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Divergence of Opinion Surrounding Extreme Events

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Abstract

This paper examines the stock market performance of a large sample of new issues (IPOs and SEOs) following an extreme price movement during the first three years after the offering. Strong underperformance follows either a positive or negative (at least +/−15%) one-day return event. This poor performance cannot be explained by the Fama-French four-factor methodology, or by the generally low stock returns of growth firms. Unlike recent issuers, non-issuers report no poor performance following a similar extreme event using the four-factor methodology. The extreme event date shows very high levels of turnover, a measure of divergence of opinion. Finally, there is a strong negative linkage between higher levels of divergence of opinion and subsequent stock performance.

Keywords: *IPOs*; *SEOs*; *divergence of opinion.*

JEL classification: *G*12, *G*14

1. Introduction

A foundation of the efficient market hypothesis is the premise that new information on a firm is immediately incorporated into stock prices. Yet, financial markets sometimes appear to have difficulty correctly interpreting new information on publicly traded firms. Kang *et al.* (1999), Houge *et al.* (2001), Ikenberry and Ramnath (2002) and Lamont and Thaler (2003) all provide recent evidence of apparent capital market failure to properly price equity shares.

We thank Kenneth French for providing the Fama-French monthly time series of factor realisations. Rick Mendenhall, Maureen O'Hara, Jay Ritter, Paul Schultz, Paula Tkac, Michael Roberts and seminar participants at the University of Notre Dame and the 2004 FMA meeting provided helpful comments.

To enhance understanding of the incorporation of information, we analyse how investors respond to news affecting a large sample of initial public offerings (IPOs) and seasoned equity offerings (SEOs) during the 1983–98 time period. We focus on information affecting new issues because other authors have found that IPOs and SEOs earn poor long-run stock returns after an offering (Ritter, 1991; Loughran and Ritter, 1995; Spiess and Affleck-Graves, 1995). As returns are essentially driven by new information, it seems logical to examine events that may contribute to the documented new issue underperformance.

There are many ways to define 'information incorporation'. Looking at just one type of news item, say, earnings announcements, might produce a sample of events that do not have a significant impact on a firm's returns. We instead first identify days when new issues experience extremely large positive or negative returns. On these days, financial markets are obviously processing what they feel is significant information related to the recent issuer of equity.

By this measure, a company that recently completed a new equity issue enters our sample the first time the firm experiences a one-day market-adjusted return of at least $+/-15\%$. A firm is included in the sample only if the extreme-return event occurs 20 days after the offering and up to the third-year anniversary of the offering. On average, the extreme-return event occurs slightly more than a year after the equity offering. To reduce bid/ask spread noise, firms must have a stock price above \$10 as of the prior trading day to be included.

It is important that we establish what is economically unique about extreme event days that could lead to new issue underperformance. In fact, we show that extreme event days are accompanied by a wide divergence of opinion among investors. We use turnover (trading volume scaled by shares outstanding) as a proxy for divergence of opinion or heterogeneous investor beliefs. We feel turnover is the appropriate measure here as many authors have pointed to differences of opinion as the primary explanation for trading volume in stocks.[1]

We find large levels of turnover on the day of the extreme return event and on the days following. For example, for negative event new issues, average turnover is 11.07% on the extreme event date. This compares to an average of 1.75% on the prior day for the same firms. Often the reason for the extreme event has already been announced, yet financial market participants continue to trade the stock on the premise that the stock is misvalued. Higher relative trading volume is related to higher levels of uncertainty.

There are three possible relationships between divergence of opinion measures and post-event stock returns. First, as proposed by Miller (1977), heterogeneous investor beliefs may lead to poor long-run returns. This would occur in the presence of short-sales constraints or some other frictions that keep pessimistic investors out of the marketplace.

Second, it is possible that heterogeneous investor beliefs have a positive relationship to future returns. If a wide divergence of opinion is a proxy for the idiosyncratic risk

[1]See, for example, Harris and Raviv (1993), Kandel and Pearson (1995) and Odean (1998). Chen *et al*. (2002) note that the use of short interest itself as a proxy for the amount of negative information left out of the market can be problematic. Stocks may have a low or zero amount of short interest simply because they are difficult to short. In this case, a small amount of short interest indicates that more negative information is withheld from the market, rather than less. They conclude that there is no definitive relationship between short interest and future returns.

of the stock, then future returns should be higher for stocks with more heterogeneous investor beliefs. This theory would view divergence of opinion measures as positively correlated with the volatility of earnings streams.

Finally, it is possible that there is no relationship between divergence of opinion and future returns. This would be consistent with the models of Diamond and Verrecchia (1987) and Hong and Stein (2003).

For our first contribution, we present evidence consistent with Miller's (1977) hypothesis. Extreme event days are accompanied by high turnover, and poor stock performance follows either a positive (at least +15%) or a negative (at least −15%) one-day return event for new issues. Fama (1998) argues that long-term return anomalies often depend on the methodology employed, and that many disappear when exposed to different models or approaches as to expected returns. To address this issue, we use calendar and event time weighting to gauge long-term performance.

Three-year buy-and-hold returns of the samples are first benchmarked against the equally weighted Fama-French (1997) industry returns. All sample firms are assigned by four-digit SIC codes to one of 48 different industries. The Fama-French four-factor model provides the other benchmark. The four-factor model uses market, size, book-to-market, and momentum as the relevant variables.

Our IPO/SEO positive and negative groups underperform their industries in the three years following the event.[2] The four-factor model indicates statistically significant underperformance for extreme event new issues but not for non-issuers. Extreme-return new issues underperform by approximately 5% per year. This is after controlling for beta, size, book-to-market, and momentum factors during the three years following the extreme return event using equally weighted portfolio returns.

In order to be consistent with Miller's (1977) model, we must present evidence of short-sales constraints or other frictions that are more binding for new issues than for non-issuers. D'Avolio (2002) reports that IPOs are difficult or expensive to short. He also finds that measures of disagreement among investors (high turnover, high dispersion in analyst forecasts, increased message board activity, and low cash flows) appear to predict high equity loan fees. Geczy *et al.* (2002) find that only investors with good access to equity loans can short IPOs at first, although there is improved ability to short IPOs after the first six months. For growth stocks shorting costs are five times higher than value stocks, and it is well documented that firms issue secondary equity offerings after periods of strong stock price performance, typically making them growth stocks. Chen *et al.* (2002) point out that Miller's theory requires that only some, not all, investors be short-sales constrained.

While high loan fees may inhibit short-selling, there are additional frictions to shorting. No shares may be available for shorting, or high return volatility may sideline some investors. Rising prices might squeeze investors and cause them to abandon their short positions.

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[2]Much of the literature on extreme events has focused on stock returns one day following the event (Brown and Harlow, 1988; Atkins and Dyl, 1990; Bremer and Sweeney, 1991). Cox and Peterson (1994) examine firm stock returns following large price declines in a short window following the event (days 4 through 20). These researchers analyse the extent of the reversals and the role of bid/ask spreads. Given the documented long-run underperformance of new issues, our focus is on three-year stock performance following an extremely large price movement.

Diether *et al.* (2002) also observe that any alternative mechanism to short-sales constraints that blocks the revelation of negative opinions would be consistent with Miller (1977). They find that stocks with a high degree of dispersion in analysts' forecasts (their proxy for divergence of opinion) earn poor returns over the next year. They note that the analyst incentive structure discourages negative opinions. The absence of negative analyst opinions may be more pronounced for IPOs than for non-issuers. Indeed, Rajan and Servaes (1997) find that analysts are more overoptimistic with earnings projections and growth models for IPOs, even after controlling for size and industry effects.

Our findings are not a manifestation of the documented poor long-run new issues performance nor are they attributable solely to growth firms. We conduct four-factor regressions for non-event new issues as well. The extreme event firms statistically underperform non-extreme event new issues by 4–5% per year using the Fama and French four-factor methodology.

Fama and French (1993) report that small growth firms have significantly negative intercept values under their methodology. Brav *et al.* (2000) provide evidence that new issue underperformance is clustered among small growth issuers. Our findings, however, are robust even when all growth firms are eliminated from the new issues universe. This suggests that the poor post-performance of new issues is not universal. Our result also addresses the interest of Ritter and Welch (2002) with regard to IPOs that are likely to be long-run underperformers.

Our second contribution is to provide evidence on the type of news announcements that drive extreme-event IPO returns. To understand whether it is one or multiple types of news items that cause extreme returns, we use Nexis/Lexis to find news releases that coincided with one-day extreme returns for the IPOs. For positive IPO events, the most common announcements are earnings increases, new projects, and the possibility of acquisition. For negative events, the most common are earnings changes and analyst downgrades.

Our final contribution is to link event day turnover with the poor subsequent stock performance of the sample. We find that the higher the event day turnover, the poorer the subsequent stock performance after adjusting for other factors. The higher the level of divergence of opinion, the worse the subsequent returns for the sample of new issues. The long-run returns decline even more for firms that experience a high degree of turnover both on the event day and in the five days after.

The remainder of the paper is organised as follows. Section 2 describes our data sample and the methodology. Section 3 examines the subsequent stock return performance of new issues and non-issuers following an extreme-return event. In the paper's last section, we offer conclusions and implications.

2. Data

A. *New issue sample*

Our data source for IPOs and SEOs from 1983 through 1998 is the Thomson Financial Securities Data (also known as Securities Data Company) new issues database. Stock return and trading volume information is collected from the Center for Research in Security Prices (CRSP). We start the sample in 1983 due to missing volume values for Nasdaq-listed firms on CRSP prior to November 1982.

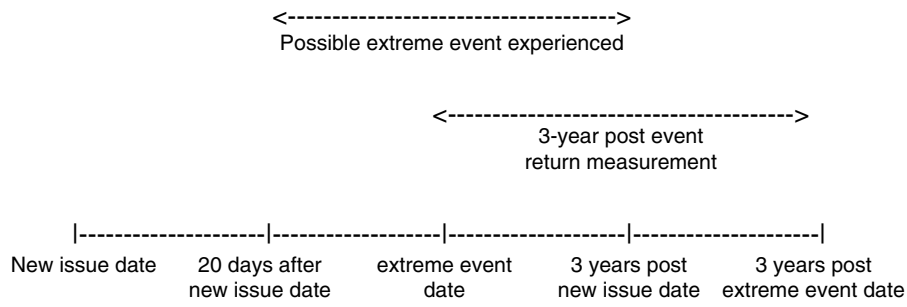

Fig. 1. Event classification timeline.

The figure shows a timeline of significant dates for the extreme event new issues sample. The event sample consists of new issues that first experienced a one-day market-adjusted return of at least +/−15% from 20 trading days after the equity offer to the third-year anniversary of the offering date.

The sample firms must meet criteria as follows. The new issues must have an offer price of at least $5 per share (this reduces the impact on the sample of micro-cap offerings). Unit offerings, closed-end funds, Real Estate Investment Trusts (REITs), partnerships, non-US operating companies (as defined by CRSP), utilities (three-digit SIC codes 491-494), and American Depository Receipts (ADRs) are excluded from the sample universe. The final sample includes 5,451 initial public offerings and 5,343 seasoned equity offerings.

We analyse this sample for extreme daily stock price movements. Figure 1 shows the timeline of events for IPOs and SEOs that meet the sample requirements. The first time a new issue experiences a one-day market-adjusted return of at least +/−15% within three years of the offering date, the firm enters our sample. For excess one-day returns, we use the CRSP value-weighted index as the benchmark. The time period for extreme returns runs from the 20 days after the offering to the third-year anniversary of the offering.

We remove the trading days immediately following the offering due to high volatility and possible underwriter price support. The month of October 1987 is also excluded in order to avoid large price jumps or declines due to the unusual trading performance surrounding the 1987 stock market crash. To reduce the impact of bid/ask spread bounce, firms are included only if their stock price on the close of the day before the extreme event is higher than $10. The $10 stock price screen also makes the sample of firms more of interest to institutional investors.[3]

B. *Non-issuer extreme event sample*

The non-issuer sample is composed of US operating firms (as defined by CRSP) with at least five years of seasoning during 1983–98. To be included in the sample, a firm must not have completed an SEO in the previous five years. We again exclude unit

[3]Cox and Peterson (1994) also exclude October 1987. Bremer and Sweeney (1991) include in their sample of Fortune 500 one-day stock reversals only firms whose stock price was at least $10 before the event.

offerings, closed-end funds, REITs, partnerships, utilities, and ADRs. The non-issuers must also have a closing stock price higher than $10 on the day before the extreme event. The same +/−15% one-day stock return movement is used to classify the event. Seasoned firms may enter the non-issuer sample multiple times between 1983 and 1998, although they are excluded for five years after any extreme event. The month of October 1987 is again excluded.

C. *Abnormal performance methodologies*

We use two different benchmark methodologies to measure subsequent performance of extreme-return new issues and non-issuers. First, we consider the three-year buy-and-hold performance of the different groups. Buy-and-hold return information is obtained from the CRSP daily data; the returns commence the day immediately following the extreme event and last until the earlier of the firms' delisting date, or the third anniversary of the event, or 31 December 2003 (the last date of the 2003 daily database). Wealth relatives are reported along with buy-and-hold returns to help interpret the post-return performance. The wealth relative is defined as the average gross stock returns of the sample divided by the average gross returns for the benchmark.

We assign each sample firm to one of 48 different industries using Fama and French's (1997) four-digit SIC classifications. Hence, firms within the Aircraft Industry (SIC 3720-3729) use the Aircraft Industry returns as the benchmark portfolio. The handful of sample firms with missing SIC codes or codes not assigned by Fama and French (1997) at the time of the extreme event are denoted as Miscellaneous Industry.

We parcel the entire CRSP stock universe of US operating firms (as defined by CRSP) into 48 Fama-French (1997) industries by four-digit SIC codes. Both equally weighted daily and monthly industry return series are created. To lessen the impact of bid-ask spread bounce affecting our industry return benchmarks, we use daily returns for partial months and monthly returns for complete calendar months in creating the buy-and-hold returns. As an example, firms with a 15 August 1991 starting point use the daily industry returns until the last day of August 1991. Starting in September 1991, monthly industry returns are used in the buy-and-hold returns until the last partial calendar month.

We also use the Fama and French four-factor model to gauge abnormal performance. The four factors include a value-weighted market index, a firm size portfolio, a book-to-market portfolio, and a momentum portfolio. Factor definitions for this model are given in Fama and French (1993). The momentum factor has been studied by Jegadeesh and Titman (1993) and Carhart (1997), among others. The Fama-French factor methodology uses calendar-time returns, not event-time returns. Schultz (2003) recommends calendar-time returns to avoid biases from the pseudo-market timing ability of issuing firms.

The stock return information for all firms is collected from the CRSP monthly database. The returns start in the month immediately after the extreme event. The regressions measure the performance of new issues against two comparison samples. The first comparison is all new issues that have not experienced an extreme event in the prior three years. The other comparison is non-issuers that have experienced a +/−15% one-day return.

Note that this is an implementable trading strategy. At any given time, an investor could learn which firms had completed an offering in the prior three years and which firms had experienced a stock movement of at least +/−15% in the prior three years. No information about future events is needed to exploit our trading strategy.

3. Does the Market React Correctly to the Extreme Return Event?

Researchers who have examined the issue of long-run over/underreactions by the stock market include De Bondt and Thaler (1985), Lakonishok *et al.* (1994), Dharan and Ikenberry (1995), Ikenberry *et al.* (1995), Loughran and Ritter (1995), Spiess and Affleck-Graves (1995), Brav and Gompers (1997), Baker and Wurgler (2000), Brav *et al.* (2000), Jegadeesh (2000), Mitchell and Stafford (2000), Huh and Subrahmanyam (2004), and Kadiyala and Rau (2004). Our examination is different in that it is confined to the stock performance of a large sample of new issues that report extremely high or low one-day returns in the three years after the offering.

A. *Prior and subsequent performance of extreme-event sample*

Table 1 reports mean and median market values, event day returns, one-year returns prior to the extreme event, three-year returns after the extreme event, and corresponding wealth relatives for the different samples. These samples include extreme event IPOs, SEOs, and non-issuers. Median values are reported in brackets.

The number of sample firms is reported in the first column. There are 1,920 IPOs with an extreme positive event and 2,005 IPOs with a negative event. There are 1,539 positive event SEOs and 1,605 negative event issuers. The IPOs and SEOs are split approximately equally between the two types of events. Non-issuers, however, are tilted toward positive events (3,000 versus 1,488).

New issuers can simultaneously be in both the positive and negative event portfolios. That is, firms can move up at least 15% in one day and down at least 15% one day in the three years after issuing initial equity.

The second column in Table 1 reports the trend in the percentage of firms listed on Nasdaq across the three samples. The results are not surprising. IPOs are overwhelmingly listed on Nasdaq (about 88% of the sample); SEOs list on Nasdaq about 75% of the time; and non-issuers with an extreme event are on the exchange about 60% of the time.

This effect in the proportion listed on Nasdaq relates to firm age. IPOs are typically much younger than the other firms, so a much higher proportion are listed on Nasdaq (which has less restrictive standards for listing than the other exchanges). Non-issuers, by definition, are older. That is, non-issuers must be publicly traded for at least five years prior to entering our sample. Hence, non-issuers list on the New York Stock Exchange (NYSE) or the American Stock Exchange (Amex) in much higher numbers than new issues.

The third column reports both the mean and median market value of the samples one-day prior to the extreme event. On average, the IPO extreme event firms are much smaller than either the SEOs or the non-issuers. Obviously, outliers in the terms of market values can affect the average values of the portfolios, but the median values indicate that typical firms are rather similar in terms of market value. For the positive

Table 1

Mean and median exchange, market value, event day return, prior and subsequent stock performance and market values for extreme event categories, 1983–1998.

						Prior 1-year return (%)		Post 3-year return (%)		
Item	N	% listed on Nasdaq	Market value (millions)	1-day event return (%)	1-day market return (%)	Extreme event sample	Fama-French industry	Extreme event sample	Fama-French industry	3-year wealth relative
Positive event IPOs	1,920	88.0	$252.9 [$142.6]	20.8 [18.2]	0.2 [0.2]	33.3 [12.6]	15.1 [11.4]	34.2 [−15.7]	40.6 [26.6]	0.95
Negative event IPOs	2,005	87.5	$387.2 [$163.6]	−22.6 [−19.6]	−0.1 [−0.0]	52.2 [13.4]	15.5 [10.9]	20.6 [−27.5]	43.9 [30.8]	0.84
Positive event SEOs	1,539	74.0	$588.5 [$238.5]	20.5 [18.1]	0.3 [0.2]	36.2 [10.3]	20.3 [15.1]	25.0 [−8.9]	42.0 [26.1]	0.88
Negative event SEOs	1,605	75.8	$814.2 [$295.5]	−23.1 [−20.0]	−0.1 [−0.0]	49.9 [18.6]	20.0 [14.6]	20.2 [−15.9]	44.3 [30.8]	0.83
Positive event Non-Issuers	3,000	61.3	$1,023.6 [$117.8]	22.4 [19.0]	0.1 [0.1]	68.1 [28.4]	31.2 [21.8]	20.3 [4.6]	26.8 [15.4]	0.95
Negative event Non-Issuers	1,488	56.2	$2,142.2 [$220.3]	−20.8 [−18.5]	−0.0 [0.0]	65.5 [18.3]	22.3 [14.0]	26.9 [7.3]	34.9 [23.8]	0.94

The extreme event sample consists of new issues (IPOs and SEOs) that first experienced a one-day market-adjusted return of at least +/−15% during 20 trading days after the equity offer to the third-year anniversary of the offering date. The CRSP NYSE/Nasdaq/Amex value-weighted (VW) index is used as the market index for the one-day return. For the prior and post returns, we use the Fama-French (1997) industry portfolio returns as the benchmark. The non-issuers sample includes firms with at least five years in the CRSP tapes that have not issued an SEO in the last five years. All returns are buy-and-hold returns. Market values (in millions of dollars) are as of one-day prior to the extreme event. Median values are given in brackets.

event samples, the IPOs have a median market value of $143 million and the SEOs $239 million, while non-issuers report the lowest median market values ($118 million).

The next two columns in Table 1 report the one-day event return for the sample firms and the CRSP VW-index. On average, the table reports a one-day return of 20.8% for the positive event IPOs compared to a −22.6% return for the negative event IPOs. Both the mean and median one-day returns for the value-weighted CRSP index are very close to zero. The SEO and non-issuer samples also report average and median one-day returns in line with the IPO returns.

The sixth and seventh columns indicate that all three samples have strong stock market returns in the year before the event compared to the returns of the Fama-French industries over the same time period. For example, the first two rows provide raw average prior one-year returns of 33% for positive event IPOs and 52% for negative event IPOs. The non-issuers also have raw prior one-year returns that are quite high, 68% for positive events and 66% for negative events.

Column eight of Table 1 reports the three-year post raw returns following the extreme event for each sample. The corresponding industry benchmark returns and wealth relatives are the last two columns. The first two rows report that following the extreme-return positive or negative event, IPOs experience poor subsequent stock performance compared to industry returns (wealth relatives of 0.95 and 0.84, respectively). The results for the SEO sample in rows three and four show that the positive and negative event SEOs perform poorly as well: wealth relatives of 0.88 for positive events and 0.83 for negative events.

This subsequent performance for extreme event new issues is in contrast to the returns reported by extreme event non-issuers. Positive or negative event non-issuers underperform the industry only slightly. The seasoned positive event firms and seasoned negative event firms report wealth relatives of 0.95 and 0.94, respectively.

Median returns show the same pattern. Both IPOs and SEOs have median raw returns that are quite negative, while non-issuers have median raw returns that are positive. The financial market appears to more correctly gauge the information conveyed in the extreme event for the non-issuers.

B. *Event categorisation by particular news event*

What can we say about the type of announcement that caused the extreme return for our sample? Do they tend to be only a few kinds of announcements? Because so many news items would need to be hand-collected for all new issues (7,069 observations), we collect news items for IPOs only (3,925 observations). IPOs have a much shorter public operating record than SEOs, and we intuitively expect greater differences in the IPO sample than in the SEO sample in how investors process news items.

We use Lexis/Nexis to find the particular news event that coincided with the extreme event for each of the 3,925 positive/negative IPO events. For example, Qualcomm, Inc., experienced a 31% one-day gain on 30 September 1992. The Business Wire announcement was a new Qualcomm project – it would be supplying technology and equipment to Local Area Telecommunications, Inc. On the negative side, Valujet experienced a one-day decline of 23% on 13 May 1996 (Monday), on the news that a Valujet DC-9 had crashed in the Florida Everglades two days earlier (Saturday).

Table 2 categorises the news announcements that are linked with the extreme-return events. For the positive event sample, there were coincident news announcements for 1,063 IPOs, or 55% of the total positive event sample of 1,920 (Panel A). News

Table 2
Event day news items for the extreme event IPO and non-issuer samples.

Panel A: Positive event IPOs

Item	Number of positive event IPOs	% total positive event IPOs	Number of positive event non-Issuers	% collected positive event non-Issuers
Earnings decline	28	1.5	–	–
Earnings increase	226	11.9	24	12.5
Acquisition (target)	149	7.8	35	18.2
Acquisition (bidder)	72	3.8	5	2.6
Acquisition abandoned	–	–	–	–
Firm put up for sale	–	–	–	–
Friendly merger	9	0.5	6	3.1
Positive FDA action	21	1.1	–	–
Negative FDA action	–	–	–	–
Drug delayed/failed	–	–	–	–
Accounting irregularity	–	–	–	–
Analyst upgrade	55	2.9	–	–
Analyst downgrade	–	–	–	–
New project	209	11.0	–	–
Increased product comp.	–	–	–	–
Security offering	12	0.6	–	–
Stock repurchase	6	0.3	–	–
Stock split	5	0.3	–	–
Large outsider stock purchase	10	0.5	–	–
Positive legal action	5	0.3	–	–
Negative legal action	6	0.3	–	–
Govt. denial of project	–	–	–	–
Management turnover	21	1.1	–	–
Weak customer orders	–	–	–	–
Multiple announcements	54	2.8	–	–
Other	160	8.3	17	8.9
No item found	857	45.0	105	54.7
Total	1,920	100.0	192	100.0

announcements were found for 1,445 IPOs or 72% of the total negative event sample of 2,005 (Panel B). If more than one type of announcement is found for a given event day, the announcement is classified by the majority of news announcements on that day. Firms with an equal number of different types of announcements are categorised as 'multiple announcements'.

We also collect a subsample of news items related to extreme events of non-issuers. Each year, we calculate the number that equals 10% of our IPO observations and find news items for this number of non-issuers in the given year. The non-issuers are sorted by the CRSP perm number, and the observations are chosen in this order.

For the positive event IPOs, Panel A of Table 2 shows the most frequent two coinciding news events are announcements of an earnings increase and a new project, occurring for 12% and 11%, respectively, of the positive event sample. For the non-issuers'

Panel B: Negative event IPOs

Item	Number of negative event IPOs	% total negative event IPOs	Number of negative event non-Issuers	% collected negative event non-Issuers
Earnings decline	758	37.8	65	32.3
Earnings increase	127	6.3	6	3.0
Acquisition (target)	95	4.7	–	–
Acquisition (bidder)	10	0.5	–	–
Acquisition abandoned	29	1.4	9	4.5
Firm put up for sale	–	–	–	–
Friendly merger	–	–	–	–
Positive FDA action	–	–	–	–
Negative FDA action	10	0.5	–	–
Drug delayed/failed	9	0.4	–	–
Accounting irregularity	17	0.8	–	–
Analyst upgrade	–	–	–	–
Analyst downgrade	108	5.4	5	2.5
New project	37	1.8	–	–
Increased product comp.	17	0.8	–	–
Security offering	8	0.4	–	–
Stock repurchase	–	–	–	–
Stock split	–	–	–	–
Large outsider stock purchase	–	–	–	–
Positive legal action	–	–	–	–
Negative legal action	5	0.2	–	–
Govt. denial of project	15	0.7	–	–
Management turnover	23	1.1	–	–
Weak customer orders	19	0.9	–	–
Multiple announcements	30	1.5	6	3.0
Other	91	6.4	33	16.4
No item found	560	27.9	77	38.3
Total	2,005	100.0	201	100.0

The sample consists of initial public offerings (IPOs) that first experienced a one-day market-adjusted return of at least +/−15% from the 20 trading days after going public to the third-year anniversary of the offering date. Non-issuers represent a random sample of seasoned firms that experience a one-day market-adjusted return of at least +/−15%. We classify news items by searching the Lexus/Nexus database in the days surrounding the extreme event date. A dash indicates 5 or fewer observations for the given news item.

announcements, the most frequent positive events are acquisition information (21% in total) and earnings increases (13%). Neither sample shows clustering in only one type of news item.

Panel B shows the most frequent negative event announcement is an earnings decline, occurring for 38% of the negative extreme-return sample. Earnings increases, analyst downgrades, acquisition announcements, and new project announcements follow. Earnings declines drive the majority of the non-issuers' announcements as well (32%).

Overall, there are no major differences between the news announcements that drive non-issuer events and IPO events. When three-year buy-and-hold returns are grouped by announcement code (not reported), there are no discernible patterns in their performance against an industry benchmark.

C. *Factor-adjusted stock performance*

Given that Ritter (1991), Loughran and Ritter (1995), and Spiess and Affleck-Graves (1995) have reported poor performance for new issues in the three-year period following the offering, our evidence following extreme new issue returns is hardly surprising. To see whether our evidence differs from the general subsequent performance of new issues, we use the Fama and French four-factor model to examine the performance of event new issues, non-event new issues, and non-issuers. To simplify the presentation, in this section we combine IPOs and SEOs into new issue portfolio returns.

We start with new issues. All new issues are in the 'non-event new issues' category until they experience an extreme return. Some issuers will never move from this category. Next, new issues are placed into the positive event or negative event portfolios for the three years after the event. By moving the new issues through the portfolios in this way, we do not induce a look-ahead bias in the portfolio groupings. The extreme return is included in the non-event portfolio because we start measuring the returns of event new issues in the month after their extreme return. Portfolios are formed similarly for the non-issuer extreme event sample.

Table 3 reports the coefficients using the Fama-French four-factor regression methodology. All t-statistics (in parentheses) are heteroskedasticity-consistent. Row 1 reports that all new issues exhibit no significant underperformance in the three-year period after the equity issuance by the insignificant intercept in the four-factor regression. Positive and negative event new issues in rows 2 and 3 exhibit a strong and statistically significant underperformance. Non-event new issues (row 4), however, produce returns that are not significantly different from zero. The difference in performance between positive and negative event new issues and non-event new issues is a significant 34–40 basis points per month (rows 5 and 6), or approximately 4–5% per year.

Non-issuers that experience an extreme event do not show statistically significant underperformance after controlling for market, size, book-to-market, and momentum (rows 7 and 8). The difference in performance between extreme-event new issues and extreme-event non-issuers is a significant 32–41 basis points per month, or approximately 4% per year (rows 9 and 10).

Figure 2 graphs the difference in annual performance for the different groups as determined by the four-factor model. All new issues underperform by approximately 1.7% annually. Positive and negative extreme-return new issues underperform by approximately 5%. Finally, non-event new issues show insignificant yearly underperformance of between 0.4% and 0.7%.

Table 3 overall indicates that poor performance following the extreme IPO and SEO events is beyond the general pattern reported in Ritter (1991), Loughran and Ritter (1995), and Spiess and Affleck-Graves (1995). In fact, it implies that the poor performance of new issues, as measured by the four-factor model, is strongly clustered among firms that have reported an extreme-return event after the offering.

D. *Impact of growth firms*

Brav *et al.* (2000) document that the poor performance of recent issuers may occur because the issuers are mostly small growth firms. Generally, small growth firms, not just new issues, tend to have negative alphas in Fama and French factor regressions. To address this concern, we remove all growth firms from our extreme event samples of new issues. That is, each calendar year (1984–2000) we remove all firms with lower

Table 3

Time series regressions of new issue portfolio returns with market, size, book-to-market, and momentum as explanatory variables, 1984–2000 (204 months).

Row	Item	a	b	s	h	m	R^2
1	All new issues	−0.14	1.13	0.81	−0.06	−0.27	0.94
		(−1.29)	(35.03)	(12.32)	(−1.09)	(−6.56)	
2	Positive event new issues	−0.38	1.19	0.92	−0.28	−0.30	0.92
		(−2.61)	(32.30)	(14.03)	(−4.39)	(−7.22)	
3	Negative event new issues	−0.44	1.20	0.99	−0.20	−0.45	0.92
		(−2.87)	(30.47)	(13.64)	(−2.67)	(−9.61)	
4	Non-event new issues	−0.04	1.12	0.69	0.17	−0.31	0.88
		(−0.25)	(27.69)	(8.38)	(2.57)	(−5.95)	
5	Positive event new issues minus non-event new issues (row 2–4)	−0.34	0.07	0.23	−0.45	0.01	0.62
		(−2.43)	(2.01)	(4.85)	(−7.82)	(0.14)	
6	Negative event new issues minus non-event new issues (row 3–4)	−0.40	0.07	0.30	−0.37	−0.14	0.53
		(−2.78)	(2.30)	(6.46)	(−6.10)	(−3.09)	
7	Non-issuers positive event	−0.06	0.97	0.76	0.17	−0.16	0.93
		(−0.61)	(36.35)	(13.46)	(3.21)	(−5.14)	
8	Non-issuers negative event	−0.03	1.13	0.71	0.19	−0.40	0.88
		(−0.18)	(27.12)	(9.72)	(2.64)	(−8.55)	
9	Positive event new issues minus non-issuers (row 2–7)	−0.32	0.22	0.15	−0.45	−0.14	0.58
		(−2.17)	(6.11)	(3.31)	(−5.65)	(−3.12)	
10	Negative event new issues minus non-issuers (row 3–8)	−0.41	0.06	0.28	−0.39	−0.05	0.45
		(−2.45)	(1.64)	(6.03)	(−5.40)	(−1.00)	

The extreme-return event sample consists of new issues (IPOs and SEOs) that first experienced a one-day market-adjusted return of at least +/−15% during the three years after the equity issuance. The non-issue sample includes firms with at least five years on the CRSP tapes that have not issued an SEO in the five years prior to the extreme event. Firms can enter the non-issuer samples only once every five years. R_{pt} is the portfolio return in month t; R_{mt} is the return on the VW index of NYSE/Amex/Nasdaq stocks in month t; R_{ft} is the beginning-of-month three-month T-bill yield in month t; SMB_t is the return on small firms minus the return on large firms in month t; HML_t is the return on high book-to-market stocks minus the return on low book-to-market stocks in month t; and MOM_t is the return on high momentum (measured by prior one-year return) stocks minus the return on low momentum stocks. All t-statistics are heteroskedasticity-consistent and are given in parentheses. The regressions use 204 months of data from January 1984 through December 2000:

$$R_{pt} - R_{ft} = a + b[R_{mt} - R_{ft}] + sSMB_t + hHML_t + mMOM_t + e_t$$

than the median Fama-French HML (value minus growth) loading (regressing individual firm stock returns against the four-factor model). Firms with a low loading (less than the median) on HML are classified as 'growth'. Growth stocks will have, by definition, low or negative loadings on the HML factor due to their low book-to-market ratios. This reduces our example of extreme events by one-half.

This approach introduces a look-ahead bias into the analysis. That is, growth firms are identified only after observing how the stock returns load on the HML factor. While we do not advocate this approach as a trading strategy, such a procedure is very good at

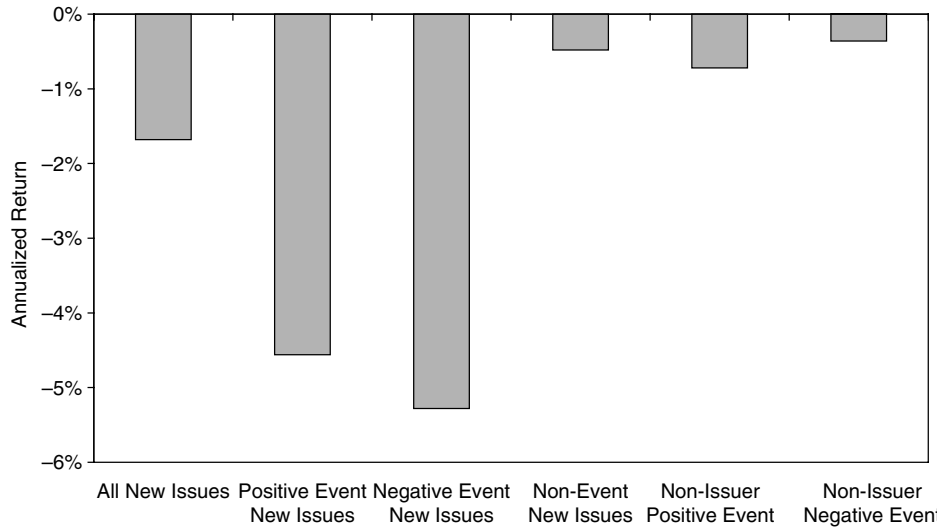

Fig. 2. Annualised abnormal new issues portfolio returns calculated using Fama and French four-factor methodology.

The Fama and French four-factor methodology is used to determine monthly abnormal return performance for equally weighted portfolios of new issues, non-event new issues, extreme event new issues, and non-issuers. This monthly performance is then converted to an annualised percentage. The extreme event sample consists of new issues that first experienced a one-day market-adjusted return of at least +/−15% from the 20 trading days after the offering to the third-year anniversary of the offering date. Non-event firms are new issues with less than three years of seasoning on CRSP that have not experienced a one-day market-adjusted return of at least +/−15% from the 20 trading days after going public to the third-year anniversary of the offering date.

identifying firms whose stock returns move with growth firms. Further, it demonstrates the robustness of the poor stock performance if growth firms are removed.

Table 4 reports equally weighted four-factor regressions for the extreme event sample including growth firms (row 1 and 3) and excluding them (rows 2 and 4). Both positive and negative extreme event issues continue to underperform, with statistically significant intercepts of −39 and −50 basis points per month, respectively. This translates to underperformance of approximately 5% per year.

Extreme event new issues underperform even after elimination of growth firms. None of the coefficient values changes much except for the loading on HML. In rows 2 and 4, the HML coefficient is half the value of the regressions for the whole new issues sample. Hence, removing growth firms from the analysis does not affect the interpretation of the poor stock performance of new issues that experience an extreme event.

E. *Divergence of opinion in trading volume*

Table 5 and Figure 3 report the average daily turnover for the new issue and non-issuer samples for the 12 days surrounding the event. Turnover is defined as trading volume divided by shares outstanding. We double the trading volume of firms listed on the NYSE/Amex to allow for a meaningful comparison with firms listed on Nasdaq (Atkins and Dyl, 1997; Barclay, 1997).

Table 4

Time series four-factor regressions for extreme event new issues with and without growth firms, 1984–2000.

Row	Item	a	b	s	h	m	R^2
1	Positive event new issues	−0.38	1.19	0.92	−0.28	−0.30	0.92
		(−2.61)	(32.30)	(14.03)	(−4.39)	(−7.22)	
2	Positive event new issues (excluding growth firms)	−0.39	1.18	0.91	−0.14	−0.38	0.87
		(−2.14)	(27.28)	(12.02)	(−1.97)	(−7.22)	
3	Negative event new issues	−0.44	1.20	0.99	−0.20	−0.45	0.92
		(−2.87)	(30.47)	(13.64)	(−2.67)	(−9.61)	
4	Negative event new issues (excluding growth firms)	−0.50	1.23	1.01	−0.10	−0.51	0.88
		(−2.77)	(29.21)	(13.86)	(−1.24)	(−10.97)	

The extreme-return event sample consists of new issues (IPOs and SEOs) that first experienced a one-day market-adjusted return of at least +/−15% during the three years after the equity issuance. Rows 2 and 4 remove new issues that have a HML loading less than the median coefficient value during the calendar year of the extreme event. R_{pt} is the portfolio return in month t; R_{mt} is the return on the VW index of NYSE/Amex/Nasdaq stocks in month t; R_{ft} is the beginning-of-month three-month T-bill yield in month t; SMB_t is the return on small firms minus the return on large firms in month t; HML_t is the return on high book-to-market stocks minus the return on low book-to-market stocks in month t; and MOM_t is the return on high momentum (measured by prior one-year return) stocks minus the return on low momentum stocks. All t-statistics are heteroskedasticity-consistent and are given in parentheses. The regressions use 204 months of data from January 1984 through December 2000:

$$R_{pt} - R_{ft} = a + b[R_{mt} - R_{ft}] + sSMB_t + hHML_t + mMOM_t + e_t$$

There is a clear surge in trading volume on the event date. This is consistent with the big stock price movement. Positive event new issues see daily turnover jump from 1.81% on day −1 to 5.90% on the event date. Negative event new issues see an even greater turnover increase, 1.75% on day −1 to 11.07% on the extreme event date.[4]

Note also that the turnover remains high in the days following the extreme event. For example, on day +1 there is an average turnover of 5.94% for the negative event new issues. This is consistent with the idea that financial markets have some difficulty gauging the impact of the event.

It is also consistent with a wide divergence of opinion among traders. The catalyst for the extreme event has already happened, whether it is a plane crash for Valujet or increased earnings for Corsair Communications. Yet institutional and retail investors continue to heavily trade the stock on the premise that the current stock price is incorrect. Turnover directly relates to divergence of opinion among financial participants.

For the positive event firms, there is not much difference in turnover between the new issues and non-issuers (Figure 3, Panel A). For the negative event firms (Panel B), new issues show considerably higher turnover on the day of and the days following the event than non-issuers.

[4]Trading volume also spikes on the extreme event date. As an example, the average trading volume for negative event new issues is over 2.3 million shares on day 0 compared to less than 250,000 average trading volume on day −6.

Table 5
Average percentage daily turnover surrounding the extreme event.

Day	Positive event new issues (%)	Negative event new issues (%)	Positive event non-issuers (%)	Negative event non-issuers (%)
−6	1.05	1.09	0.82	1.06
−5	1.05	1.10	0.88	1.06
−4	1.10	1.14	0.91	1.10
−3	1.15	1.28	0.91	1.16
−2	1.30	1.42	1.05	1.35
−1	1.81	1.75	1.47	1.78
0	5.90	11.07	5.88	7.89
+1	3.68	5.94	3.82	4.24
+2	2.28	3.26	2.43	2.40
+3	1.88	2.43	1.90	1.93
+4	1.64	2.18	1.67	1.74
+5	1.53	2.01	1.61	1.62
+6	1.43	1.85	1.48	1.50

The extreme event sample consists of new issues (IPOs and SEOs) that first experienced a one-day market-adjusted return of at least +/−15% during 20 trading days after the equity offer to the third-year anniversary of the offering date. The non-issuers sample includes firms with at least five years on the CRSP tapes that have not issued an SEO in the last five years. Turnover is defined as trading volume divided by shares outstanding. Firms listed on the NYSE/Amex have their trading volume doubled to allow a meaningful comparison with firms listed on Nasdaq. Day 0 is the extreme event date.

To quantify the turnover difference after adjusting for firm characteristics we run the regression:

$$\text{Event Day Turnover}_{ij} = a_{0j} + a_{1j}\text{New Issues Dummy}_{ij} + a_{2j}\text{Positive Event Dummy}_{ij} + a_{3j}\text{Prior 1-Year Return}_{ij} + a_{4j}\text{Log(Market Value)}_{ij} + a_{5j}\text{Prior Day Turnover}_{ij} + a_{6j}\text{Nasdaq Dummy}_{ij} + e_{ij}$$

The explanatory variables are dummy variables for new issues (else zero), positive events (else zero), prior-year raw return, natural logarithm of the market value two days prior to the extreme event, prior day turnover, and Nasdaq listing (else zero). The results are in Table 6. In Panel A, the dependent variable is the day −5 turnover. In Panel B, it is day 0 turnover, and in Panel C day +5 turnover. In each panel, we report separate regressions for Nasdaq and NYSE/Amex listed stocks.

In row 1 of Panel A, the prior-year return, market value, and prior-day turnover are all positive and statistically significant in explaining day −5 turnover. The same general pattern obtains when only Nasdaq firms (row 2) are included in the regression. In row 3 (only NYSE/Amex firms) just the prior-day turnover is statistically significant. The coefficient on the positive event dummy is not significant in any of the three regressions.

Panel B reports that, after controlling for prior returns, market value, prior-day turnover, and exchange listing, new issues have significantly higher day 0 turnover while positive event firms have significantly lower turnover. These results hold whether the sample is all firms, only Nasdaq firms, or only NYSE/Amex firms. The size of the new issues dummy variable is economically important. New issues have a 164 basis point higher day 0 turnover than non-issuers. The R^2 values are much lower in the day 0 turnover regressions (about 0.18) compared to the average of

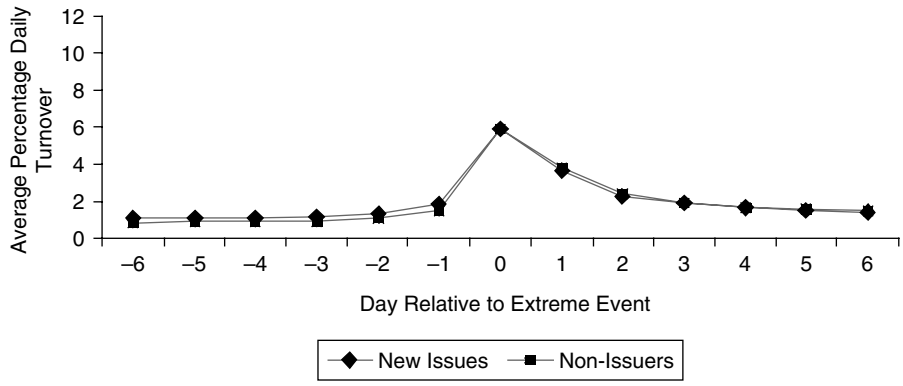

Fig. 3. Panel A: average percentage daily turnover surrounding the extreme positive event.

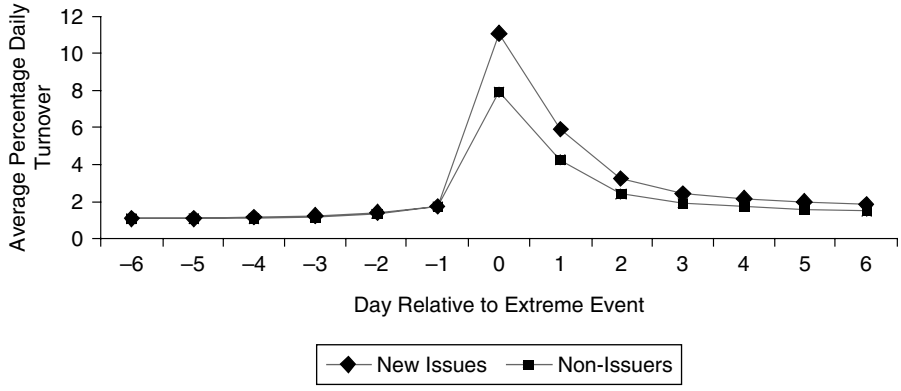

Fig. 3. Panel B: average percentage daily turnover surrounding the extreme negative event.

about 0.38 in the Panel A regressions. The day +5 turnover regressions (Panel C) report that 5 days after the extreme event, new issues experience the same turnover as non-issuers whether the sample is restricted to only Nasdaq or to NYSE/Amex firms.

Table 7 reports the regression results using excess 3-year return as the dependent variable. The Fama-French industry returns provide the return benchmark. In the first regressions, the explanatory variables are day 0 turnover, a new issues dummy, a positive event dummy, the natural logarithm of market value, and yearly dummies. Yearly dummies for calendar years 1984 through 2001 are included in the regression but are not reported.

In row 1 of Table 7, all the reported variables are statistically significant. Day 0 turnover has a negative coefficient, which implies that the higher the divergence of opinion among traders (i.e., day 0 turnover), the poorer the subsequent stock returns.[5] The new issues dummy has a negative sign, consistent with our earlier evidence that

[5]We conduct the same regression using a measure of unexpected day 0 turnover. Specifically, we calculate the difference between day 0 turnover and the average of day −5 through day −3 turnover. Using this measure of unexpected turnover, the regression coefficient is essentially unchanged.

Table 6

Regressions of turnover on new issues dummy, positive event dummy, prior 1-year return, log of market value, prior day turnover, and a Nasdaq dummy.

Panel A: Dependent variable is day −5 turnover

Row	Sample	Intercept	New issues dummy	Positive event dummy	Prior 1-year return	Log (mkt value)	Prior day turnover	Nasdaq dummy	$R^2_{adj.}$
(1)	All Firms	0.05	0.06	0.00	0.13	0.05	0.62	−0.03	0.389
	(N = 11,534)	(0.42)	(1.85)	(0.07)	(5.30)	(2.80)	(11.12)	(−0.76)	
(2)	Only Nasdaq Firms	−0.15	0.08	0.02	0.14	0.09	0.58	–	0.425
	(N = 8,459)	(−1.79)	(2.07)	(0.62)	(5.14)	(3.97)	(9.86)		
(3)	Only NYSE/Amex Firms	0.34	−0.03	−0.04	0.06	−0.00	0.74	–	0.329
	(N = 3,075)	(1.27)	(−0.39)	(−0.41)	(1.57)	(−0.15)	(6.96)		

Panel B: Dependent variable is day 0 turnover

Row	Sample	Intercept	New issues dummy	Positive event dummy	Prior 1-year return	Log (mkt value)	Prior day turnover	Nasdaq dummy	$R^2_{adj.}$
(1)	All Firms	3.73	1.64	−3.40	0.20	0.95	0.84	−2.28	0.187
	(N = 11,505)	(8.86)	(9.23)	(−18.63)	(2.01)	(15.15)	(14.71)	(−9.79)	
(2)	Only Nasdaq Firms	0.21	1.51	−3.74	0.19	1.28	0.77	–	0.201
	(N = 8,429)	(0.52)	(7.98)	(−18.23)	(1.65)	(15.47)	(12.31)		
(3)	Only NYSE/Amex Firms	5.39	1.55	−2.44	0.21	0.52	1.10	–	0.144
	(N = 3,076)	(8.13)	(3.94)	(−6.36)	(1.31)	(5.53)	(9.61)		

Panel C: Dependent variable is day + 5 turnover

Row	Sample	Intercept	New issues dummy	Positive event dummy	Prior 1-year return	Log (mkt value)	Prior day turnover	Nasdaq dummy	$R^2_{adj.}$
(1)	All Firms	0.00	0.03	−0.01	0.11	0.07	0.71	−0.07	0.491
	(N = 11,539)	(0.03)	(0.66)	(−0.19)	(3.26)	(3.44)	(16.40)	(−1.25)	
(2)	Only Nasdaq Firms	−0.23	0.04	−0.06	0.10	0.10	0.73	–	0.523
	(N = 8,464)	(−2.05)	(0.75)	(−1.13)	(2.66)	(3.65)	(13.67)		
(3)	Only NYSE/Amex Firms	0.35	−0.03	0.13	0.09	0.03	0.66	–	0.387
	(N = 3,075)	(2.10)	(−0.31)	(1.54)	(1.71)	(0.95)	(12.92)		

$$\text{Event Day Turnover}_{ij} = a_{0j} + a_{1j}\text{New Issues Dummy}_{ij} + a_{2j}\text{Positive Event Dummy}_{ij} + a_{3j}\text{Prior } 1-\text{Year Return}_{ij} + a_{4j}\text{Log(Market Value)}_{ij} + a_{5j}\text{Prior Day Turnover}_{ij} + a_{6j}\text{Nasdaq Dummy}_{ij} + e_{ij}$$

The extreme event sample consists of new issues (IPOs and SEOs) that first experienced a one-day market-adjusted return of at least +/−15% during 20 trading days after the equity offer to the third-year anniversary of the offering date. The non-issue sample includes firms with at least five years on the CRSP tapes that have not issued an SEO in the last five years. Turnover is defined as trading volume divided by shares outstanding. Firms listed on the NYSE/Amex have their trading volume doubled to allow a proper comparison with firms listed on Nasdaq. The positive event dummy takes on a value of one (zero otherwise) if the firm experienced a one-day market-adjusted return of at least 15%. Log(Mkt Value) is defined as the natural logarithm of the market capitalisation (shares outstanding multiplied by the stock price) two days prior to the extreme event, expressed in millions of dollars. The Nasdaq dummy takes on a value of one (zero otherwise) if the firm is listed on Nasdaq. All t-statistics are heteroskedasticity-consistent and are given in parentheses.

Table 7

Regressions of stock market performance on turnover metrics surrounding the extreme event.

Row	Intercept	Day 0 turnover	Average of day 0 to day +5 turnover	New issues dummy	Positive event dummy	Log (mkt value)
(1)	−12.84	−0.30		−10.08	7.05	2.54
	(−1.86)	(−2.48)		(−3.30)	(2.07)	(2.41)
(2)	−12.71		−1.46	−9.81	6.63	2.96
	(−1.84)		(−4.58)	(−3.20)	(1.94)	(2.78)

$$\begin{aligned}\text{Excess 3} - \text{Year Return}_{ij} = {} & a_{0j} + a_{1j}\text{Day 0 Turnover}_{ij} + a_{2j}\text{New Issues Dummy}_{ij} \\ & + a_{3j}\text{Positive Event Dummy}_{ij} + a_{4j}\text{Log(Market Value)}_{ij} \\ & + \text{Year Dummies 1984 through 2001} + e_{ij}\end{aligned}$$

The extreme event sample consists of new issues (IPOs and SEOs) that first experienced a one-day market-adjusted return of at least +/−15% during 20 trading days after the equity offer to the third-year anniversary of the offering date. The non-issuers sample includes firms with at least five years on the CRSP tapes that have not issued an SEO in the last five years. Firms listed on the NYSE/Amex have their trading volume doubled to allow a proper comparison with firms listed on Nasdaq. Returns are excess the Fama-French (1997) four-digit SIC industry portfolio returns. Day 0 turnover is defined as trading volume on the extreme event day divided by shares outstanding. Average day 0 through day +5 turnover ratio is calculated as the sum of day 0 through day +5 turnover divided by six. Positive event dummy takes on a value of one (zero otherwise) if the firm experienced a one-day market-adjusted return of at least 15%. Log(Mkt Value) is defined as the natural logarithm of the market capitalisation (shares outstanding multiplied by the stock price) two days prior to the extreme event, expressed in millions of dollars. All yearly dummies (except for calendar year 1983) are included in the regression but are not reported. All t-statistics are heteroskedasticity-consistent and are given in parentheses.

new issues have weaker subsequent stock performance than non-issuers that experience an extreme event. Both the positive event dummy and the log(market value) have significantly positive coefficients. That is, negative extreme event firms turn in poorer stock performance than positive event firms after adjusting for other factors. Also, larger firms have higher subsequent stock returns than smaller firms.

For another measure of divergence of opinion, the second row of Table 7 reports the regression results using a new explanatory variable, the average of day 0 to day +5 turnover. We know there are higher levels of trading in the days after the extreme event than in the days prior to the event. By taking an average over the 6-day period, we produce an enhanced measure of divergence of opinion. The coefficient on the average 6-day turnover variable is sharply negative (t-statistic of −4.58). The coefficient value of −1.46 is much higher than the day 0 turnover coefficient of −0.30 reported in row 1. Hence, the regressions report that higher levels of divergence of opinion directly relate to poorer stock performance in the 3-year period after the extreme event.

4. Conclusion

Our purpose is to enhance understanding of how financial markets process new information. To do this we combine extreme event days with a measure of divergence

of market opinion on those days. First, we want to isolate the first day that the market processes a significant piece of news about a firm (at least a +/−15% return). Second, if there is a divergence of opinion in the market for a particular stock, we feel it should be revealed on the extreme event day when investors are processing the news. We then examine the link between high levels of divergence of opinion (in the form of turnover) and subsequent stock performance.

The results indicate that financial markets appear to do a poor job with regard to the information incorporated in the extreme event. Unlike non-issuers (firms with at least five prior years in the CRSP tapes that had not issued an SEO in the last five years), both positive and negative event new issues fall substantially short of the predictions of the four-factor model.

The generally low stock returns of new issues cannot explain our results. Our sample of extreme event new issues also statistically underperforms non-event new issues in the period following the event. The poor performance of new issues tends to be clustered among firms that experienced an extreme return in the period following the equity issuance. While it has been shown that new stock offerings by small growth firms tend to do poorly in the long run, our poor performance results are present even after we remove all growth firms from analysis.

We conclude that the poor performance following extreme events occurs because there is wide divergence of opinion among investors. We use turnover (trading volume scaled by shares outstanding) as a measure of heterogeneous investor beliefs. Our sample of new issues experiences on average much higher levels of turnover than the non-issuer sample. We find a direct link between higher levels of divergence of opinion and poor stock performance, after adjusting for various factors. Future returns are even worse for firms that experience high levels of turnover both on the extreme event day and in the subsequent few days.

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