or incur more losses than rival firms, and reflect the implications of signaling theory. Tobin's q is higher for announcing firms indicating that they might have the better growth opportunities. Leverage (debt in current liabilities and long-term debt over market value of assets) is higher for announcing firms suggesting that purpose of equity offering might be to re-optimize their capital structure, and it is consistent with the static trade-off theory that firms have target leverage ratios.

[Insert Table 2 here]

5 Methodology

5.1 Event studies

A standard event study methodology is used to examine the stock price reaction to shelf registration and shelf offering announcements. The abnormal return for an announcing firm and its rival counterparts is the difference of the return of common stock and its expected return generated by the market model:

$$AR_{it} = R_{it} - (\alpha_i - \beta_i R_{mt}), \quad (1)$$

where R_{it} is actual daily return on firm's i common stock for day t , R_{mt} is the actual daily return on the CRSP equally weighted index for day t . We use ordinary least squares (OLS) method to estimate parameters α and β over 200-days period ending 31 day prior the announcement date. We compute the cumulative average abnormal returns (CAAR) for announcing firms, $CAAR_{t_1, t_2}^f$, and rival counterparts, $CAAR_{t_1, t_2}^r$, over several time periods, and follow the methodology of Mikkelson and Partch (1988) to calculate the z-statistics to test the statistical significance of the CAARs (according to the null hypothesis, the CAARs are equal to 0):

$$CAAR_{t_1, t_2}^f = \frac{1}{N} \sum_{t=t_1}^{t_2} \sum_{i=1}^N AR_{it}, \quad (2)$$

$$CAAR_{t_1, t_2}^r = \frac{1}{N \cdot j} \sum_{t=t_1}^{t_2} \sum_{i=1}^N \sum_j AR_{it}, \quad (3)$$

where t_1 and t_2 show the event window, N is the sample size (i.e. the number of announcements), j identifies a single rival firm. In this paper, the pre-event window is (15, -2), the 2-day event window is (-1, 0), and post-event window is (1, 15).

5.2 Cross-sectional regressions

In order to explain the CAARs of rival firms at the announcements of shelf registrations and shelf offerings, we employ the following models. The model for the announcements of shelf registrations is:

$$\begin{aligned}
 ICAR_i &= \beta_0 + \beta_1 CAR_i + \beta_2 BEAR_i + \beta_3 RATIO_i + \beta_4 Q_i & (4) \\
 &+ \beta_5 IQ_i + \beta_6 ROE_i + \beta_7 IROE_i + \beta_8 SIZE_i + \beta_9 REG_i \\
 &+ \beta_{10} D2005_i + \beta_{11} HT_i + \beta_{12} HHI_i + \beta_{13} EXCH_i + \epsilon_i.
 \end{aligned}$$

The model for the announcements of shelf offerings is:

$$\begin{aligned}
 ICAR_i &= \beta_0 + \beta_1 CAR_i + \beta_2 BEAR_i + \beta_3 INFO_i + \beta_4 PURP_i & (5) \\
 &+ \beta_5 Q_i + \beta_6 IQ_i + \beta_7 ROE_i + \beta_8 IROE_i + \beta_9 SIZE_i + \beta_{10} REG_i \\
 &+ \beta_{11} D2005_i + \beta_{12} HT_i + \beta_{13} HHI_i + \beta_{14} EXCH_i + \epsilon_i.
 \end{aligned}$$

In the models above, we use the following notation:

$ICAR_i$, the dependent variable, is the 2-day cumulative abnormal return (CAR) of the equally weighted portfolio of rival firms when the firm i makes an announcement.

CAR_i is the 2-day CAR for the announcing firm i .

$EXCH_i$ is equal to 1 if the announcing firm i is traded on the NYSE or AMEX, 0 otherwise.

$RATIO_i$ is the dollar amount registered divided by the stockholders' equity.

$INFO_i$ is equal to 1 if the financial details of the offer were disclosed, 0 otherwise.

$BEAR_i$ is equal to 1 if the announcement takes place during a bear market, 0 otherwise.

Q_i is Tobin's q of the announcing firm i . Following Masulis et al. (2007), we define Tobin's q as the ratio of a firm's market value of assets over its

book value of assets, where market value of assets is the sum of book value of assets and difference between market value of common equity and book value of common equity.

IQ_i is the median of Tobin's q 's of the rival firms. Tobin's q of each rival firm is calculated in the same manner as for the announcing firm.

ROE_i is the return on equity (ROE) for the announcing firm i .

$IROE_i$ is the median of ROE of the rival firms.

REG_i is equal to 1 if the announcing firm i is in a regulated industry, 0 otherwise.

$SIZE_i$ is the market value of assets of the announcing firm i divided the by the median of market value of assets of the rival firms.

HT_i is equal to 1 if the announcing firm i is from the high-tech industries, 0 otherwise.

HHI_i is the Herfindahl-Hirschman index for the industry calculated as the sum of squares of the market share of each firm in the industry. The measurement of market share is the annual sales.

$PURP_i$ is equal to 1 if the proceeds are used for refinancing and general corporate purposes.

$D2005_i$ is equal to 1 if the announcement was made after December 1st, 2005, 0 otherwise. This variable should control for any effects that are due to new regulations of SEC that became effective on December 1st, 2005.

β_0 is intercept. β_1 - β_{12} are slope coefficients. ϵ_i is the error term.

The covariates for the models are selected following the related previous studies (see Akhigbe et al., 2003; Besley et al., 2007). The announcing firm's CAR is associated with the importance of information content of the SEO announcement. We expect a positive relationship between the announcing firm's CAR and the dependent variable. Since the firms listed on NYSE and AMEX are larger and attract more attention from investors and analysts than the firms listed on NASDAQ, the dummy variable $EXCH_i$ is introduced to capture the effects related with listing on different stock exchange.

Variables $RATIO_i$, $INFO_i$ and $PURP_i$ control for the size and purpose of the issue. The dummy variables $BEAR_i$ and HT_i enable us to analyze the impact of the market cycle (bull vs. bear) and the industry impact (high-tech vs. non high-tech). As in Besley et al. (2007), the bull market is defined as “an advance of at least 20% from the low set during the prior bear market”.⁴ The market price to book value, Q_i , and the ROE of the announcing firm capture the growth and performance of the announcing firm. We use a dummy variable REG_i to capture the impact of financial and public utility firms. The variable $SIZE_i$ controls for the relative size of the announcing firm as the announcement by a larger firm may have more impact on rival counterparts. The Herfindahl-Hirschman index is included as an industry concentration proxy. The impact on rival firms should be higher in less concentrated industries, i.e. industries with a higher Herfindahl-Hirschman index value. The variables IQ and $IROE_i$ are included to control for the growth and performance factors of rival firms.

6 Empirical results

6.1 Impact of announcement of shelf registrations

Panel A in Table 3 reports the announcing firms’ and rival firms’ stock price response to announcements of shelf registrations. The announcing firms’ CAAR is negative and statistically significant (−2.09%). The results are more negative than previously reported in the literature (see Moore et al., 1986; Heron and Lie, 2004; Autore et al., 2008).⁵ The possible explanations include different sample period and the fact that Autore et al. (2008) assume

⁴The definition as well as the periods of bull and bear markets are retrieved from http://www.businessweek.com/investor/content/oct2007/pi2007109_025097.htm on October 26th, 2007.

⁵The CAAR over 3-day event window is even more negative (−2.22%).

that the announcement day is the filing day, but this is not always the case. The average responses for high-tech firms and non high-tech firms are statistically significant and are equal to -2.76% and -0.79% respectively. The CAAR for high-tech firms is statistically significantly different than non high-tech firms (for 2-tailed test p-value = 0.02). This result is expected and is consistent with other research (see Besley et al., 2007). The CAARs for pre-event and post-event windows are insignificant (for brevity not reported in Table 3). The CAAR for rival firms is statistically insignificant; however it is negative on average for high-tech industries, and positive for non high-tech industries. Thus the aggregate results imply no industry-wide effects. One possible explanation is that the stock price reaction for rival firms is opposite in bull and bear markets (see Besley et al., 2007). If it is a case then, for example, significant positive CAAR in a bull market and significant negative CAAR in a bear market offset each other in aggregation; therefore, CAAR for rival firms in whole sample period is insignificant. An alternative interpretation is that shelf registrations are firm specific events. To investigate this, we study the CAARs under different market conditions.

[Insert Table 3 here]

Panels B and C in Table 3 shows the breakdown of results by market condition when a shelf registration is announced. The CAARs for announcing firms are negative and statistically significant in both market phases. When the market is bullish, the CAAR is -1.52% , and when the market is bearish, the CAAR is -3.70% . The announcing firm's stock price decreases more when the market is bearish (for 1-tailed test p-value=0.09). In a bull market, the responses of high tech and non high-tech announcing firms are not statistically different from each other and are equal to -1.81% and -1.09% . During a bear market, the impact is more severe: CAAR for announcing high-tech firms is -3.70% . The response for high-tech firms is not statistically different

during bull and bear markets at 0.1 level.⁶ The rival firms' stock reaction to a shelf registration has opposite signs in a bull vs. a bear market.⁷ The CAAR is positive (0.15%) and statistically significant when the market is bullish, but the CAAR is negative (-0.62%) and statistically significant in a bear market. The impact on rival stocks is driven by high-tech firms. Their CAAR is 0.23% during a bull market and -0.76% during a bear market (both numbers are statistically significant); in addition, there are only 7 observations of non high-tech firms' announcements in a bear market. The statistically significant response of rival firms indicate that the intra-industry effects exist when a shelf registration is announced. The firms' decision to register the shelf during a bull market is understood by investors as good news for whole industry, as the rival counterparts experience a stock price increase, but bad news for the announcing firm since its stock price drops. The reactions during a bear market are adverse: the announcing firm's stock price decreases more than when the market is bullish, and the rival counterparts are negatively affected. Investors interpret this announcement that not only the announcing firm (as Myers and Majluf (1984) suggest), but also its rival counterparts are overvalued. Thus the news is bad. The CAARs are not equal to 0 over longer event window (for brevity not reported in Table 3), thus the results do not support the ambiguity of announcement's approach.

6.2 Impact of announcement of shelf offerings

Panel A in Table 4 summarizes the announcing firms' and rival firms' stock price reaction to announcements of shelf offerings. Announcing firms experience significant negative abnormal returns of -3.66% over the 2-day event window. The results are comparable to those reported by Denis (1991), but lower than Autore et al. (2008). High-tech firms have a more negative abnor-

⁶For 2-tailed test p-value = 0.13.

⁷The responses are statistically different at 0.01 level.

mal returns than non high-tech firms, -4.72% and -3.02% respectively.⁸ The response of rival firms is negative, but statistically insignificant. Therefore, the aggregate results imply no industry-wide effects.

[Insert Table 4 here]

Panels B and C in Table 4 documents the breakdown of CAARs by market condition for shelf offering announcements. The impact on announcing firms is statistically significant. Announcing firms experience a more negative response during a bear market than a bull market (-4.91% vs. -3.33%).⁹ It implies that investors penalize the announcing firms more seriously for the signal of “being overprices” (see Myers and Majluf, 1984) during a bear market. High-tech firms experience significantly more negative abnormal returns than non high-tech firms during a bull market, but the difference is insignificant for a bear market. However, the results by the market condition do not indicate any intra-industry signalling effects, as the CAAR of rival firms are not statistically significant.

Since approximately one third of announcements of shelf offerings do not contain financial details of offer (e.g., share price of offer)¹⁰, we cannot reject the possibility that excess returns of announcements of offers and *pre-offers* offset each other. Further we compare the CAARs at the announcement of shelf offerings when the financial details of offer are disclosed and not.

6.2.1 Impact of content of announcement

The sample of 307 announcements of shelf offerings includes 112 announcements where financial details of the offering are disclosed and 195 announce-

⁸The difference is statistically significant at 0.01 level.

⁹The difference is statistically significant at 0.05 level.

¹⁰Autore et al. (2008) call these announcements as pre-offer filings.

ments where financial details are not disclosed. Table 5 presents the breakdown of results by the content of the shelf offering's announcement. When the financial details of shelf offer are not disclosed in the announcement, the announcing firm experiences a less negative abnormal return than when the financial details are disclosed (-2.98% vs. -4.83%).¹¹ The explanation for this is as follows. Pre-offer filing causes a less negative abnormal return since the issuer will need to announce the pricing details in the next filing, and then the stock price will drop again (see Autore et al., 2008). The average response of high-tech firms is more severe than the one of non high-tech firms (for 2-tailed test p -value = 0.06) when financial details are disclosed; otherwise, the difference is not statistically significant. The market condition seems to be less important: the difference between CAARs for the announcing firm during a bull market and a bear market is not statistically significant.

The results do not indicate any industry-wide implications when a shelf offering is announced.¹² Therefore, the shelf offering announcement contains only firm specific information and affects only the announcing firm.

[Insert Table 5 here]

Consistent with Autore et al. (2008) findings, our results show that an announcement with financial details leads to lower abnormal returns for announcing firm. The separation of sample regarding the content of announcement does not reveal any intra-industry effect when a shelf offering is announced. We do not neglect the possibility that intra-industry effect vanishes due to aggregation of two opposite effects. Further we examine the CAARs when shelf offerings are made under common stock and universal shelves.

¹¹The numbers are statistically different at 0.01 level.

¹²For brevity, we do not report the insignificant CAARs for rival firms.

6.2.2 Shelf offering: impact of the shelf type

Table 6 shows the impact of shelf type (common stock shelf vs. universal shelf) on the CAARs for the announcing firms and rival firms. The abnormal return for announcing firm is statistically significant and more negative when the offering is made under universal shelf than under common stock shelf (-3.71% and -3.43%). The response of announcing high-tech firms is smaller than the one of non high-tech firms. The difference is statistically significant at 0.01 level for offers under universal shelves, but insignificant otherwise. The reaction of rival firms is not significant. The difference between CAARs of shelf offerings made under common stock or universal shelves is statistically insignificant. It holds for both the announcing firms and rival firms. Therefore, the information content of shelf offerings does not depend on whether shelf offering is made under common stock shelf or under universal shelf.

[Insert Table 6 here]

To conclude, we find strong evidence that an announcement of shelf offering is a firm specific event. On the other hand, the results imply that an announcement of shelf registration is associated with some industry-wide implications. Further, we perform several robustness checks to assess the sensitivity of our findings.

7 Robustness checks

7.1 Alternative market portfolio

We also implement the event studies using an alternative market portfolio. Instead of using the CRSP equally weighted index, we use the CRSP value

weighted index. The results are almost identical to ones discussed above and, thus are not reported. So the outcome of the event studies does not depend on a particular market index.

7.2 Alternative measurements of CAARs

The statistically significant values of CAARs for rival firms are relatively small (less than 1% in absolute value). Therefore, in order to make sure that the results obtained are robust, we compute the medians of CAARs and precision-weighted CAARs for rival firms. The precision-weighted CAAR, *PVCAAR*, for time period (T_1, T_2) is calculated as follows:¹³

$$PVCAAR_{T_1, T_2} = \sum_{j=1}^N \sum_{t=T_1}^{T_2} w_j A_{jt}, \quad (6)$$

where

$$w_j = \frac{\left(\sum_{t=T_1}^{T_2} s_{A_{jt}}^2 \right)^{-\frac{1}{2}}}{\sum_{i=1}^N \left(\sum_{t=T_1}^{T_2} s_{A_{it}}^2 \right)^{-\frac{1}{2}}},$$

A_j is the abnormal return of firm j , N denotes the number of trading days in the event period. $s_{A_{jt}}^2$ denotes the maximum likelihood estimate of the variance:

$$s_{A_{jt}}^2 = \frac{\sum_{k=E_1}^{E_2} A_{jk}^2}{M_j - 2} \left[1 + \frac{1}{M_j} + \frac{(R_{mt} - \bar{R}_m)^2}{\sum_{k=E_1}^{E_2} (R_{mk} - \bar{R}_m)^2} \right],$$

where R_{mt} is the actual market return on day t , \bar{R}_m is the mean market return over the estimation period, M_j denotes the number of non-missing returns during the period from E_1 through E_2 used to estimate the parameters for firm j .

¹³Source: Eventus 8.0 User's Guide.

During a bear market, both the mean and median of average abnormal returns for high-tech rival firms are negative on the announcement day and the previous day. Thus the mean, median of CAAR and precision-weighted CAAR are negative during the event windows $(-1, 0)$ and $(-1, 1)$. This result holds for both of market portfolios. On the announcement day, the mean and median of the CAAR for the non high-tech rival firms are negative. However, this result does not hold on the surrounding days. Since the number of non high-tech firms' announcements is small (the sample contains only 7 observations), the CAAR for all rival firms is driven by the CAAR of high-tech rival firms.

During a bull market, the average abnormal return (both mean and median) for high-tech rival firms is positive on the announcement day, the previous day and the day after. The non high-tech rival firms experience a negative stock price reaction on the day before the announcement. However, on the announcement day and the day after, the mean and median of CAAR for rival firms are positive. The signs of the CAARs during the event windows $(-1, 0)$ and $(-1, 1)$ are mixed. The median of CAARs is mostly negative, but mean and precision-weighted CAAR are mostly positive. Thus, we find some support that the stock prices of non high-tech rival firms are positively affected by the announcement of shelf registrations in a bull market. However, the impact is not statically significant.

7.3 Cross-sectional results

Table 7 shows the cross-sectional regression analysis. The dependent variable is the 2-day CAR of the equally weighted portfolio of rival firms. For the announcement of shelf registration there are four parameter estimates that are statistically significant: CAR of announcing firm, the market condition (bull vs. bear market) and the growth factors of an announcing firm and its rival counterparts (respectively Q and IQ). The analysis indicates that

industry rivals response depends directly on the information content of the shelf registration announcement, as the CAR of the rival counterparts is positively related to the CAR of the announcing firm. The estimate of the dummy variable *BEAR* is negative and indicates that in a bear market the announcement of shelf registration conveys to investors negative information about whole industry. There is a negative relationship between Tobin's q of the announcing firm and rival firms' response which is consistent with Besley et al. (2007). This implies that if the announcing firm has better growth opportunities, then the impact on rival firms will be more severe. However, there is a positive relationship between the abnormal return of rival firms and their Tobin's q . This suggests that strong rivals have a weaker reaction to the announcement of shelf registration.

[Insert Table 7 here]

Table 7 presents the results for the announcements of shelf offerings too. The model is misspecified as the R^2 and F-values statistics are very small. The *CAR* is statistically significant, but all other parameter estimates are statistically insignificant. This implies that the variables used in the model cannot explain the CAR of rival firms.¹⁴ Thus we conclude that the announcement of shelf offering does not convey any new information about rival firms to investors.

We argue that the abnormal return for announcing firm, *CAR*, might depend on the rival firms' response, *ICAR*. For example, if the level of competition is high in the industry, the rival firms' stock price reaction might depend on the announcing firm's stock price response and vice versa. If it is a case, the abnormal return of announcing firm, *CAR*, is endogenous, and the employed model suffers from the endogeneity problem. Surprisingly,

¹⁴If the model is $ICAR_i = \beta_0 + \beta_1 CAR_i + \epsilon_i$, then the parameter estimate for slope is equal to 0.313 (p-value = 0.052), i.e. almost identical to one in Table 7, R^2 is equal to 0.0124 and F-value is 3.82 (Prob > F is 0.0517).

the related literature has not identified this problem.¹⁵ In order to control for the endogeneity problem, we utilize the two stages least squares, 2SLS, and the three stages least squares, 3SLS, models. We do it separately for the announcements of shelf registrations and shelf offerings. We use the natural logarithm of the market value of assets of the announcing firm as the instrumental variable in 2SLS model and as the additional covariate in 3SLS model. We find that the instrumental variables cannot explain *CAR* well.¹⁶ For both models, 2SLS and 3SLS, we fail to model the CARs for announcing firms. For brevity, we do not report the parameter estimates.

8 Conclusion

The goal of this paper is to examine the stock price reactions of both the announcing firms and their rivals to the announcements of the shelf registrations and shelf offerings. The paper documents that the response of the announcing firms is more negative than previously reported in the literature (see Moore et al., 1986; Heron and Lie, 2004; Bortolotti et al., 2008; Aultore et al., 2008). Since the latter authors use a sample that ends in 2004, this paper provides more recent evidence of the stock price reaction of the announcing firms. In addition, more negative abnormal returns of announcing firms imply higher total flotation costs, thus the benefits of using shelf registrations to raise new capital might be overstated.

We find conclusive evidence that there are no intra-industry effects when the shelf offering is announced. Therefore, this event is firm specific. This holds for both the announcements of the shelf offerings made under common

¹⁵The early studies (e.g., Szewczyk, 1992; Slovin et al., 1992) do not implement any cross-sectional regression. The later studies (e.g., Besley et al., 2007) do implement, but do not consider endogeneity problem.

¹⁶The fitted values for *CAR* are not informative. For example, p-value is higher than 0.8.

stock and universal shelves. The announcement of the shelf offering “tells” to investors how costly the seasoned stock issuance is, but the fact that the stock of announcing firm is overpriced is conveyed to the market when the shelf registration was announced.

The results show that the announcement of shelf registration has industry-wide implications, and our results do not support the ambiguity of announcement’s approach, since the CAARs over the longer event window are not equal to 0. Thus the announcement of a shelf registration conveys new information to investors about rival firms. The major determinant of a rival firms’ response is the market condition. The stock price of rival firms is positively affected during a bull market (0.15%) and negatively when the market is bearish (−0.62%). The responses are statistically significant. The firms’ decision to register the shelf during a bull market is interpreted by investors as good news for the whole industry, as the rival counterparts experience a stock price increase, but bad news for the announcing firm since its stock price drops. The reactions during a bear market are adverse. The announcing firm’s stock price decreases more than when the market is bullish , and the rival counterparts are negatively affected. Investors interpret such announcement that not only the announcing firm (as Myers and Majluf (1984) suggest), but also its rival counterparts are overvalued. Thus the news is bad. A more thorough analysis of this issue is limited by the small sample of the announcements of shelf registrations. We believe that by increasing the sample (e.g. by expanding the time period or by adding the announcements of SEOs of other flotation methods) could help us better understand the difference between the SEOs announcements made in bull and bear markets. We leave this issue to future work.

Bibliography

- Akhigbe, A., Borde, S. F. and Whyte, A. M. (2003). Does an industry effect exist for initial public offerings? *The Financial Review* 38: 531–551.
- Autore, D. M., Kumar, R. and Shome, D. K. (2008). The revival of shelf-registered corporate equity offerings. *Journal of Corporate Finance* 14: 32–50.
- Besley, S., Kohers, N. and Steigner, T. (2007). Private placements of common equity and the industry rival response. *Applied Financial Economics* 17: 559–568.
- Bethel, J. E. and Krigman, L. (2005). Unallocated shelf registration: why doesn't everybody use it? Unpublished manuscript.
- Bhagat, S., Marr, M. W. and Thompson, G. R. (1985). The rule 415 experiment: Equity markets. *Journal of Finance* 40: 1385–1401.
- Bortolotti, B., Megginson, W. and Smart, S. B. (2008). The rise of accelerated seasoned equity underwritings. *Journal of Applied Corporate Finance* 20: 35–57.
- Denis, D. J. (1991). Shelf registration and the market for seasoned equity offerings. *Journal of Business* 64: 189 – 212.
- Eckbo, B. E., Masulis, R. W. and Norli, O. (2007). Security offerings. In Eckbo, B. E. (ed.), *Handbook of Corporate Finance: Empirical Corporate Finance*. North-Holland/Elsevier, 1, chap. 6.
- Epstein, L. G. and Schneider, M. (2008). Ambiguity, information quality, and asset pricing. *Journal of Finance* 63: 197–228.

- Heron, R. A. and Lie, E. (2004). A comparison of the motivations for and the information content of different types of equity offerings. *Journal of Business* 77: 605–632.
- Jensen, M. R. and Hudson, C. D. (1995). Should managers shelf register secondary offerings? *Quarterly Journal of Business & Economics* 34: 25–38.
- Masulis, R. W., Wang, C. and Xie, F. (2007). Corporate governance and acquirer returns. *Journal of Finance* 62: 1851–1889.
- Mikkelson, W. H. and Partch, M. M. (1988). Withdrawn security offerings. *Journal of Financial and Quantitative Analysis* 23: 119–34.
- Moore, N. H., Peterson, D. R. and Peterson, P. P. (1986). Shelf registrations and shareholder wealth: A comparison of shelf and traditional equity offerings. *Journal of Finance* 41: 451 – 463.
- Myers, S. C. and Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics* 13: 187–221.
- Polonchek, J. and Miller, R. K. (1999). Contagion effects in the insurance industry. *The Journal of Risk and Insurance* 66: 459–475.
- Slovin, M. B., Sushka, M. E. and Hudson, C. D. (1990). External monitoring and its effect on seasoned common stock issues. *Journal of Accounting and Economics* 12: 397–417.
- Slovin, M. B., Sushka, M. E. and Polonchek, J. A. (1992). Informational externalities of seasoned equity issues: Differences between banks and industrial firms. *Journal of Financial Economics* 32: 87–101.

Szewczyk, S. H. (1992). The intra-industry transfer of information inferred from announcements of corporate security offerings. *The Journal of Finance* 47: 1935–1945.

Tawatnuntachai, O. and D'Mello, R. (2002). Intra-industry reactions to stock split announcements. *The Journal of Financial Research* 25: 39–57.

Table 1: Cumulative average abnormal returns of announcing firms

This table summarizes the results of the existing research regarding the cumulative abnormal average returns (CAARs) for announcing firms at the announcements of shelf registrations and shelf offerings. Industrial issuers are the firms that are not classified as the financial firms nor public utility firms. In the event windows, day 0 is the announcement day (in some cases it is filing day). The CAARs are in percents.

Source	Sample size	Period	Event window	CAAR	Firms
Panel A. Shelf registrations					
Bhagat et al. (1985)	93	1982-1983	(0, 1)	-0.80***	All
Moore et al. (1986)	53	1982-1983	(-1, 0)	-1.87**	Non-utility
Moore et al. (1986)	31	1982-1983	(-1, 0)	-0.31	Utility
Heron and Lie (2004)	256	1980-1998	(-1, 1)	-1.30***	Industrial
Bethel and Krigman (2005)	718	1992-2001	(-1, 2)	-0.24	Non-financial
Autore et al. (2008)	341	1990-2003	(-1, 1)	-0.30	Industrial
Bortolotti et al. (2008) ^a	97	1991-2004	(-1, 1)	-1.34	All
Panel B. Shelf offerings					
Moore et al. (1986)	53	1982-1983	(-1, 0)	-0.46	Non-utility
Moore et al. (1986)	31	1982-1983	(-1, 0)	0.25	Utility
Denis (1991) ^b	9	1982-1986	(-1, 0)	-4.33	Industrial
Denis (1991) ^b	31	1982-1986	(-1, 0)	-0.31	Utility
Bethel and Krigman (2005)	366	1992-2001	(-1, 2)	-1.35***	Non-financial
Autore et al. (2008) ^c	386	1990-2003	(-1, 1)	-2.41***	Industrial

** CAAR is significant at the 0.05 level.

*** CAAR is significant at the 0.01 level.

^a The full sample of the U.S. accelerated offerings, used by Bortolotti et al. (2008), includes 243 observations (80 percent of them involve shelf-registered shares). The authors selected randomly 97 observations and verified an exact announcement date through a manual search of Lexis/Nexis.

^b Denis (1991) analyzes only firms that issue shares under both shelf and nonshelf registrations. The announcement date is the day of registration or the day of the offering, whichever first.

^c Here the CAAR includes the share price responses to the filing, pre-offer filing and offering.

Table 2: Frequency distribution of announcing firms by industry, stock exchange and use of proceeds; descriptive statistics of the sample

Panels A and B in this table present the frequency distribution of announcing firms by industry, stock exchange and use of proceeds. Panels C and D provide with the descriptive statistics. The sample consists of 145 shelf registrations (see Panels A and C) and 307 shelf offerings (see Panels B and D) of primary common stock, registered with SEC during the period January 1996 through December 2005, and is obtained from SDC Platinum database (U.S. Common Stock Shelf Registrations and U.S. Common Stock). We excluded the industries whose title in SIC contains the word “miscellaneous” or phrase “not elsewhere classified”. We also eliminated the secondary or combined primary-secondary security offerings as well as the shelf registrations and shelf offerings of mixed securities. The separation of firms to high-tech and non high-tech industries is made using SDC classification, i.e. according to the primary line of business. R & GC stands for refinancing and general corporate purposes. Sales, net income and assets are in millions of U.S. dollars.

	High-tech		Industry		Stock exchange			Purpose				
	High-tech	Non high-tech	Total	Total	NYSE	AMEX	NASDAQ	Total	R & GC	Other	Total	
Panel A. Shelf registrations												
Financial firms	0	13	13	12	0	1	13					
Public utility firms	0	7	7	1	0	6	7					
Other firms	109	36	145	26	4	109	145					
Total	109	57	165	39	10	116	165					
Panel B. Shelf offerings												
Financial firms	1	56	57	50	1	6	57	54	3	57		
Public utility firms	0	37	37	0	18	37	37	36	1	37		
Other firms	114	99	213	85	4	124	213	205	8	213		
Total	115	192	307	154	5	148	307	295	12	307		
Panel C. Shelf registrations												
Announcing firms	Sales		Net income		Assets		ROE		Tobin's q		Leverage	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Announcing firms	613.1	35.7	12.276	-9.001	1846.2	419.2	-0.094	-0.059	3.703	2.592	0.110	0.054
Rival firms	246.7	45.3	8.180	-0.959	709.2	271.3	-0.015	-0.007	2.238	2.028	0.089	0.030
Panel D. Shelf offerings												
Announcing firms	Sales		Net income		Assets		ROE		Tobin's q		Leverage	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Announcing firms	1544.4	277.1	15.019	6.156	4001.8	1049.5	-0.077	0.019	2.394	1.462	0.213	0.197
Rival firms	1013.7	143.4	42.917	6.193	2208.3	444.4	0.016	0.034	1.718	1.328	0.167	0.135

Table 3: Cumulative average abnormal returns of announcing firms and rival firms at the announcement of shelf registrations

This table presents the cumulative abnormal average returns (CAARs) at the announcement of shelf registrations. The CAARs are for firms announcing the shelf registrations and equally weighted portfolios consisting of all rival firms that share the same 4-digit Standard Industrial Classification (SIC) code as the announcing firm. The sample consists of shelf registrations of primary common stock, registered with SEC during the period January 1996 through December 2005, and is obtained from SDC Platinum database (U.S. Common Stock Shelf Registrations). We excluded the industries whose title in SIC contains the word “miscellaneous” or phrase “not elsewhere classified”. We also eliminated the secondary or combined primary-secondary security offerings as well as the shelf registrations of mixed securities. The final sample consists of 165 shelf registrations announcements. Panel A provides the results for whole sample, Panel B shows the results when the announcement takes place during a bull market, Panel C presents the results when the announcement takes place during a bear market. N is the number of announcements. The CAARs are measured over days -1 and 0 , when day 0 is the announcement day. The CAARs are in percents. z -stat. is the standardized test statistics calculated following the methodology of Mikkelson and Partch (1988). The z -statistic tests the null hypothesis that the CAARs equal to 0 . % Neg. shows the percent of cumulative abnormal returns having negative values.

Industry	N	Announcing firms			Rival firms		
		CAAR	z -stat.	% Neg.	CAAR	z -stat.	% Neg.
Panel A. Whole sample							
Both	165	-2.09	-4.21***	67	-0.05	0.42	57
High-tech	109	-2.76	-3.84***	68	-0.10	0.29	59
Non high-tech	56	-0.79	-1.86*	64	0.05	0.32	54
Panel B. Bull market							
Both	122	-1.52	-3.19***	68	0.15	1.93*	51
High-tech	73	-1.81	-2.44**	67	0.23	2.16**	51
Non high-tech	49	-1.09	-2.06**	69	0.04	0.42	51
Panel C. Bear market							
Both	43	-3.70	-2.87***	63	-0.62	-2.44**	74
High-tech	36	-4.68	-3.22***	69	-0.76	-2.57***	75
Non high-tech	7	1.33	0.21	29	0.14	-0.21	71

* Test statistic is significant at the 0.1 level.

** Test statistic is significant at the 0.05 level.

*** Test statistic is significant at the 0.01 level.

Table 4: Cumulative average abnormal returns of announcing firms and rival firms at the announcement of shelf offerings

This table presents the cumulative abnormal average returns (CAARs) at the announcement of shelf offerings. The CAARs are for firms announcing the shelf offerings and equally weighted portfolios consisting of all rival firms that share the same 4-digit Standard Industrial Classification (SIC) code as the announcing firm. The sample consists of shelf offerings of primary common stock, registered with SEC during the period January 1996 through December 2005, and is obtained from SDC Platinum database (U.S. Common Stock). We excluded the industries whose title in SIC contains the word “miscellaneous” or phrase “not elsewhere classified”. We also eliminated the secondary or combined primary-secondary security offerings as well as the offerings of mixed securities. The final sample consists of 307 shelf offerings. Panel A provides the results for whole sample, Panel B shows the results when the announcement takes place during a bull market, Panel C presents the results when the announcement takes place during a bear market. N is the number of announcements. The CAARs are measured over days -1 and 0 , when day 0 is the announcement day. The CAARs are in percents. z -stat. is the standardized test statistics calculated following the methodology of Mikkelson and Partch (1988). The z -statistic tests the null hypothesis that the CAARs equal to 0. % Neg. shows the percent of cumulative abnormal returns having negative values. N is the sample size.

Industry	N	Announcing firms			Rival firms		
		CAAR	z -stat.	% Neg.	CAAR	z -stat.	% Neg.
Panel A. Whole sample							
Both	307	-3.66	-16.60***	83	-0.07	-0.59	55
High-tech	115	-4.72	-9.54***	83	-0.01	-0.15	55
Non high-tech	192	-3.02	-13.60***	82	-0.10	-0.63	55
Panel B. Bull market							
Both	243	-3.33	-14.66***	81	-0.03	-0.48	53
High-tech	90	-4.35	-8.49***	82	0.06	0.28	51
Non high-tech	153	-2.72	-11.71***	81	-0.08	-0.78	54
Panel C. Bear market							
Both	64	-4.91	-8.17***	88	-0.23	-0.43	63
High-tech	25	-6.06	-4.36***	88	-0.26	-0.86	68
Non high-tech	39	-4.17	-6.98***	87	-0.20	0.15	59

*** Test statistic is significant at the 0.01 level.

Table 5: Cumulative average abnormal returns of announcing firms at the announcement of shelf offerings: impact of the financial details of the offer

This table presents the cumulative abnormal average returns (CAARs) at the announcement of shelf offerings. The CAARs are for firms announcing the shelf offerings. The sample consists of shelf offerings of primary common stock, registered with SEC during the period January 1996 through December 2005, and is obtained from SDC Platinum database (U.S. Common Stock). We excluded the industries whose title in SIC contains the word “miscellaneous” or phrase “not elsewhere classified”. We also eliminated the secondary or combined primary-secondary security offerings as well as the offerings of mixed securities. The final sample consists of 307 shelf offerings announcements, out of which 195 do not contain financial details. Panel A reports the results for all announcements, Panel B provides the results when the announcement takes place during a bull market, Panel C presents the results when the announcement takes place during a bear market. N is the number of announcements. The CAARs are measured over days -1 and 0 , when day 0 is the announcement day. The CAARs are in percents. z -stat. is the standardized test statistics calculated following the methodology of Mikkelson and Partch (1988). The z -statistic tests the null hypothesis that the CAARs equal to 0. % Neg. shows the percent of cumulative abnormal returns having negative values. N is the sample size.

Industry	Offers without fin. details				Offers with fin. details			
	N	CAAR	z-stat.	% Neg.	N	CAAR	z-stat.	% Neg.
Panel A. All observations								
Both	195	-2.98	-12.23***	82	112	-4.83	-11.35***	85
High-tech	65	-3.72	-6.49***	82	50	-6.03	-7.07***	86
Non high-tech	130	-2.62	-10.37***	82	62	-3.85	-8.90***	84
Panel B. Bull market								
Both	168	-2.82	-11.07***	80	75	-4.45	-9.47***	85
High-tech	57	-3.80	-6.37***	81	33	-5.31	-5.65***	85
Non high-tech	111	-2.32	-9.05***	79	42	-3.77	-7.65***	86
Panel C. Bear market								
Both	27	-3.97	-5.26***	93	37	-5.59	-6.26***	84
High-tech	8	-3.14	-1.49	88	17	-7.44	-4.26***	88
Non high-tech	19	-4.32	-5.30***	95	20	-4.02	-4.59***	80

*** Test statistic is significant at the 0.01 level.

Table 6: Cumulative average abnormal returns of announcing firms and rival firms at the announcement of shelf offerings: offers under common stock shelves vs. offers under universal shelves

This table presents the cumulative abnormal average returns (CAARs) at the announcement of shelf offerings. The CAARs are for firms announcing the shelf offerings and equally weighted portfolios consisting of all rival firms that share the same 4-digit Standard Industrial Classification (SIC) code as the announcing firm. The sample consists of shelf offerings of primary common stock, registered with SEC during the period January 1996 through December 2005, and is obtained from SDC Platinum database (U.S. Common Stock). We excluded the industries whose title in SIC contains the word “miscellaneous” or phrase “not elsewhere classified”. We also eliminated the secondary or combined primary-secondary security offerings as well as the offerings of mixed securities. The final sample consists of 307 shelf offerings announcements, out of which 57 offers are made under the common stock shelves and 250 offers are made under the universal shelves. Panel A reports the results for the offers that are made under the common stock shelves, Panel B provides the results for the offers that are made under the universal shelves. N is the number of announcements. The CAARs are measured over days -1 and 0 , when day 0 is the announcement day. The CAARs are in percents. z-stat. is the standardized test statistics calculated following the methodology of Mikkelson and Partch (1988). The z-statistic tests the null hypothesis that the CAARs equal to 0. % Neg. shows the percent of cumulative abnormal returns having negative values.

Industry	N	Announcing firms			Rival firms		
		CAAR	z-stat.	% Neg.	CAAR	z-stat.	% Neg.
Panel A. Offers under common stock shelves							
Both	57	-3.43	-5.13***	68	-0.21	-1.21	58
High-tech	40	-3.81	-4.06***	73	-0.06	-0.66	55
Non high-tech	17	-2.55	-3.17***	59	-0.57	-1.19	65
Panel B. Offers under universal shelves							
Both	250	-3.71	-15.94***	86	-0.04	-0.08	54
High-tech	75	-5.21	-8.85***	89	0.02	0.30	55
Non high-tech	175	-3.06	-13.26***	85	-0.06	-0.29	54

*** Test statistic is significant at the 0.01 level.

Table 7: Regressions explaining the industry rival response

This table presents the parameter estimates for OLS model. The dependent variable is the 2-day cumulative abnormal return (CAR) of the equally weighted portfolio of rival firms, $ICAR$. CAR_i is the 2-day CAR for the announcing firm. $BEAR$ is equal to 1 if the announcement takes place during a bear market, 0 otherwise. $RATIO$ is the registered sum divided by the stockholders' equity. $INFO$ is equal to 1 if the financial details of the offer were disclosed, 0 otherwise. $PURP$ is equal to 1 if the proceeds are used for refinancing and general corporate purposes. Q is market price to book value of the announcing firm. Q is market price to book value of the announcing firm. IQ is the median of Tobin's q 's of the rival firms. ROE is the return on equity for the announcing firm. $IROE$ is the median of return on assets of the rival firms. $SIZE$ is the market value of assets of the announcing firm i divided the by the median of market value of assets of the rival firms. REG is equal to 1 if the announcing firm is in a regulated industry, 0 otherwise. $D2005_i$ is equal to 1 if the announcement was made after December 1st, 2005, 0 otherwise. HT is equal to 1 if the announcing firm is from the high-tech industries, 0 otherwise. HHI is the Herfindahl-Hirschman index for the industry. $EXCH$ is equal to 1 if the announcing firm is traded on the NYSE or AMEX, 0 otherwise. N is the number of announcements.

Variable	Shelf registrations		Shelf offerings	
	Parameter estimate	p-value	Parameter estimate	p-value
Intercept	-0.00118	0.814	0.00106	0.822
CAR	0.04663	0.018	0.03057	0.081
BEAR	-0.00630	0.049	-0.00079	0.692
RATIO	-0.00243	0.432		
INFO			-0.00145	0.395
PURP			-0.00088	0.829
Q	-0.00080	0.068	0.00000	0.998
IQ	0.00331	0.094	0.00005	0.972
ROE	0.00423	0.342	-0.00086	0.580
IROE	0.01629	0.509	-0.00959	0.561
SIZE	-0.00003	0.303	-0.00002	0.624
REG	0.00372	0.397	-0.00111	0.587
D2005	0.00621	0.502	-0.00529	0.511
HT	-0.00034	0.935	0.00065	0.794
HHI	0.00735	0.462	0.00517	0.240
EXCH	-0.00356	0.265	0.00048	0.809
R^2	0.1464		0.0316	
Adj. R^2	0.0729		-0.0148	
F-value	1.99		0.68	
Prob > F	0.0249		0.7925	
N	165		307	