December Doldrums, Investor Distraction, and Stock Market Reaction to Unscheduled News Events

Sudheer Chava Nikhil Paradkar*

Georgia Institute of Technology

Abstract

We document that the stock market's reaction to unscheduled firm-specific news such as credit rating downgrades and 8-K filings is significantly weaker during December as compared to other months. In contrast, the market's reaction to scheduled earnings announcements is not significantly different in December. We find a similar pattern for trading volume. However, prominent firms, such as larger firms, firms with higher analyst following, or higher institutional ownership, are less susceptible to this *December distraction* effect. Our results highlight how investor distraction during the December holiday season can lead to a muted market reaction to unscheduled, but salient, firm-specific news.

JEL Classification: G02, G12, G14, G24

Keywords: Investor inattention; unscheduled events; credit ratings; 8-K filings

*Sudheer Chava can be reached at sudheer.chava@scheller.gatech.edu (Phone: (+1) 404-894-4371). Nikhil Paradkar can be reached at nikhil.paradkar@scheller.gatech.edu (Phone: (+1) 404-385-1391). We thank Zhi Da, Jeffrey Hales, Rohan Ganduri, Badrinath Kottimukkalur, Alok Kumar, Daniel Weagley, Xiaofei Zhao, Manpreet Singh, Avanidhar Subrahmanyam, the program committees of the 2017 Australasian Finance and Banking Conference, the 2017 Auckland Finance Meeting, and the 2018 American Finance Association Doctoral Poster Session, and seminar participants at the Georgia Institute of Technology for helpful comments and suggestions.

I. Introduction

In the United States, the winter holiday season is nearly three times as long as the next longest one (Thanksgiving) and typically more than 100 million people take long distance trips (a destination 50 miles or more away from the point of origin) during this period.[1] However, major stock exchanges in the U.S. are closed only on Christmas Day, making December comparable to other months with officially recognized holidays, such as May (Memorial Day), July (Independence Day), and September (Labor Day), among others. If holidays and personal travel distract investors and potentially lower the quality of their decision making, their response to salient firm-specific information could be muted, and may be more so for unscheduled announcements. In this paper, we study whether there is investor inattention in December by analyzing their responses to earnings releases (scheduled), as well as credit rating downgrades and 8-K filings (unscheduled).

It is possible that investors, especially institutional investors, take scheduled firm-specific news releases into account when making December travel plans. On the other hand, by definition, they cannot take unscheduled firm-specific news into consideration. Consistent with this, we show that news-searching and news-reading activity for Russell 3000 stocks on Bloomberg terminals is significantly lower in December relative to other months. Moreover, we find that only credit rating downgrades and 8-Ks released in December generate weak institutional attention. Pre-scheduled earnings announcements released in December generate institutional attention that is not significantly different relative to comparable news released in other months. Thus, December is an attractive setting to analyze investor attention to salient firm-specific news.

We focus on three important firm-specific news releases that generate significant market reaction: earnings announcements, credit rating downgrades, and 8-K filings. Earnings announcements are pre-scheduled, but they are not uniformly distributed across different months of the year. The dates of credit rating changes by a third party credit rating agency are not publicly known in advance, but they generate significant market responses (Jorion, Liu, and Shi, 2005; Chava, Ganduri, and Ornthanalai, 2015). Following material events such as bankruptcy, executive turnover, and acquisition/disposition of assets, public firms are required to file an 8-K form within four business days, and these filings have been documented to generate a significant stock price response (Zhao, 2016). The combination of credit rating changes and 8-K filings captures a broad range of firm-specific unscheduled events. Unlike earnings news, credit rating changes and 8-K filings are equally distributed across all months of the year.

We start with a comprehensive sample of earnings announcements for firms in the Compustat-CRSP intersection between January 1996 and December 2015. Earnings news is relatively less likely to occur in months corresponding to calendar quarter ends and companies announcing earnings news in December (and other months corresponding to calendar quarter ends) may differ on some unobservable dimensions from companies announcing in the other eight months

[1]Source: The Bureau of Transportation Statistics (BTS), http://www.transtats.bts.gov/holidaydelay.asp.

of the year. So, following DellaVigna and Pollet (2009), we construct a "homogeneous" sample of firms that release 5% to 95% of their earnings news in December. We find that earnings news released in December generates an immediate price reaction that is not significantly different from earnings news of similar surprise magnitude released in other months of the year. These results indicate that investors do not seem to be distracted in December when reacting to scheduled firm-specific announcements.

Next, we use rating change announcements from three major credit rating agencies – Standard and Poor's, Moody's, and Fitch – and analyze the relation between cumulative abnormal returns (CAR) using the market model and announcements of credit rating changes. We find that stock markets react significantly negatively to downgrades but insignificantly to upgrade announcements, in line with the literature (Holthausen and Leftwich, 1986; Chava, Ganduri, and Ornthanalai, 2015). Consistent with the hypothesis of limited investor attention during the December holiday season, we find that downgrades announced in December are met with an immediate stock price reaction that is 44% weaker relative to downgrades announced in other months. Congruently, we find that while 8-K filings (which encompass different types of corporate events of varying importance) generate a significant *absolute* immediate price response, this absolute response is 11% weaker for December 8-K filings relative to filings occurring in other months. We also create a sentiment measure for all 8-K filings, and note that the immediate price response to December filings is 27% weaker relative to comparable non-December filings. These findings are robust to the inclusion of several standard rating-level, 8-K-level, and firm-level controls.

A potential first order concern with our analysis so far is whether there is a selection bias in December announcements. Following Michaely, Rubin, and Vedrashko (2016), we split the firms in our sample into two groups: those firms experiencing at least one unscheduled event in December and those firms that never experience any such events in December. Our results show that the December announcement effect is distinct from the effect of simply being a December announcer, mitigating selection bias concerns. Further, credit rating changes are announced by third party credit rating agencies and 8-Ks are required to be filed within four business days of a material event. Thus, it is not possible for a firm to strategically time the release of these announcements, especially credit rating announcements, making them "unscheduled" from the perspective of both the firm and investors. On the other hand, firms have significantly greater discretion in controlling the information flow for the scheduled announcements studied in Michaely, Rubin, and Vedrashko (2016) and Cohen, Lou, and Malloy (2017), which can result in selection bias.

We also conduct a matched-sample analysis to match firms experiencing unscheduled events in December to those experiencing such events in other months. This matching takes place along several salient characteristics, and mitigates any concerns that there are differences in observable dimensions between firms experiencing unscheduled events in December and those experiencing such events in other months. We find that our results documenting the muted price

reaction to December rating downgrades and 8-K filings continue to hold in a matched-sample of unscheduled events.

Our results are also robust to the use of alternative econometric specifications, and to alternative definitions of CARs. Our baseline regressions include Fama-French 48 (FF48) industry- and year-fixed effects, with standard errors clustered at the firm level. Our results are robust to Fama-French 12 (FF12) industry-fixed effects, as well as industry $\times$ year-, firm-, quarter-, and year $\times$ quarter-fixed effects. In addition, our results are also robust to clustering standard errors at the event date or event month level, as well as double clustering along the firm and event date or the firm and event month dimensions. Finally, our results are unaffected if we define CARs using the market model, or as the difference between the buy-and-hold return of the announcing firm and that of a size, book-to-market, and momentum matching portfolio as described in Daniel, Grinblatt, Titman, and Wermers (1997).

We also analyze the post-announcement drift in response to unscheduled news releases in December. However, the presence of the anomalous January effect (Rozeff and Kinney, 1976) contaminates the negative drift in response to rating downgrades. We find that relative to January downgrades, December downgrades generate a negative post-announcement drift that is approximately one-and-a-half times stronger. We find similar results for December 8-K filing returns as compared to January filings. These results suggest that there is some longer horizon correction for the immediate muted price reaction to unscheduled news releases in December.

Consistent with the muted price reaction results documented above, we also find that December downgrades and 8-K filings are met with a muted immediate turnover reaction. We use the cumulative abnormal stock turnover measure, as defined in Llorente, Michaely, Saar, and Wang (2002), and show that there is a muted turnover response to unscheduled firm announcements in December relative to similar news released in other months. Taken together, the muted price and volume reactions help us conclude that there is a muted market reaction to unscheduled news released in December.

We next find that the entire December distraction effect towards downgrades is driven by downgrades announced in the latter half of the month. Congruently, we find that the price underreaction is stronger for 8-Ks filed after December 15. These findings suggest that investor inattention is more pronounced closer to Christmas Day and New Year's Eve. Moreover, we find that the rating downgrades of prominent firms, as determined by size, analyst following, and institutional ownership, are less susceptible to the December effect. A consistent inference is reported for 8-K filings, where the effect is also moderated by the frequency with which firms file 8-Ks. These results indicate that a firm's information environment can temper the December effect.

A downgrade from investment grade to non-investment grade is more material for firms and impacts their cost of capital significantly (Kisgen, 2007). Interestingly, we find that the December effect towards downgrades is concentrated in firms whose bonds cross the investment grade-speculative grade boundary, which suggests investors pay less attention even when

downgrades have significant impact on the affected firms. Our results are also not driven by any specific materials events, which trigger 8-K filings. However, we do find that longer 8-K filings are subject to a stronger distraction effect, consistent with the view of longer documents containing more information and detail, and thus being harder to process (Loughran and McDonald, 2014), which ultimately results in larger deviations from firm fundamental value (Hwang and Kim, 2017).

One possible concern is that our results are driven entirely by positive investor sentiment, rather than distraction, during December. Investor sentiment (or mood) can affect trading decisions (Bassi, Colacito, and Fulghieri, 2013; Goetzmann, Kim, Kumar, and Wang, 2014; Kaustia and Rantapuska, 2016), firm-level managerial behavior (Chhaochharia, Kim, Korniotis, and Kumar, Forthcoming), individual consumption patterns (Agarwal, Chomsisengphet, Meier, and Zou, 2017), and even aggregate stock markets (Hirshleifer and Shumway, 2003; Edmans, Garcia, and Norli, 2007). In addition, Frieder and Subrahmanyam (2004) document that S&P 500 index returns are influenced by the festive nature of St. Patrick's Day and Rosh Hashanah, and the solemn nature of Yom Kippur. Christmas-induced positive sentiment could explain why stock markets fail to adequately penalize December downgrades. However, we find that the price reaction to December 8-K filings relaying positive news is also muted, which is inconsistent with the "positive mood" hypothesis, but consistent with the December distraction hypothesis.

Our findings are distinct from the summer distraction effect studied in Hong and Yu (2009). There appear to be no significant differences in the price and volume responses to rating downgrades and 8-K filings released during the summer relative to non-summer months. Moreover, our results are not driven by "information overload" (Hirshleifer, Lim, and Teoh, 2009) or by investors being distracted because of aggregate market movements (Kottimukkalur, 2017), since both downgrades and 8-Ks released on low information overload days and low market moving days in December, respectively, are subject to the December effect.

Our study is broadly related to models of investor neglect of publicly available accounting information, which results in mispricing (Hirshleifer and Teoh, 2003; DellaVigna and Pollet, 2009). DellaVigna and Pollet (2009) document that investors underreact to both positive and negative earnings surprises on Fridays, which is corrected in the post-announcement horizon. Ben-Rephael, Da, and Israelsen (2016) document that the price drifts following earnings announcements and analyst recommendation changes are predominantly driven by announcements where institutional investors fail to pay sufficient attention.

Our paper also contributes to the literature on proxies for investor inattention – events occurring on Fridays (DellaVigna and Pollet, 2009; Louis and Sun, 2010; Michaely, Rubin, and Vedrashko, 2016), non-trading hours (Francis, Pagach, and Stephan, 1992; Bagnoli, Clement, and Watts, 2005), and down-market periods (Hou, Xiong, and Peng, 2009) – by identifying a new inattention proxy: the winter holiday season. Unlike prior work that focused mostly on investor distraction towards scheduled earnings news, our findings highlight the difference between scheduled news, which firms can strategically release, and unscheduled news, which

firms have no control over, and compares the importance of both types of news in determining investor inattention.

The rest of the paper is organized as follows. In Section II and Section III, we describe the data and the methodology used to calculate abnormal market responses, respectively. Our main empirical tests and robustness checks are presented in Section IV. In Section V, we present results of comparative statics. Finally, we conclude in Section VI.

II. Data

In this section, we discuss the sources used to construct our data.

A. Earnings Surprises

We calculate earnings surprises using quarterly earnings announcement data gathered from the Institutional Brokers' Estimate System (IBES) covering the period from January 1, 1996 to December 31, 2015. To estimate the forecast error as a measure of the earnings surprise ($ES_{i,t}$), we calculate the difference between announced earnings per share as reported by IBES ($EPS_{i,t}$) and the consensus earnings per share forecast (*Forecast(*$EPS_{i,t}$*)*). The consensus forecast is defined as the median of the most recent forecasts from individual analysts using the IBES detail tape. This difference is scaled by the stock price at the end of the corresponding quarter ($P_{i,t}$). The earnings surprise for any given firm's quarterly announcement is described by:

$$ES_{i,t} = \frac{EPS_{i,t} - Forecast(EPS)_{i,t}}{P_{i,t}}. \tag{1}$$

We only include analyst forecasts issued or reviewed in the 90 days prior to the earnings announcement date to exclude the effects of stale forecasts on the consensus (median) forecast. While $EPS_{i,t}$ and $P_{i,t}$ are unadjusted for stock splits, we adjust *Forecast(*$EPS_{i,t}$*)* for any stock splits and stock dividends that occur in the 90 days prior to the earnings announcement date. Also, if an analyst makes multiple forecasts for any firm during that period, we only consider the most recent forecast. Hereafter, we refer to earnings announcements that meet or beat the earnings forecast as *positive* earnings surprises and earnings announcements that fail to meet the earnings forecast as *negative* earnings surprises. Consistent with the literature, we find that positive earnings surprises are more common than negative ones for one-quarter-ahead forecasts (Burgstahler and Dichev, 1997; Degeorge, Patel, and Zeckhauser, 1999; Bartov, Givoly, and Hayn, 2002). Overall, we identify 241,069 unique earnings announcements with valid associated earnings surprises and non-missing stock price responses between January 1, 1996 and December 31, 2015.

B. Credit Ratings

The data on bond ratings are from the Mergent Fixed Income Securities Database (FISD). FISD provides detailed bond information at the issue level for nearly 150,000 corporations, U.S.

agencies, and U.S. Treasury debt securities. For our analysis, we only consider the ratings issued by the top three Nationally Recognized Statistical Rating Organizations (NRSROs): Standard & Poor's, Moody's, and Fitch. The sample is restricted to U.S. domestic corporate debentures, and excludes Yankee bonds, as well as bonds issued through private placements, preferred stocks, and trust preferred capital. We also exclude convertible bonds, mortgage-backed bonds, and bonds traded with credit enhancements. Finally, we only consider bonds whose stocks are traded on either the NYSE, AMEX, or NASDAQ. Consistent with Chava, Ganduri, and Ornthanalai (2015), we find that approximately 18% of all ratings are from Fitch, with the remaining split evenly between S&P and Moody's.

We consider any rating change issued by a credit rating agency (CRA) as one observation. When a CRA provides credit rating changes for multiple bonds of a single issuer on the same day, we use the issue that experiences the greatest absolute rating change because such changes are likely to generate the strongest market reaction. Our focus is on rating change announcements that are associated with either "DNG" (downgrades) or "UPG" (upgrades). The final sample of rating events covers the period from January 1, 1996 to December 31, 2015 and consists of 5,667 downgrades and 3,096 upgrades. Consistent with the findings in Dichev and Piotroski (2001), we note that there are approximately two downgrades for every upgrade.

C. 8-K Filings

We use the Electronic Data Gathering, Analysis, and Retrieval (EDGAR) system provided by the U.S. Securities and Exchange Commission (SEC) to identify all 8-K filings between January 1, 1996 and December 31, 2015. EDGAR performs automated collection, validation, and indexing of submissions by firms who are required to file forms with the SEC. Its primary purpose is to "increase the efficiency and fairness of securities markets for the benefit of investors, corporations, and the economy."[2]

We identify approximately 1.3 million unique 8-K filing events. We match these 8-K filings to the merged CRSP-Compustat database on the basis of historical CIK values, and identify 686,627 filings that generate valid stock price responses. This latter subset of 8-K filings is then parsed to identify the event that triggered the current report filing. The events that could trigger a report filing are classified into seven broad categories of triggering events: (1) information regarding the registrant's business and operations, (2) registrant's financial information, (3) matters related to the trading of securities, (4) matters related to accountants and financial statements, (5) corporate governance and management, (6) matters related to asset-backed securities, (7) events related to Regulation FD, and (8) other material events considered important by the firm. For the subset of 8-K filings that generate valid stock price responses, we identify the triggering event in 99.5% of all records.

[2]http://edgar.sec.gov/edgar/aboutedgar.htm.

D. *Institutional Ownership*

The CDA/Spectrum 13f Institutional Holdings database from Thomson Reuters is used to determine the total number of institutional owners in a firm for any given quarter between January 1, 1996 and December 31, 2015.[3] For every firm experiencing an unscheduled news event, we identify the total number of institutional owners in the firm in the quarter prior to the event. When we are unable to identify the number of institutional owners for any firm in the quarter preceding the credit rating change, the institutional ownership in that firm is determined to be zero.

E. *Abnormal Institutional Attention*

Our measure of institutional attention is gathered from Bloomberg. Given that there are only about 320,000 Bloomberg subscriptions worldwide, and annual subscriptions cost approximately $24,000 per machine for a two-year lease, these terminals are more likely to be used by institutional investors than retail investors (Ben-Rephael, Da, and Israelsen, 2016). Bloomberg creates this attention measure by recording the number of times news articles for a particular stock are accessed by users, as well as the number of times users actively search for news regarding a specific stock in a given hour. However, these raw hourly counts or scores are not made available to researchers. Instead, Bloomberg transforms these scores using the following methodology: for any given stock, a value of 1 is assigned to each article read and a value of 10 is assigned for each news search involving said stock. These numbers are aggregated into hourly counts, which are then used to create a numerical attention score each hour by comparing the average hourly count during the previous eight hours to all hourly counts over the previous month for the same stock. A score of 0 is assigned if the rolling average is less than 80% of the hourly counts over the previous 30 days. Similarly, scores of 1, 2, 3, or 4 are assigned if the average is between 80% and 90%, 90% and 94%, 94% and 96%, or over 96% of the previous 30 days' hourly counts, respectively. As a final step, these hourly counts are aggregated up to the daily frequency by taking the maximum of all hourly scores throughout the day.

Due to data limitations, we only have access to this institutional attention measure beginning from February 2010. We gather this institutional attention information for all stocks listed on the Russell 3000 between February 2010 and December 2015. To capture the left tail of the distribution, we set our abnormal institutional attention (AIA) measure dummy variable to 1 if the Bloomberg provided daily maximum is 0 or 1, and 0 otherwise. Thus, our AIA dummy captures the absence of institutional investor attention for any particular stock during any particular day and mirrors the presence of institutional attention, as measured by Ben-Rephael, Da, and Israelsen (2016).

[3]For each firm, institutional ownership data from any quarter is copied over to the subsequent quarter if the latter has missing observations. This can be done without biasing the results since we can reasonably assume that institutional ownership does not fluctuate widely across quarters.

F. Firm-level Control Variables

Finally, we use Compustat Quarterly and the Center for Research in Security Prices (CRSP) to develop various measures of firm-level controls for our regressions. All of our measures are adjusted for inflation and winsorized at the 0.5% tails. A full listing of all the controls we use, along with detailed descriptions of their construction, is provided in Appendix A.

III. Calculating Abnormal Market Reactions

In this section, we describe the methodology used to calculate abnormal market reactions to firm-specific events.

A. Cumulative Abnormal Returns

We study changes in daily abnormal stock returns on the date of scheduled and unscheduled news events. When calculating the immediate reaction to either type of announcement, the daily abnormal stock return for firm i on day t ($AR_{i,t}$) is defined as the residual estimated from the market model:

$$AR_{i,t} = R_{i,t} - (\hat{\alpha}_i + \hat{\beta}_i R_{m,t}). \tag{2}$$

Here, $R_{i,t}$ is the raw return for firm i on day t, and $R_{m,t}$ is the value-weighted index return of stocks listed on the NYSE, AMEX, and NASDAQ. We estimate the model coefficients, $\hat{\alpha}_i$ and $\hat{\beta}_i$, using a rolling window over a period of 255 days from -91 to -345 calendar days relative to the event date. We define an event date as the earnings announcement date, the rating change date, or the 8-K filing date.

We examine how the reaction to a salient firm-specific announcement differs depending on the information environment in which it is announced. In order to study how the month in which announcements are made affect the market's immediate reaction, we compute the cumulative abnormal returns ($CAR_{i,t}$) using the three-day window centered on the event date. That is,

$$ImmediateReaction = CAR_i[-1,+1] = \sum_{t=-1}^{1} AR_{i,t}. \tag{3}$$

Kothari and Warner (2007) show that short-horizon studies, such as ours, are not highly sensitive to an assumption of the cross-sectional or time series dependence of abnormal returns, or the benchmark model used for computing abnormal returns.

We are also interested in studying the market's post-announcement reaction to firm-specific announcements. To do so, we define CARs over the window [+2,+61] in trading days relative to the announcement date. Our choice of the post-announcement window covers approximately three calendar months. We adjust the returns by subtracting the returns of a size, book-to-market (B/M), and momentum matching portfolio over the same window. We accomplish this by matching each stock with one of 125 size-B/M-momentum portfolios. These portfolios are constructed using the methodology described in Daniel et al. (1997).

B. *Cumulative Abnormal Volume*

Investor reaction can also be measured using the trading volume response to firm-specific announcements. Following Llorente et al. (2002), we use daily turnover as a measure of trading volume for individual stocks. A stock's turnover on any given day is defined as the number of shares traded on that day divided by the number of shares outstanding.[4] Due to the non-stationarity of the daily time series of turnover, we measure the turnover in logs, detrend the resulting series, and scale by the standard deviation. To avoid the problem of zero daily trading volume, we add a small constant ($C = 2.55 \times 10^{-6}$) to the turnover before taking logs.[5]

Thus, the abnormal stock turnover on day j relative to the announcement date t is the normalized difference between the log turnover on day j and the average log turnover over trading days [-11,-71] relative to t scaled by the standard deviation of daily logged turnover over the same window:

$$ATO_{i,j} = \frac{Log(TO_{i,t+j} + C) - \frac{1}{60}\sum_{k=t-71}^{t-11} Log(TO_{i,t+k} + C)}{\sqrt{\frac{1}{60}\sum_{k=t-71}^{t-11}(Log(TO_{i,t+j} + C) - \frac{1}{60}\sum_{k=t-71}^{t-11} Log(TO_{i,t+k} + C))^2}}. \quad (4)$$

Similar to the calculation of CARs, we perform regression analyses of the abnormal stock turnover over the three-day window centered on the date of the firm-specific announcement (CATO[-1,+1]). Our results are unchanged if we define cumulative abnormal trading volume using the number of shares traded on a given day as a measure of trading volume.

IV. Does a December Effect Exist?

In this section, we present empirical evidence which suggests that investors are distracted during the winter holiday season and that these results are robust to selection bias and other similar econometric concerns.

A. *Univariate Results*

A.1. Price Response to Scheduled News Events

Table I presents summary statistics regarding earnings announcements during the January 1, 1996 to December 31, 2015 sample period. Only earnings announcements with valid earnings surprises are included in the data. Panel A displays the distribution of earnings announcements across different months of the year. We find that earnings announcements are much less likely to occur in months coinciding with calendar quarter ends; only about 8% of all earnings announcements occur in March, June, September, and December, with the remaining 92% occurring in other months of the year.

[4] A theoretical justification for using turnover as a measure of trading volume is discussed in Lo and Wang (2000).

[5] The value of the constant helps bring the distribution of daily trading volume closer to a normal distribution. See Richardson, Sefcik, and Thompson (1986), Ajinkya and Jain (1989), and Cready and Ramanan (1991) for a detailed explanation.

We sort the standardized unexpected earnings (earnings surprises) into quintiles at the calendar quarter frequency and present the results in Panel B of Table I. Sub-Panel B.1 displays the average earnings surprise across different quintiles. By construction, the average earnings surprise is most negative in the bottom quintile and most positive in the top quintile. There appears to be no clear or monotonic difference between December and non-December earnings announcements. Sub-Panel B.2 presents the average immediate price reactions to earnings announcements across various quintiles. We find that the immediate price reaction towards both negative earnings surprises (bottom quintile) and positive earnings surprises (top quintile) is strongest (in absolute terms) in December. Thus, the evidence suggests that the December effect does not appear to hold for scheduled firm-specific news announcements.

A.2. Price Response to Unscheduled News Events

The univariate results in Table II provide preliminary evidence of the existence of the December effect towards unscheduled firm-specific news. Panel A displays the distribution of rating events and 8-K filings across different months. Only rating events and 8-K filings with non-missing abnormal price reactions are included in the sample. We find that downgrade announcements, upgrade announcements, and 8-K filings are quite evenly distributed across all months of the year. Unlike earnings announcements, there appears to be no seasonality in the release of unscheduled news.

In Panel B of Table II, we report the immediate stock price reaction to rating change announcements and 8-K filings, distinguished by the month in which the announcement takes place. For rating changes, the immediate reaction is defined as the CARs over the three-day window centered on the rating change date. Consistent with the findings of both Jorion et al. (2005) and Chava et al. (2015), Sub-Panel B.1 shows that overall, stock prices react immediately to downgrades (-3.92%) but only weakly immediately to upgrades (0.15%). We also find that the mean CAR for rating downgrades announced across all months, except December, is -4.13% and significantly different from zero at the 1% level. On the other hand, the immediate reaction to downgrades announced in December is -1.56%. This 2.58% difference between these two groups is statistically significant at the 1% level. In effect, the immediate price response to downgrade announcements in December is approximately 62.5% (2.58/4.13) weaker than that to downgrades in other months of the year. We do not find evidence suggesting that stock prices react significantly differently in the short-run period to rating upgrades announced in December relative to upgrades announced in other months.

Sub-Panel B.2 reports the results of how the stock price response to 8-K filings differs depending on the month in which the filing occurs. While we are able to parse out the event triggering the 8-K filing, we can't precisely determine whether the news relayed by the filing is positive or negative.[6] Thus we examine the *absolute* CARs in the three-day window centered

[6]In later analyses, we construct a sentiment measure for the text in 8-Ks using the words list in Bodnaruk, Loughran, and McDonald (2015).

on the date of the filing. In column (I) of Sub-Panel B.2, we find that 8-Ks filed in months other than December generate an absolute immediate return of 4.65% compared to an absolute immediate return of 4.46% for 8-Ks filed in December. This difference of -0.19% is strongly significant at the 1% level. Thus, 8-Ks filed in December generate an absolute immediate price response that is approximately 4% (0.19/4.65) weaker than that to material events filed with the SEC in other months. In columns (II) and (III), we subset the data to focus on 8-K filings that generated immediate negative and immediate positive price responses, respectively. We note a muted price reaction at both ends – the filing of 8-Ks generates weak immediate price reactions to both positive and negative events if they are filed in December relative to other months.

Overall, the evidence from Table II suggests that the December effect *does* hold for unscheduled news events, such as the announcement of credit rating changes and the filing of 8-Ks. However, preliminary evidence from Table I suggests that the December effect *does not* hold for scheduled firm-specific news, such as earnings announcements.

B. Multivariate Analysis

B.1. Price Response to Scheduled News Events

In this subsection, we use multivariate regressions to control for factors that could affect the immediate stock price reaction to earnings announcements. The OLS specification considered is:

$$\begin{aligned} CAR[-1,+1]_{i,t} = \beta_0 &+ \beta_1 dDecember_{i,t} + \beta_2 dTopSUEQuintile_{i,t} \\ &+ \beta_3 dDecember_{i,t} \times dTopSUEQuintile_{i,t} \\ &+ \sum \gamma_{i,t} Controls_{i,t} + \epsilon_{i,t}, \end{aligned} \tag{5}$$

where *dDecember* is an indicator variable that equals one if the earnings announcement takes place in December, and zero otherwise and $CAR[-1,+1]_{i,t}$ is the abnormal stock return for firm i announcing earnings at time t. The sample only includes observations from the top and bottom quintiles of the earnings surprise distribution. Thus, $dTopSUEQuintile$ takes the value one if the surprise associated with an earnings announcement falls in the top quintile, and zero otherwise. In this specification, β_2 captures the return to good news (top quintile) relative to bad news (bottom quintile) for non-December earnings announcements, while β_3 captures the differential reaction for December earnings news relative to non-December earnings news. For completeness, we also consider a regression specification that focuses on the entire sample of earnings announcements. In this specification, we replace $dTopSUEQuintile$ with the earnings surprise rank measure, $SUEQuintile$. Following DellaVigna and Pollet (2009), our set of control variables includes indicators for the year of the earnings announcement, indicators for the day of the week of the earnings announcement, the quintile of the firm's market capitalization (size), the quintile for the firm's book-to-market ratio, and the standard deviation of earnings in the previous 16 quarters. Standard errors are clustered at the earnings announcement date level.

The results of the analysis are presented in Table III. Panel A provides the results for the entire sample of earnings announcements. Without controls (column (I)), the top-to-bottom average return for non-December announcements is 6.59%, significant at the 1% level. Compared to this value, the top-to-bottom return for December announcements is 1.92% larger, statistically significant at the 1% level. The results in column (I) indicate that the short-run response to December earnings announcements is approximately 29.1% (1.92/6.59) steeper relative to non-December announcements. The inference slope becomes less steep in the presence of controls (column (II)), but it continues to be significantly different from zero at the 1% level. Column (III) presents the results of the entire sample of earnings announcements. In the absence of controls, we continue to find that earnings announcements made in December generate an immediate price response that is 26.7% (0.44/1.65) steeper relative to non-December earnings news. As was the case in column (II), the slope becomes less steep in the presence of controls (column (IV)), but the difference between the immediate price reaction to December and non-December earnings news remains significantly different from zero at the 1% level.

Based on the summary statistics presented in Table I, we find that earnings announcements are much less likely to occur in months that correspond to calendar quarter ends. Thus, there may be concerns that firms that announce earnings in December (and other months corresponding to calendar quarter ends) differ on some unobservable dimensions from those announcing earnings in the other eight months of the year. In order to assuage this concern, in Panel B, we focus on a "homogeneous sample" of firms with 5% to 95% of their earnings announcements occurring in December. As a result, firms that rarely release earnings news in December or those that almost always announce in December are both excluded from the sample. In this homogeneous sample, we find that there is no evidence of earnings news in December generating a steeper immediate response relative to earnings news released in other months. The inference remains the same whether we consider just the extreme quintiles of the earnings surprise distribution or if we consider all earnings announcements within the homogeneous sample. It is also unaffected by the presence of controls. Thus, we conclude that there appears to be no case of investor distraction towards scheduled firm-specific news, such as earnings releases, if they occur in December.

B.2. Price Response to Unscheduled News Events

We use multivariate regressions to control for factors that could affect stock price reactions to rating changes. Following previous studies of credit ratings (Holthausen and Leftwich, 1986; Chava et al., 2015), we run multivariate regressions separately for upgrades and downgrades. The multivariate setting controls for factors that could affect stock price reactions to rating changes. The regression model that we estimate is:

$$\begin{aligned} CAR[-1,+1]_{i,t} = \beta_0 + \beta_1 dDecember_{i,t} \\ + \sum \gamma_i EventLevelControls_{i,t} + \sum \omega_i FirmLevelControls_{i,t} + \epsilon_{i,t}, \end{aligned} \tag{6}$$

where for any bond issue i, $CAR[-1,+1]_{i,t}$ is the immediate CAR in response to a credit rating change. The main predictor of interest is the indicator variable, *dDecember*. This dummy equals one if the unscheduled news event takes place in December and zero otherwise. The regression specification includes Fama-French 48-industry- and year-fixed effects with robust t-statistics clustered at the firm level, unless specified otherwise. We test the robustness of our results to alternative fixed effects and clustering techniques, as well as alternative definitions of CARs. All control variables are defined in Appendix A.

Table IV reports the results for the multivariate regressions analyzing the distractive effects of December towards credit rating changes. Panel A reports results for rating changes, with Sub-Panels A.1 and A.2 focusing on downgrades and upgrades, respectively. The results in column (I) of A.1 show that the coefficient on the December dummy is positive and statistically significant at the 5% level. The immediate reaction to downgrades announced in December is 1.78% weaker than that to downgrades announced in other months. Thus, in the presence of controls, the immediate response to downgrades in December appears to be approximately 44% (1.78/4.13) weaker than that to downgrades in other months. Column (I) of Sub-Panel A.2 reports that the coefficient on the December dummy is not significantly different from zero in the immediate period in response to upgrades. Overall, our regression results in Panel A confirm the univariate results of Table II (with regards to rating changes) that the immediate stock price reaction to downgrades announced in December is weaker than that to downgrades announced in other months. In addition, we find no corresponding difference in the immediate price reaction to upgrades released in December relative to other months.

We also analyze the post-announcement drift in response to December rating events in Panel A. However, the presence of the anomalous January effect contaminates the negative drift in response to rating downgrades.[7] Thus, we analyze a post-announcement window of [+2,+61] in terms of trading days relative to the rating change date for December rating events relative to January rating events. The results are reported in column (II) of Sub-Panels A.1 and A.2. We find that relative to January downgrades, December downgrades generate a negative post-announcement drift that is 5.59% stronger, which suggests that there is some correction for the immediate muted price reaction. The average value of CAR[+2,+61] for January downgrades is -3.32%. Thus, our estimate suggests that December downgrades generate post-announcement drifts that are approximately 168% (5.59/3.32) stronger (i.e., more negative) relative to January downgrades. The post-announcement drift for December upgrades, however, is not significantly different from that for January upgrades.

Panel B of Table IV displays analogous results for 8-K filings occurring in December. In column (I), the dependent variable is the *absolute* CAR in the three-day window centered on the 8-K filing date. We note that, in absolute terms, 8-Ks filed in December generate an immediate response that is 0.52% weaker than the response to 8-Ks filed in other months. In

[7]Rozeff and Kinney (1976) find that the average monthly return on an equal-weighted index of NYSE prices is 3.5% in January, relative to 0.5% in other months.

terms of economic magnitude, December 8-Ks generate an immediate response that is 11% (0.52/4.65) weaker than that to non-December 8-Ks. Similar to the univariate analysis in Table II, the muted reaction occurs at both ends of the spectrum - 8-Ks generating a negative immediate response generate a *less negative* response if filed in December, while 8-Ks generating a positive price response generate a *less positive* response if filed in December. The results of this subset analysis are presented in columns (I) and (II) of Panel B.2, respectively. Our approach assumes that positive and negative 8-Ks generate only positive and only negative immediate market reactions, respectively, which does not allow for investor mistakes in the short-term. For example, the immediate market reaction to a positive 8-K filing may be negative in the short-run before correcting over the longer horizon. Thus, even though we do not identify whether the information contained in 8-K filings is positive or negative, our approach biases us against finding a December distraction effect.

We verify our findings above by identifying the "sentiment" of all 8-K filings. We use the words list in Bodnaruk, Loughran, and McDonald (2015) to conduct our sentiment analysis. For each 8-K filing, we calculate the difference between the number of positive words and number of negative words, and scale it by the total number of words in the document. This measure is then sorted into quintiles at an annual frequency, with the lowest (highest) quintile representing the most negative (most positive) documents. The model we estimate is:

$$\begin{aligned} CAR[-1,+1]_{i,t} = \beta_0 + \beta_1 dDecember_{i,t} + \beta_2 SentimentMeasure_{i,t} \\ + \beta_3 dDecember_{i,t} \times SentimentMeasure_{i,t} \\ + \sum \gamma_{i,t} Controls_{i,t} + \epsilon_{i,t}, \end{aligned} \tag{7}$$

where *dDecember* is a dummy variable which indicates whether the 8-K filing occurs in December and $SentimentMeasure$ is the sentiment rank measure described above. β_2 captures the slope of the immediate price response to 8-Ks filed in months other than December across different sentiment quintiles, while β_3 captures the differential price reaction for December 8-K filings relative to non-December 8-K filings.

The results presented in column (I) of Panel B.3 of Table IV suggest that the slope of the immediate price response to non-December 8-K filings is positive (0.15%, significant at the 1% level). In addition, we find that the slope of the immediate price response to December 8-K filings is approximately 27% flatter (0.04/0.15) relative to that for non-December 8-K filings. We also compare the post-announcement drift in response to 8-Ks filed in December to those filed in January and report the results in column (III) of Panel B.3. In the 60 trading day period following a filing, January 8-Ks generate a positive drift (0.11%, significant at the 10% level). We find that, in this longer horizon, December 8-Ks generate a slope that is 145% (0.16/0.11) steeper relative to that generated by January filings. Taken together, our results suggest that 8-Ks filed in December are met with a muted immediate price reaction, which gets corrected in the longer term.

It is important to note that SEC regulations mandate the filing of a Form 8-K within four

business days of the occurrence of a material event. Thus, in order to also account for 8-Ks that are not filed immediately following material events, we further study the price response in the [-3,+1] window relative to the 8-K filing date, and get results that are consistent with our base specification. The regression results with the absolute value of CAR[-3,+1] as the dependent variable (reported in column (II) of Panel B.1 of Table IV) show that December 8-Ks generate a muted reaction relative to non-December filings even in this analysis using a longer immediate horizon window. Columns (III) and (IV) of Panel B.2 show that the immediate response is muted to both positive and negative filings. Finally, column (II) of Panel B.3 shows us that our findings using the sentiment analysis measure are robust to the use of this longer immediate horizon window – the slope of the immediate price response to December 8-K filings is approximately 47% weaker (0.08/0.17) relative to that for non-December 8-K filings.[8,9]

C. Addressing Sample Selection Concerns

A significant concern is sample selection bias. It is possible that firm characteristics unobservable to the econometrician could split the sample into two groups: one containing firms that experience unscheduled news events in December and the other containing firms that never do, in a non-random manner. Following Michaely, Rubin, and Vedrashko (2016), we address this concern by splitting the firms in our sample into two groups: those firms experiencing at least one unscheduled event in December (so-called December *announcer* firms) and those firms that never experience any such events in December. We do this separately for our sample of rating downgrades and 8-K filings. In econometric terms, we are attempting to separate out the December *announcement* effect from the effect of simply being a December *announcer* firm with regards to unscheduled news events.

The results of this analysis are presented in Table V. In Panel A, we find no evidence suggesting that firms experiencing downgrades in December generate weak market responses relative to non-December announcers for downgrades experienced in the other 11 months. Moreover, when we study the subsample of December announcer firms, we find that downgrade announcements in December generate a weak stock price response relative to non-December downgrades. Finally, in our full sample of rating downgrades, we find that controlling for the characteristic of being a December announcer does not subsume the significance of the December downgrade announcement underreaction. We document that the effect of the December announcement

[8]We ensure that our findings for 8-Ks are not driven simply by earnings news-triggered filings. In additional tests, we include an indicator variable that equals one if the 8-K filing firm also releases earnings news in the 15-day window centered on the 8-K filing date, and zero otherwise, and derive consistent inferences. The results are presented in Appendix Table IA.I.

[9]Our findings for the December effect are distinct from a summer holiday distraction. We follow Hong and Yu (2009) and define "summer" as the third calendar quarter of the year. Thus, unscheduled events occurring in either July, August, or September are categorized as occurring in the summer. Alternatively, we also define summer months in the "traditional" sense with unscheduled events occurring in June, July, and August being categorized as occurring in the summer. Using either definition of summer, we find no evidence suggesting that investors are distracted when responding to unscheduled events occurring in summer. The results are presented in Appendix Table IA.II.

is distinct from the effect of simply being a December announcer. These results hold when we include firm-specific characteristics such as market capitalization, leverage, market-to-book, analyst following, and institutional ownership as controls in our regression. In Panel B, we document similar evidence for our sample of 8-K filing events.

Michaely et al. (2016) study the underreaction to stock repurchase, equity offering, merger, dividend change, and earnings announcements if they occur on Friday. Cohen et al. (2017) note that firms can "cast" their earnings conference calls by disproportionately calling on bullish analysts. However, all these events are firm-initiated and firm-generated, which allows firms to strategically time the release of such information, and influence its flow. On the other hand, firms have limited control in timing the release of either third-party generated rating downgrades or 8-K information. Thus, firm characteristics can play only a minor role for unscheduled news events.

D. Matched-Sample Analysis

We conduct a matched-sample analysis in order to mitigate any concerns that firms experiencing unscheduled events in December are different on some observable firm- or event-specific characteristics from those experiencing the same in other months of the year. Following Rosenbaum and Rubin (1983), we use a propensity-score matching method that allows for matching on multiple dimensions. Firms experiencing unscheduled events in December are matched to those experiencing the same types of events in other months based on several observable firm- and event-specific characteristics. These matching characteristics include important determinants of CARs such as the magnitude of the downgrade (when matching December rating changes to non-December rating changes), the number of 8-K filings in the recent past (when matching December 8-K filings to non-December 8-K filings), and several firm-level controls, such as leverage, size, and firm performance in the month leading up to the unscheduled event.

We estimate a firm's propensity of experiencing a rating downgrade in December using a probit model. The dependent variable, *dDecember*, is an indicator variable, which equals one when the downgrade occurs in December, and zero otherwise. All explanatory variables used in the probit model are defined in Appendix A. In the *before-matching* sample, we consider all downgrades as identified by the data. In Panel A of Appendix Table IA.III, the column titled "Before match" under "Rating Downgrades" reports results for the probit model using the *before-matching* sample.

For each firm experiencing a downgrade in December, we use its propensity score to identify a firm experiencing a downgrade in other months with the closest propensity using the nearest-neighborhood caliper method described in Cochran and Rubin (1973). When studying the immediate reaction to credit rating downgrades, the outcome variable under consideration is CAR[-1,+1]. The propensity score of the matched firm experiencing a rating downgrade in months other than December is required to be within 2% of the propensity score of the firm experiencing a downgrade in December. In order to increase the sample of matched pairs, we

match each firm experiencing a downgrade in December (treated group) to five firms experiencing downgrades in other months (control group). The matching is carried out with replacement. We follow a similar approach when matching December 8-K filings to filings occurring in other months. In this case, Abs(CAR[-1,+1]) is the outcome variable we consider. When studying the post-announcement reaction to both types of unscheduled events, the outcome variable we consider is CAR[+2,+61], and unscheduled events occurring in December are matched to comparable events in January.[10]

The column titled "After match" in Panel A of Appendix Table IA.III reports the results of the probit model using the matched sample. We find that all predictors have either completely lost significance or become substantially less significant in the matched sample compared to the before-matching sample. We also observe that the pseudo R^2 is lower in the matched sample than in the before-matching sample. In Panel B of Appendix Table IA.III, we report the univariate means of the ten observable firm- and event-specific characteristics for the before-matching and after-matching samples. The findings reaffirm the findings in Panel A, which show that the propensity-score matching process significantly reduces observable differences between firms experiencing rating downgrades in December (treated group) and those downgraded in other months of the year (control group). We find consistent results in a matched sample of December and non-December 8-K filings.

In column (I) of Sub-Panel A.1 of Table VI, we report the results from our regression analysis of the December stock price reaction using a matched sample of rating downgrades. Even though we employ a matched sample, we use all matching characteristics as controls to control for any possible remaining differences along these observable dimensions. We find that the immediate price response to downgrades released in December is 1.84% weaker relative to downgrades announced in other months. In addition, we find that upgrade announcements do not face a distracted response in December, even in a matched sample of comparable non-December upgrade announcements (Sub-Panel A.2, column (I)). We also find that December 8-K filings demonstrate a distracted response even when matched to comparable non-December 8-K filings (Panel B, column (I)). Finally, our inferences for the post-announcement drift in response to both types of unscheduled events remain consistent in a matched sample. Overall, we find that our results are robust to the use of a matched sample.

E. Additional Robustness Checks

Our baseline specifications include fixed effects for Fama-French 48-industry groupings. In Appendix Table IA.V, we show that our results are robust to Fama-French 12 industry-fixed effects.

We also examine the robustness of our findings to alternative econometric specifications. Our results for both rating changes and 8-K filings continue to remain statistically significant

[10]Our results are unchanged if we consider a 1:1 propensity-score matched sample. The results are presented in Appendix Table IA.IV.

when we cluster standard errors at the event-date level instead of the firm level, or double cluster along both dimensions. Our results are also robust to industry×year-fixed effects, which capture time-varying trends within each industry. Finally, our results remain unaffected when we define CARs as the difference between the buy-and-hold return of the announcing firm and that of a size, book-to-market, and momentum matching portfolio. The 125 size-B/M-momentum portfolios are constructed following the methodology described in Daniel et al. (1997). The results are presented in Appendix Table IA.VI.

In order to account for macroeconomic changes that can occur within a given year, we include quarter-fixed effects in our specifications in addition to industry- and year-fixed effects. In additional tests, we test robustness to year×quarter-fixed effects. For both sets of fixed effects, we find that our results are qualitatively unchanged. The results of this analysis are presented in Appendix Table IA.VII.

We account for cross-sectional heterogeneity by replacing the industry-fixed effects in our sample with firm-fixed effects. Moreover, since our paper documents a time effect, we test the robustness of our results to double clustering along the firm and month dimensions to account for dependencies in the cross-section. Our results are robust to these alternative specifications, and are presented in Appendix Table IA.VIII.

F. Is There an Associated Volume Underreaction?

In this section, we explore whether the weak immediate stock price reaction to unscheduled events announced in December is accompanied by a weak immediate volume reaction. We replace the dependent variable in Equation 6 with $CATO[-1,+1]_{i,t}$ ($CAV[-1,+1]_{i,t}$), which is the cumulative abnormal stock turnover (cumulative abnormal volume) in response to an unscheduled event over the three-day window centered on the event date. As earlier, *dDecember* is a dummy that equals one if the unscheduled event occurs in December and zero otherwise.

Our results regarding abnormal volume reaction are presented in Table VII. Panel A presents the results of the full sample of rating downgrades. In column (I), the dependent variable in the regression is the cumulative abnormal stock turnover. The coefficient on *dDecember* suggests that rating downgrades in December generate weaker stock turnover responses than downgrades occurring in other months of the year. The inference remains the same when the dependent variable is the cumulative abnormal stock trading volume (CAV) (column (II)). A similar effect is documented for the abnormal volume reaction to 8-K filings in December (Panel B). Both $CATO[-1,+1]$ and $CAV[-1,+1]$ are lower in response to 8-K filings in December relative to other months. Thus, our muted price reaction results from Tables II and IV are corroborated with a muted volume reaction to unscheduled news occurring in December.[11]

[11]In additional tests, we also find that weekend proximity plays a crucial role in determining the immediate market reaction to unscheduled firm-specific news. Specifically, rating downgrades occurring on Fridays generate an immediate price reaction that is 0.82% weaker relative to downgrades occurring on other business days of the week. In addition, Friday 8-K filings generate an immediate response that is 0.14% weaker relative to filings occurring on other days of the week. Both findings are corroborated by muted immediate volume reactions as

V. What Explains the Underreaction?

In this section, we study the factors driving the underreaction to December news.

A. Role of Institutional Attention

In this subsection, we attempt to identify the reasons behind the market's underreaction to unscheduled news released in December by analyzing the attention paid by sophisticated market participants towards firm-specific news released in December. We examine the abnormal institutional attention data provided by Bloomberg for all stocks listed on the Russell 3000 that are matched to our sample. As discussed in Section II, we define our absence of institutional attention measure, *LowAttention*, as a dummy variable that takes the value of one when the Bloomberg-supplied *abnormal institutional attention* measure equals 0 or 1, and zero otherwise. We estimate a simple probit model with *LowAttention* as the dependent variable and a dummy variable indicating whether the release of the firm-specific news occurs in December as follows:

$$LowAttention_{i,t} = \beta_1 dDecember_{i,t} + \sum \gamma_i Controls + \epsilon_{i,t} \tag{8}$$

The results in column (I) of Table VIII show that there is an 11% higher probability of low attention on the part of sophisticated market participants in December relative to other months when analyzing the stocks listed on the Russell 3000. The results in columns (III) and (IV) suggest that there is higher likelihood of low attention only towards unscheduled news events such as rating downgrades and 8-K filings, respectively. However, there does not appear to be a higher likelihood of inattention towards the release of scheduled news such as earnings announcements (column (II)). These findings suggest that only unscheduled firm-specific news is faced with low institutional attention in December, and it is this subset of firm news that is susceptible to muted market reactions in December, which gets corrected in the longer horizon; scheduled firm news, which does not suffer from low institutional attention in December, is not susceptible to muted market reactions in December.[12]

Though unlikely, we also examine whether unscheduled events in December are met with a muted market reaction because investors struggle to evaluate multiple signals (Hirshleifer et al., 2009). The results of this analysis, presented in Appendix Table IA.X, indicate that information overload, defined in terms of the number of firm-specific announcements released on a trading day, has no effect on the reaction to downgrade announcements and 8-K filings in December.[13] Moreover, we also show that our results are not driven by investors being

well. Thus, these findings indicate that the weekend proximity effect in the market reaction to earnings news, as examined in DellaVigna and Pollet (2009), extends to both rating downgrades and 8-K filings. The results of this analysis are presented in Appendix Table IA.IX.

[12]Note that this is consistent with Ben-Rephael, Da, and Israelsen (2016), who suggest that the price drifts following earnings announcements and analyst recommendations are concentrated in events where institutional investors fail to pay sufficient attention.

[13]For each trading day between January 1, 1996 and December 31, 2015, we sum up the number of firm quarterly earnings announcements, unique rating events, and 8-K filings, and use this measure as a proxy for the amount of firm-specific information that the average investor faces each trading day. We gather only one rating change announcement per firm for any rating event date. Thus, if a firm experiences rating changes on multiple

distracted by large aggregate market movements, as described in Kottimukkalur (2017). The results of this analysis are presented in Table IA.XI.[14]

B. Are Some Weeks More Important Than Others?

In this subsection, we attempt to narrow down the specific weeks that drive the December effect. Since Christmas holidays occur towards the end of the month, the average investor or market participant typically schedules any travel plans in the latter half of the month. This implies that rating changes announced in the first half of the month should be less prone to investor inattention and that the majority of the holiday season distraction is driven by the latter half of the month. We test this hypothesis using the following regression:

$$CAR[-1,+1]_{i,t} = \beta_0 + \beta_1 dDecember\_1stHalf_{i,t} + \beta_2 dDecember\_2ndHalf_{i,t} + \sum \gamma_i EventLevelControls_{i,t} + \sum \omega_i FirmLevelControls_{i,t} + \epsilon_{i,t} \quad (9)$$

where $dDecember\_1stHalf$ is a dummy variable indicating whether the unscheduled event occurs on or before December 15, which is our proxy for the first half of December. Similarly, $dDecember\_2ndHalf$ is a crude proxy for the latter half of December. β_1 captures the immediate market reaction to events occurring between December 1 and December 15, whereas β_2 captures the immediate market reaction to events occurring between December 16 and December 31.

The results are presented in Table IX. The results in column (II) of Panel A show that downgrades released after December 15 generate an immediate reaction that is 2.14% weaker relative to downgrades announced in other months (significant at the 5% level). However, downgrades released in the first half of December do not appear to generate a weak immediate response relative to other months. In column (II) of Panel B, we find that the immediate price reaction to 8-K filings is 0.69% weaker (significant at the 1% level) if they occur in the latter half of December, but only 0.37% weaker if they occur in the first half of December.

C. Does Firm Prominence Play a Role?

In this subsection, we examine whether all firms are equally susceptible to investor distraction in December. It can be argued that high media coverage results in investors paying attention to news involving prominent firms. On the other hand, lower market focus results in smaller firms flying under the radar, which results in a slow market response. We use the fol-

bonds on the same day, we record just one rating change observation for this firm-rating date pair. For each calendar month, we rank this proxy into quintiles, where the bottom quintile corresponds to "low information overload" and the top quintile corresponds to "high information overload." We then analyze the subsample of unscheduled events that fall only in the bottom quintile or only in the top quintile separately.

[14]We compute the absolute value of the CRSP value-weighted index daily return for each day trading day between January 1, 1996 and December 31, 2015, and use this as our proxy for market movement. For each calendar quarter, we rank this proxy into quintiles, where the bottom quintile corresponds to "low movement" and the top quintile corresponds to "high movement." The quintile breakpoints are lagged to avoid look-ahead bias. We then analyze the subsample of unscheduled events that fall only in the bottom quintile or only in the top quintile separately.

lowing regression to determine if the December effect is driven entirely by such non-prominent firms:

$$\begin{aligned} CAR[-1,+1]_{i,t} = \beta_0 &+ \beta_1 dDecember_{i,t} + \beta_2 dProminence_{i,t} \\ &+ \beta_3 dDecember_{i,t} \times dProminence_{i,t} \\ &+ \sum \gamma_i RatingLevelControls_{i,t} + \sum \omega_i FirmLevelControls_{i,t} + \epsilon_{i,t}, \end{aligned} \tag{10}$$

where *dDecember* is an indicator variable equal to one if the rating downgrade is announced in December and zero otherwise. *dProminence* is an indicator variable equal to one if the firm experiencing a rating change is a prominent firm and zero otherwise. A firm is *prominent* if its market value, analyst following, or institutional ownership falls in the top quintile of their respective distributions. Our regression specification includes industry- and year-fixed effects, with standard errors clustered at the firm level.

In column (I) of Panel A of Table X, the coefficient on the December dummy indicates that non-large-cap firms that receive in December generate an immediate response that is 2.31% weaker (significant at the 5% level) relative to similar firms downgraded in other months. The sum of the December dummy and the interaction between the December dummy and the dummy indicating large-cap firms is not statistically different from zero, which suggests that large-cap firms downgraded in December do not generate immediate price responses that are significantly different from those downgraded in other months. We document consistent inferences when we define firm prominence in terms of analyst following and institutional ownership, and report the results in columns (II) and (III) of Panel A, respectively.

We also examine the impact of firm prominence on the absolute immediate price response to December 8-K filings. Given the wide heterogeneity in the number of 8-K filings per firm, however, we expect the impact of firm prominence to be moderated by how frequently firms file 8-Ks. For the subsample of infrequent 8-K filers, the *potential for mispricing* is presumably greater for prominent firms since non-prominent firms that file 8-Ks infrequently generate weak market reactions. For the sample of frequent 8-K filers, however, prominent firms should be less susceptible to investor distraction since they face greater market scrutiny relative to non-prominent firms that file 8-Ks frequently. We compute the total number of 8-Ks filed per firm, sort this measure into quintiles, and define *infrequent* and *frequent* 8-K filing firms to be those that fall in the bottom and top quintiles of this distribution, respectively. The regression specification we estimate for infrequent filers is:

$$\begin{aligned} Abs(CAR[-1,+1])_{i,t} = \beta_0 &+ \beta_1 dDecember_{i,t} + \beta_2 dInfrequentFiler_i \\ &+ \beta_3 dProminence_{i,t} + \beta_4 dDecember_{i,t} \times dInfrequentFiler_i \\ &+ \beta_5 dDecember_{i,t} \times dProminence_{i,t} \\ &+ \beta_6 dInfrequentFiler_i \times dProminence_{i,t} \\ &+ \beta_7 dDecember_{i,t} \times dInfrequentFiler_i \times dProminence_{i,t} \\ &+ \sum \gamma_i 8KLevelControls_{i,t} + \sum \omega_i FirmLevelControls_{i,t} + \epsilon_{i,t}, \end{aligned} \tag{11}$$

where *dDecember* is an indicator variable equal to one if the 8-K filing takes place in December, and *dProminence* is defined as for Equation 10. *dInfrequentFiler* is an indicator variable that equals one if the firm falls in the bottom quintile of the distribution of the number of 8-Ks filed, and zero otherwise. Our regression specification contains industry- and year-fixed effects, with standard errors clustered at the firm level.

The coefficients of interest are β_1, β_4, and β_7. β_1 captures the immediate price response towards the December 8-K filings of non-prominent, frequent filers relative to comparable filings in other months. $\beta_1 + \beta_4$ captures the price response towards the December 8-K filings of non-prominent, infrequent filers relative to similar filings in other months, and $\beta_1 + \beta_7$ captures the same immediate price response to the December 8-K filings of prominent and infrequent filers relative to comparable filings in other months.

The results of this analysis are presented in Sub-Panel B.1 of Table X. In the interest of brevity, we only report the coefficient estimates of interest. In column (I), the regression results of firm prominence, as determined by market capitalization, show that the immediate price response to the 8-K filings of non-prominent, infrequent filers in December is only 0.19% weaker (significant at the 1% level) relative to comparable filings in other months. On the other hand, the price response to the December 8-K filings of prominent, infrequent filers is 0.84% weaker (significant at the 1% level) relative to similar filings in other months. This difference of 0.65% is significant at the 1% level, and suggests that there is greater immediate underreaction to the December 8-K filings of prominent, infrequent filers relative to non-prominent, infrequent filers. We find a similar inference when firm prominence is defined in terms of analyst following or institutional ownership, and the results are reported in columns (II) and (III) of Sub-Panel B.1, respectively.

In order to study frequent 8-K filers, we use Equation 11 again, but replace *dInfrequentFiler* with *dFrequentFiler*, which indicates if the filing firm falls in the top quintile of the distribution of the number of 8-Ks filed. The results of this analysis are reported in Sub-Panel B.2. Column (I) reports results in which prominence is determined in terms of market capitalization. We find that there is greater underreaction to the December 8-K filings non-prominent, frequent filers relative to prominent, frequent filers, but that this difference of 0.25% is not significant. We document consistent results when firm prominence is determined in terms of analyst following or institutional ownership, the results for which are reported in columns (II) and (III) of Sub-Panel B.2, respectively. Taken together, our results suggest that firm prominence plays an important role in the December effect towards 8-K filings, and that it is moderated by the frequency with which firms file 8-Ks.

D. What Types of Unscheduled Events are Important?

In this subsection, we study specific subsets of downgrade announcements responsible for generating the December effect. We examine three subsamples: speculative-grade bonds that receive downgrades (SG-SG sample), investment-grade bonds that receive downgrades but re-

tain their investment-grade status (IG-IG sample), and investment-grade bonds that become speculative-grade because of the announced downgrade (IG-SG sample).

In Table XI, column (I) of Panel A reports the results for the SG-SG sample. We find that the immediate response to downgrades on already speculative-grade bonds do not generate a significantly different immediate price response if they occur in December relative to other months. In column (II), we find that downgrades in December within the IG-IG subsample generate an immediate price response that is 0.93% weaker relative to similar downgrades in other months (marginally insignificant at the 10% level). For the IG-SG subsample, results in column (III) show that downgrades in December generate an immediate price response that is 5.11% weaker relative to downgrades announced in the other months (significant at the 5% level). Thus, the overall December effect is dominated by the subsample of downgrades that cause the rated bonds to cross the investment-grade-speculative-grade boundary. Given how losing investment-grade status significantly hampers a firm's ability to access credit markets, we suggest that the observed pattern of results hold because the *potential for mispricing* is greatest for the IG-SG subsample.

We next examine if broad sections of 8-K-triggering events or individual 8-K-triggering events are responsible for driving the distracted response to 8-K filings in December.[15] We determine the type of 8-K filing by parsing out the trigger that requires the firm to publicly announce the occurrence of a material event. We include a fixed effect for the the broad sections of trigger events in addition to our industry- and year-fixed effects to account for any unobserved heterogeneity of the effect of these broad sections in determining the (absolute) immediate price response to 8-K filings. As the results in column (I) in Panel B of Table XI show, the inclusion of this fixed effect reduces the economic impact of our December dummy (indicating approximately a 5.5% muted absolute immediate price reaction to December 8-K filings), but continues to be robustly estimated at the 1% level. When we include a fixed effect for the individual trigger events themselves, we find that our estimate in column (II) is unaffected relative to the base specification reported in column (I) of Panel B of Table IV.[16] In general, the broad categories of triggering events, or the specific triggering events themselves, are not individually responsible for the documented muted market reaction toward 8-K filings in December.

E. Does 8-K Length Matter?

In this subsection, we examine the moderating effect of 8-K filing length on the immediate price reaction to 8-K filings occurring in December. Longer documents are more susceptible to muted reactions if they occur in periods of high travel and distraction. In this analysis, *length* is

[15]Information regarding the broad sections of events that trigger the filing of a Form 8-K are described in Appendix Table IA.XIV.

[16]We also estimate the muted price reaction to December 8-K filings by focusing on individual broad sections of triggering events and individual triggering events. The broad categories of triggers considered for this study are motivated by Zhao (2016). The results are presented in Appendix Table IA.XII.

defined as the logarithm of the number of words in the 8-K filing. This measure is standardized to ease interpretation. The regression specification we estimate is:

$$Abs(CAR[-1,+1])_{i,t} = \beta_0 + \beta_1 dDecember_{i,t} + \beta_2 Length_{i,t} + \beta_3 dDecember_{i,t} \times Length_{i,t} + \sum \gamma_i 8KLevelControls_{i,t} + \sum \omega_i FirmLevelControls_{i,t} + \epsilon_{i,t}.$$

The coefficients of interest are β_1 and β_3. β_1 captures the price response to an 8-K filing of average length filed in December, whereas β_3 captures the differential impact of a one standard deviation increase in the length of the 8-K filing on the absolute immediate price response if it occurs in December.

Column (I) in Table XII reports the results for the price response to 8-K filings. In terms of economic magnitude, our results suggest that a one standard deviation increase in the length of the filing generates an immediate price response that is 36.7% (0.18/0.49) more muted (in absolute terms) relative to that for an average-sized December 8-K filing. The associated abnormal volume results (reported in column (II)) are similar. Overall, we find that the length of an 8-K filing in December has a moderating effect on the market's reaction. These findings are consistent with the hypothesis of a negative correlation between financial document length and its readability as explored in Loughran and McDonald (2014). Moreover, these results are also consistent with the hypothesis of low readability financial disclosure documents being associated with greater deviation from the issuing firm's fundamental value as studied in Hwang and Kim (2017).

VI. Conclusion

In this paper, we present evidence that investor inattention during December impacts the stock market's reaction to unscheduled firm-specific announcements. Credit rating downgrade announcements and 8-K filings in December generate significantly weaker stock market reactions than downgrades released and 8-Ks filed in other months. This December effect does not affect the market's response to the release of scheduled firm-specific news, such as earnings announcements. We find that investor response to December downgrades and 8-K filings of prominent firms, as determined by market size, analyst following, or institutional ownership is similar to other months. Moreover, only unscheduled events released in the latter half of December, during the peak holiday season, are subject to investor distraction. Taken together, our findings suggest investors pay limited attention to unscheduled, but salient, firm-specific news during December.

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Table I: Scheduled Firm News Announcements - Summary Statistics

This table reports abnormal stock price reactions to earnings announcements. The sample consists of all earnings announcements made by U.S. firms during the period from January 1996 to December 2015. Panel A displays the distribution of earnings announcements across months of the year. Panel B displays the immediate stock price reaction to earnings announcements released in December relative to those released in other months. The cumulative abnormal return, CAR[-1,+1], is calculated using the market model over the three-day window centered on the date of the earnings announcement. We sort all earnings announcements with valid earnings surprises into quintiles based on quarterly sorts, where the lowest quintile (Quintile 1) contains stocks experiencing the most negative earnings surprises, and the highest quintile (Quintile 5) contains stocks experiencing the most positive earnings suprises. Panel B.1 displays the average standardized unexpected earnings (earnings surprise) across the different quintiles and how it varies between December announcements and non-December announcements. Panel B.2 displays the average CAR[-1,+1] calculated over the three-day window centered on the date of the earnings announcement across different quintiles of the earnings surprise distribution. Robust T-statistics are displayed in square brackets. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Distribution of Earnings Announcements by Month

	All	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Number	241,069	21,446	25,463	8,702	36,115	24,270	3,558	36,315	22,151	3,244	35,062	21,235	3,508
Fraction	100	8.90	10.56	3.61	14.98	10.07	1.48	15.06	9.19	1.35	14.54	8.81	1.46

Panel B: Differences between Announcements in December and Other Months by Earnings Surprise Quintile

	B.1: Mean SUE					B.2: Mean CAR[-1,+1]				
Quintile	1 Low	2	3	4	5 High	1 Low	2	3	4	5 High
December	-0.0348***	-0.0004***	0.0005***	0.0017***	0.0106***	-4.07***	-2.14***	0.06	1.79***	4.43***
	[-3.88]	[-16.80]	[39.85]	[54.42]	[18.74]	[-9.62]	[-6.44]	[0.19]	[5.38]	[10.47]
Other Months	-0.0257***	-0.0005***	0.0005***	0.0017***	0.0140***	-3.25***	-1.53***	0.21***	1.78***	3.34***
	[-34.99]	[-127.20]	[309.87]	[418.87]	[42.61]	[-68.56]	[-45.27]	[6.32]	[50.40]	[71.99]
Difference	-0.0091	0.0001**	0.0000*	-0.0000	-0.0035***	-0.82*	-0.61*	-0.15	0.01	1.09**
	[-1.01]	[2.25]	[1.71]	[-0.92]	[-5.30]	[-1.93]	[-1.82]	[-0.47]	[0.04]	[2.57]

Table II: Unscheduled Firm News Announcements - Summary Statistics

This table reports abnormal stock price reactions to credit rating change announcements and to required filings indicating the occurrence of material events. The rating events sample consists of 5,667 downgrades and 3,096 upgrades on taxable corporate bonds issued by U.S. firms during the period from January 1996 to December 2015. The 8-K sample consists of 686,627 filings by U.S. firms during the period from January 1996 to December 2015. Panel A displays the distribution of rating events and 8-K filings across months of the year. In Panel B, we study the stock price reaction to rating events and 8-K filings occurring in December relative to rating events and 8-K filings occurring in other months, respectively. The cumulative abnormal return, CAR[-1,+1], is calculated using the market model. In Sub-Panel B.1, the dependent variable is CAR[-1,+1], whereas in Sub-Panel B.2, the dependent variable is Abs(CAR[-1,+1]). Robust T-statistics are displayed in square brackets. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Distribution of Unscheduled Firm News by Month

	Rating Changes				8-K Filings	
	Downgrades		Upgrades			
	Count	Percent	Count	Percent	Count	Percent
January	420	7.41	198	6.40	53,018	7.72
Febuary	462	8.15	237	7.66	61,761	8.99
March	555	9.79	339	10.95	54,874	7.99
April	468	8.26	281	9.08	62,953	9.17
May	450	7.94	330	10.66	72,098	10.50
June	477	8.42	299	9.66	47,183	6.87
July	423	7.46	238	7.69	59,983	8.74
August	417	7.36	234	7.56	59,511	8.67
September	404	7.13	247	7.98	42,797	6.23
October	565	9.97	239	7.72	62,213	9.06
November	554	9.78	232	7.49	61,361	8.94
December	472	8.33	222	7.17	48,875	7.12
Total	5,667	100	3,096	100	686,627	100

Panel B: Difference in CAR Response to Unscheduled Firm News in December and Other Months

	B.1: Rating Changes		B.2: 8-K Filings		
	Downgrades (I)	Upgrades (II)	(I)	(II)	(III)
	CAR[-1,+1]	CAR[-1,+1]	Absolute CAR[-1,+1]	Negative CAR[-1,+1]	Positive CAR[-1,+1]
December	-1.56**	0.47*	4.46***	-4.27***	4.65***
	[-2.55]	[1.67]	[178.94]	[-130.42]	[123.63]
Other Months	-4.13***	0.13*	4.65***	-4.59***	4.73***
	[-20.02]	[1.81]	[682.30]	[-499.07]	[466.67]
Difference	2.58***	0.34	-0.19***	0.31***	-0.07*
	[4.00]	[1.19]	[-7.51]	[9.25]	[-1.90]
Total	-3.92***	0.15**	4.64***	-4.56***	4.72***
	[-19.97]	[2.23]	[705.25]	[-515.76]	[482.63]

Table III: December Effect in Stock Price Response to Scheduled News

This table reports the results of stock price reactions to earnings announcements. Panel A presents the results of the entire sample of earnings announcements made by U.S. firms over the period from January 1996 to December 2015. Panel B presents the results of the subsample of firms that release 5% to 95% of their announcements in December. Columns (I) and (II) in both panels present the results of earnings announcements with earnings surprises that fall in the lowest (most negative earnings surprises) and highest (most positive earnings surprises) quintiles. Columns (III) and (IV) present the results of all quintiles of earnings announcements within the respective samples of the two panels. The dependent variable is CAR[-1,+1] calculated over the three-day event window centered around the earnings announcement date using the market model. The set of controls includes indicators for the year of earnings announcement, indicators for the day of week of earnings announcement, the quintile of a firm's market capitalization (size), the quintile of a firm's book-to-market ratio, and the standard deviation of earnings in the previous sixteen quarters. All control variables are interacted with the indicator for the top quintile of earnings surprises (columns (I) and (II)) or with the earnings surprise quintile variable (columns (III) and (IV)). All the variables are defined in Appendix A. Robust T-statistics, clustered at the earnings announcement date level, are displayed in square brackets. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Panel A: Full Sample				Panel B: Homogeneous Sample			
	Extreme Quintiles		All Announcements		Extreme Quintiles		All Announcements	
	(I)	(II)	(III)	(IV)	(I)	(II)	(III)	(IV)
Constant	-3.25***		-3.19***		-3.94***		-3.79***	
	[-52.12]		[-68.42]		[-21.52]		[-27.93]	
dDecember	-0.82*	-0.82	-0.98***	-0.91**	-0.04	-0.46	-0.36	-0.50
	[-1.75]	[-1.62]	[-2.93]	[-2.57]	[-0.08]	[-0.84]	[-1.02]	[-1.31]
dTopQuintile	6.59***	9.34***			8.17***	8.22***		
	[87.94]	[17.01]			[31.11]	[4.00]		
dDecember × dTopQuintile	1.92***	2.10***			0.33	0.68		
	[3.14]	[3.26]			[0.50]	[0.97]		
Earnings Surprise Quintile			1.65***	2.29***			2.06***	1.92***
			[95.22]	[19.78]			[35.92]	[4.46]
dDecember × (Earnings Surprise Quintile)			0.44***	0.45***			0.05	0.10
			[3.30]	[3.24]			[0.37]	[0.66]
Observations	96065	68663	241069	180305	7561	5802	18732	14760
Controls (Interacted)		✓		✓		✓		✓
Adjusted R^2	0.09	0.12	0.07	0.08	0.14	0.16	0.10	0.11

Table IV: December Effect in Stock Price Reaction to Unscheduled News

Panel A of this table reports the results of stock price reactions to credit rating changes. Panel A.1 presents the results of rating downgrades, whereas Panel A.2 presents the results of rating upgrades. In the regression for the results in column (I) of both panels, the dependent variable is CAR[-1,+1], calculated using the market model. In the regression for the results in column (II) of both panels, the dependent variable is the post-announcement drift calculated over the 60-trading day period following the rating change, calculated as the difference between the buy-and-hold return of the firm experiencing a rating change and that of a size, book-to-market, and momentum matching portfolio over the 60-trading day period following the rating change announcement.

Panel B of this table reports results of stock price reactions to filings indicating the occurrence of a material event. Cumulative abnormal returns are calculated using the market model. In column (I) (column (II)) of Panel B.1, the dependent variable is CAR[-1,+1] (CAR[-3,+1]). Columns (I) and (II) (columns (III) and (IV)) of Panel B.2 report the results for 8-K filings generating a negative immediate price reaction and a positive CAR[-1,+1] (CAR[-3,+1]), respectively. Columns (I) and (II) of Panel B.3 report the results of sentiment analysis conducted on the 8-Ks. The dependent variables in columns (I), (II), and (III) are CAR[-1,+1], CAR[-3,+1], and CAR[+2,+61], respectively, measured in trading days relative to the 8-K filing date. The regressions presented in all columns except column (III) of Panel B.3 are conducted on the entire sample of 8-K filings, whereas the regression in column (III) of Panel B.3 is only conducted on 8-K filings occurring in the months of December and January.

All the variables are defined in Appendix A. Robust T-statistics, clustered at the firm level, are displayed in square brackets. *, ** and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A: December Effect in Response to Credit Rating Changes

	A.1: Downgrades		A.2: Upgrades	
	(I) CAR[-1,+1]	(II) CAR[+2,+61]	(I) CAR[-1,+1]	(II) CAR[+2,+61]
dDecember	1.78**	-5.59*	0.52	0.19
	[2.08]	[-1.85]	[1.55]	[0.07]
Log(Prev Rating)	-2.03**	7.36	-0.23	4.03
	[-2.41]	[1.47]	[-0.62]	[0.73]
Abs(Rating Change)	-1.70***	1.53	-0.14	-2.85
	[-3.56]	[1.17]	[-1.25]	[-0.81]
Earnings Ann Related	-2.14**	3.89	1.32**	-5.05
	[-2.30]	[0.53]	[2.53]	[-0.95]
Log(Days Since Last Rating)	-0.12	0.89	0.06	-0.32
	[-0.94]	[1.29]	[1.23]	[-0.44]
Size	0.46	-0.08	-0.12	5.54***
	[1.11]	[-0.03]	[-0.79]	[2.78]
Market-to-Book	0.14	0.58	-0.26*	0.83
	[0.30]	[0.17]	[-1.74]	[0.29]
Profitability	-0.64	9.64	-0.24	0.16
	[-0.48]	[1.09]	[-0.37]	[0.03]
Leverage	-3.44**	-3.89	0.31	-0.08
	[-2.12]	[-0.38]	[0.61]	[-0.01]
Earnings	15.56	1.09*	2.10	0.16
	[1.25]	[1.88]	[0.26]	[0.17]
Log(Volatility)	-0.78	-5.25	0.00	0.05
	[-1.07]	[-1.03]	[0.01]	[0.01]
Log(Trading Volume)	-0.54	1.98	0.08	-4.04***
	[-1.44]	[0.60]	[0.55]	[-2.59]
Average Return	2.75***	-6.66	0.90**	-1.22
	[4.55]	[-1.45]	[2.23]	[-0.20]
Observations	5336	825	2911	386
Adjusted R^2	0.11	0.07	0.01	0.08
Fixed Effects	FF48, Year	FF48, Year	FF48, Year	FF48, Year

Panel B: December Effect in Response to 8-K Filings

	B.1: Baseline		B.2: Partitioned Samples			
	Absolute CAR[-1,+1]	Absolute CAR[-3,+1]	Negative CAR[-1,+1]	Positive CAR[-1,+1]	Negative CAR[-3,+1]	Positive CAR[-3,+1]
	(I)	(II)	(I)	(II)	(III)	(IV)
dDecember	-0.52***	-0.47***	0.65***	-0.38***	0.74***	-0.17*
	[-18.93]	[-8.00]	[19.06]	[-9.97]	[14.55]	[-1.75]
Log(#8Ks Last Year)	-0.09***	-0.21***	0.09***	-0.10***	0.22***	-0.21***
	[-5.88]	[-7.45]	[4.74]	[-4.79]	[7.78]	[-4.69]
Log(Days Since Last Filing)	0.21***	0.07***	-0.20***	0.22***	-0.08***	0.07***
	[29.22]	[5.74]	[-22.30]	[22.55]	[-6.26]	[3.95]
Size	-0.43***	-0.51***	0.42***	-0.45***	0.48***	-0.55***
	[-37.78]	[-25.71]	[32.22]	[-30.50]	[25.26]	[-17.97]
Market-to-Book	0.10***	0.07***	-0.13***	0.05***	-0.18***	-0.04*
	[11.35]	[4.99]	[-12.63]	[5.01]	[-11.70]	[-1.95]
Leverage	0.27***	0.94***	-0.14***	0.41***	-0.46***	1.39***
	[5.93]	[10.56]	[-2.70]	[6.83]	[-5.46]	[10.13]
Profitability	0.00	-0.01	-0.02***	-0.01***	-0.02***	-0.04***
	[1.39]	[-1.04]	[-5.01]	[-2.98]	[-2.69]	[-2.61]
Earnings	-1.67***	-4.42***	3.98***	0.97***	6.09***	-2.84***
	[-7.61]	[-9.05]	[14.94]	[3.16]	[13.55]	[-3.32]
Log(Trade)	0.30***	0.37***	-0.34***	0.26***	-0.44***	0.31***
	[29.61]	[21.03]	[-29.45]	[20.34]	[-26.00]	[11.59]
Log(Volatility)	2.75***	4.74***	-2.56***	2.96***	-3.82***	5.53***
	[107.53]	[87.55]	[-86.81]	[87.19]	[-79.42]	[67.61]
Average Return	-0.81***	-0.63***	1.29***	-0.30***	2.87***	1.49***
	[-32.79]	[-10.39]	[42.59]	[-8.50]	[54.50]	[14.50]
Observations	663299	663290	340891	322408	340424	322866
Adjusted R^2	0.19	0.16	0.20	0.19	0.21	0.16
Fixed Effects	FF48, Year	FF48, Year	FF48, Year	FF48, Year	FF48, Year	FF48, Year

	B.3: Sentiment Analysis		
	CAR[-1,+1]	CAR[-3,+1]	CAR[+2,+61]
	(I)	(II)	(III)
dDecember × Sentiment Measure	-0.04*	-0.08**	0.16*
	[-1.69]	[-2.00]	[1.74]
Sentiment Measure	0.15***	0.17***	0.11*
	[22.03]	[16.55]	[1.69]
dDecember	0.40***	0.77***	0.43
	[5.45]	[5.75]	[1.36]
Log(#8Ks Last Year)	0.02	0.01	0.32*
	[1.00]	[0.39]	[1.71]
Log(Days Since Last Filing)	0.00	0.01	0.10
	[0.32]	[0.45]	[1.41]
Size	0.05***	0.11***	0.19
	[4.62]	[5.72]	[1.56]
Market-to-Book	-0.16***	-0.30***	-0.27***
	[-14.51]	[-17.21]	[-2.75]
Leverage	0.22***	0.54***	1.77***
	[4.39]	[6.43]	[3.24]
Profitability	-0.15*	-0.04***	-0.07
	[-1.87]	[-5.30]	[-1.47]
Earnings	5.87***	5.48***	0.36***
	[19.91]	[10.27]	[13.64]
Log(Trade)	-0.11***	-0.19***	0.19*
	[-10.88]	[-11.05]	[1.79]
Log(Volatility)	0.14***	0.91***	-4.24***
	[5.00]	[17.88]	[-15.35]
Average Return	1.05***	4.09***	-0.45
	[31.42]	[59.81]	[-1.34]
Observations	663299	663290	98072
Adjusted R^2	0.01	0.03	0.08
Fixed Effects	FF48, Year	FF48, Year	FF48, Year

Table V: December Effect in Response to Unscheduled News Events: Addressing Selection Concerns

In Panel A, the dependent variable is CAR[-1,+1], calculated using the market model over the three-day window centered on the date of the rating change. The dependent variable in Panel B is Abs(CAR[-1,+1]) centered on the date of the 8-K filing. *dDecember* is an indicator variable equal to one for announcements made in December and zero otherwise. *dDecAnnouncer* is an indicator equal to one for firms that experienced at least one unscheduled announcement in December during the sample period and zero otherwise. This indicator is defined separately for the sample of rating downgrades and the sample of 8-K filings. Odd columns present univariate regressions, while even columns report multivariate regressions controlling for industry- and year-fixed effects along with firm characteristics. Firm characteristics include market capitalization, leverage, market-to-book, analyst following, and institutional ownership. Robust T-statistics, clustered at the firm level, are displayed in square brackets. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Rating Downgrades

	Full Sample		January-November Subsample		December Announcers Subsample		Full Sample	
	(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)	(VIII)
Constant	-4.13***		-4.35***		-3.95***		-4.35***	
	[-12.94]		[-9.03]		[-9.26]		[-9.03]	
dDecember	2.58***	1.98**			2.40***	1.58*	2.40***	1.70*
	[2.91]	[2.17]			[2.61]	[1.72]	[2.61]	[1.84]
dDecAnnouncer			0.40	0.76			0.40	0.75
			[0.62]	[1.31]			[0.62]	[1.29]
Observations	5667	4593	5195	4198	3353	2771	5667	4593
Adjusted R^2	0.00	0.06	-0.00	0.06	0.00	0.04	0.00	0.06
Firm Chars.		✓		✓		✓		✓
Fixed Effects		*FF48, Y*		*FF48, Y*		*FF48, Y*		*FF48, Y*

Panel B: 8-K Filings

	Full Sample		January-November Subsample		December Announcers Subsample		Full Sample	
	(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)	(VIII)
Constant	4.65***		5.85***		4.60***		5.85***	
	[169.16]		[65.29]		[163.12]		[65.29]	
dDecember	-0.19***	-0.28***			-0.15***	-0.26***	-0.15***	-0.26***
	[-6.18]	[-9.11]			[-4.66]	[-8.62]	[-4.66]	[-8.64]
dDecAnnouncer			-1.25***	-0.36***			-1.25***	-0.32***
			[-13.26]	[-4.70]			[-13.26]	[-4.16]
Observations	686627	582560	637752	541572	661810	561651	686627	582560
Adjusted R^2	0.00	0.12	0.00	0.12	0.00	0.12	0.00	0.12
Firm Chars.		✓		✓		✓		✓
Fixed Effects		*FF48, Y*		*FF48, Y*		*FF48, Y*		*FF48, Y*

Table VI: December Effect in Response to Unscheduled News Events: Matched Sample Analysis

Panel A of this table reports results of stock price reactions to bond rating changes in a 1:5 propensity-score matched sample with replacement. In column (I) of A.1 and A.2, the dependent variable is CAR[-1,+1] calculated using the market model over the three-day window centered on the date of the rating change. In column (I) of A.1 (A.2), downgrades (upgrades) occurring in December are matched to downgrades (upgrades) announced in other months. In column (II) of A.1 and A.2, the dependent variable is CAR[+2,+61] in trading days relative to the rating change date, and is calculated as the difference between the buy-and-hold returns of the firm experiencing the rating change and a matched size, book-to-market, and momentum portfolio. The 125 size-B/M-momentum portfolios are constructed using the methodology described in Daniel et al. (1997). In column (II) of A.1 (A.2), downgrades (upgrades) occurring in December are matched to downgrades (upgrades) announced in January. In columns (I) and (II) of Panel B, 8-K filings occurring in December are matched to 8-K filings occurring in other months of the year. The dependent variable in column (I) of Panel B is the absolute value of the three-day cumulative abnormal return (calculated using the market model) centered on the date of the 8-K filing. The dependent variable for the regression result reported in Column (II) is CAR[-1,+1]. In column (III) of Panel B, 8-K filings occurring in December are matched to 8-K filings occurring in January. The dependent variable in column (III) of Panel B is CAR[+2,+61] in trading days relative to the Form 8-K filing date. All the variables are defined in Appendix A. Robust T-statistics, clustered at the firm level, are displayed in square brackets. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Panel A: Rating Changes				Panel B: 8-K Filings		
	A.1: Downgrades		A.2: Upgrades				
	(I) CAR[-1,+1]	(II) CAR[+2,+61]	(I) CAR[-1,+1]	(II) CAR[+2,+61]	(I) Abs(CAR[-1,+1])	(II) CAR[-1,+1]	(III) CAR[+2,+61]
dDecember	1.84**	-6.15**	0.57	0.63	-0.54***	0.45***	0.41
	[2.06]	[-2.02]	[1.56]	[0.24]	[-18.87]	[5.48]	[1.28]
Sentiment Measure (SM)						0.18***	0.11
						[14.12]	[1.58]
dDecember × SM						-0.06**	0.16*
						[-2.30]	[1.69]
Observations	2042	808	1005	367	236874	236872	95,779
Adjusted R^2	0.09	0.07	0.01	0.12	0.21	0.01	0.08
Controls	Rating, Firm	Rating, Firm	Rating, Firm	Rating, Firm	8-K, Firm	8-K, Firm	8-K, Firm
Fixed Effects	FF48, Year	FF48, Year	FF48, Year	FF48, Year	FF48, Year	FF48, Year	FF48, Year

Table VII: December Effect in Volume Reaction to Unscheduled News Events

This table reports results of volume reactions to unscheduled news events. Panel A presents the results of rating downgrade announcements, whereas Panel B presents the results of 8-K filings. In the regression results reported in column (I) of both panels, the dependent variable is the cumulative normalized abnormal stock turnover in the three-day window centered on the firm event date. In the regression results reported in column (II) of both panels, the dependent variable is the cumulative normalized abnormal volume in the three-day window centered on the firm event date. All specifications include industry- and year-fixed effects. The construction of all independent variables is explained in Appendix A. Robust T-statistics, clustered at the firm level, are displayed in square brackets. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Panel A: Rating Downgrades		Panel B: 8-K Filings	
	(I) CATO[-1,+1]	(II) CAV[-1,+1]	(I) CATO[-1,+1]	(II) CAV[-1,+1]
dDecember	-0.57** [-2.41]	-0.55** [-2.30]	-0.33*** [-14.11]	-0.34*** [-14.59]
Observations	5321	5321	663207	663207
Adjusted R^2	0.13	0.13	0.02	0.02
Controls	Rating, Firm	Rating, Firm	8-K, Firm	8-K, Firm
Fixed Effects	FF48, Year	FF48, Year	FF48, Year	FF48, Year

Table VIII: Low Institutional Attention in December

This table reports the results of institutional attention to news events in December. Column (I) reports results for institutional attention towards all stocks on the Russell 3000 in December. Columns (II), (III), and (IV) report results for institutional attention towards earnings announcements, credit rating downgrades, and 8-K filings occurring in December, respectively. In the regression for the results in all four columns, the dependent variable is unity if the Bloomberg-supplied *Abnormal Institutional Attention* measure is 0 or 1, and zero otherwise. Robust T-statistics, clustered at the firm level, are displayed in square brackets. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Overall	Scheduled News	Unscheduled News	
		Earnings Announcement	Rating Downgrades	8-K Filings
	(I)	(II)	(III)	(IV)
dDecember	0.11***	0.15	0.41**	0.29***
	[20.94]	[0.74]	[2.10]	[17.37]
SUE Rank		-0.29		
		[-0.83]		
dDecember × SUE Rank		0.07		
		[1.15]		
Observations	7721148	24389	655	156905
Pseudo R^2	0.00	0.18	0.15	0.13
Controls		Earn. Ann., Firm	Rating, Firm	8-K, Firm
Fixed Effects		Year, Day-of-Week	FF48, Year	FF48, Year
Clustering	Firm	Earn. Ann. Date	Firm	Firm

Table IX: Importance of Specific Weeks in Driving the December Effect

This table reports results determining the importance of specific weeks that drive the December effect. Panel A reports the results of credit rating downgrades, whereas Panel B reports the results of 8-K filings. The dependent variable in Panel A is the cumulative abnormal return over a three-day period centered on the day of the rating event, CAR[-1,+1]. In Panel B, the dependent variable is Abs(CAR[-1,+1]), centered on the 8-K filing date. Column (I) in both panels reports the specification displayed in Table IV. Column (II) reports the results of a regression model that examines the specific weeks driving the December distraction effect. *dDecember_1stHalf* is an indicator variable that equals one if the event is released between December 1 and December 15, and zero otherwise. Similarly, *dDecember_2ndHalf* is an indicator variable that equals one if the event is released between December 16 and December 31. The regressions for both panels include industry- and year-fixed effects. All the variables are defined in Appendix A. Robust T-statistics, clustered at the firm level, are displayed in square brackets. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Panel A: Rating Downgrades		Panel B: 8-K Filings	
	(I)	(II)	(I)	(II)
			Absolute	Absolute
	CAR[-1,+1]	CAR[-1,+1]	CAR[-1,+1]	CAR[-1,+1]
dDecember	1.78**		-0.52***	
	[2.08]		[-18.93]	
dDecember_1stHalf		1.46		-0.37***
		[1.12]		[-10.19]
dDecember_2ndHalf		2.14**		-0.69***
		[2.21]		[-18.17]
Observations	5336	5336	663299	663299
Adjusted R^2	0.11	0.11	0.19	0.19
Controls	Rating, Firm	Rating, Firm	8-K, Firm	8-K, Firm
Fixed Effects	FF48, Year	FF48, Year	FF48, Year	FF48, Year

Table X: Do Certain Firm Characteristics Mitigate or Exacerbate the December Effect?

This table reports the results of stock price reactions to bond rating downgrades (Panel A) and 8-K filings (Panel B). In Panel A, the dependent variable is the cumulative abnormal return over a three-day period centered on the day of the rating downgrade, CAR[-1,+1]. In column (I), *dProm* = 1 if firm size falls in the top quintile of the sample distribution and 0 otherwise. In column (II), *dProm* = 1 if the analyst following of a firm falls in the top quintile of the sample distribution and 0 otherwise. In column (III), *dProm* = 1 if the number of institutional owners in a firm falls in the top quintile of the sample distribution and 0 otherwise. In Panel B, the dependent variable is Abs(CAR[-1,+1]). Sub-Panel B.1 focuses on infrequent 8-K filers, and Sub-Panel B.2 focuses on frequent 8-K filers. In B.1, *dInfrequentFiler* is an indicator variable that equals one if the firm falls in the lowest quintile of the distribution of the number of 8-Ks filed, and zero otherwise. In B.2, *dFrequentFiler* is an indicator variable that equals one if the firm falls in the highest quintile of the distribution of the number of 8-Ks filed, and zero otherwise. The definition of *dProm* is consistent across Panels A and B. All columns include industry- and year-fixed effects. All the variables are defined in Appendix A. Robust T-statistics, clustered at the firm level, are displayed in square brackets. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Effects of Firm Characteristics on Response to Rating Downgrades

	MarketCap	NumAnalysts	NumInstOwn
	(I)	(II)	(III)
dDecember	2.31**	2.10*	1.86**
(Non-Prominent Firms in December)	[2.28]	[1.85]	[1.98]
dProm	-1.05	-0.10	0.50
	[-1.49]	[-0.15]	[0.90]
dDecember × *dProm*	-2.74*	-1.02	-0.31
	[-1.72]	[-0.63]	[-0.16]
Prominent Firms in December	-0.43	1.09	1.56
T-statistic	[-0.35]	[1.10]	[0.89]
N	5336	5336	5336
Adjusted R^2	0.11	0.11	0.11
Controls	✓	✓	✓
Fixed Effects	*FF48*, *Y*	*FF48*, *Y*	*FF48*, *Y*

Panel B: Effects of Firm Characteristics on Response to 8-K Filings

		B.1: Infrequent Filers			B.2: Frequent Filers		
		MarketCap	NumAnalysts	NumInstOwn	MarketCap	NumAnalysts	NumInstOwn
		(I)	(II)	(III)	(I)	(II)	(III)
dDecember	(A)	-0.58***	-0.54***	-0.56***	-0.49***	-0.47***	-0.47***
		[-15.74]	[-15.51]	[-15.22]	[-13.45]	[-13.15]	[-12.92]
dDecember × *dInfrequentFiler*	(B)	0.39***	0.36***	0.37***			
		[4.78]	[4.42]	[4.49]			
dDecember × *dInfrequentFiler* × *dProm*	(C)	-0.26	-0.11	-0.16			
		[-1.37]	[-0.53]	[-0.81]			
dDecember × *dFrequentFiler*	(D)				-0.04	0.00	-0.03
					[-0.55]	[0.06]	[-0.44]
dDecember × *dFrequentFiler* × *dProm*	(E)				0.20*	0.16	0.26**
					[1.86]	[1.34]	[2.30]
Non-Prominent, Infrequent Filers in December	(A) + (B)	-0.19***	-0.18**	-0.19***			
T-statistic		[-2.66]	[-2.49]	[-2.62]			
Prominent, Infrequent Filers in December	(A) + (C)	-0.84***	-0.65***	-0.72***			
T-statistic		[-4.24]	[-3.01]	[-3.45]			
Difference	(B) – (C)	0.65***	0.47*	0.53**			
T-statistic		[2.76]	[1.87]	[2.17]			
Non-Prominent, Frequent Filers in December	(A) + (D)				-0.54***	-0.47***	-0.51***
T-statistic					[-7.55]	[-7.43]	[-7.59]
Prominent, Frequent Filers in December	(A) + (E)				-0.29**	-0.31**	-0.22*
T-statistic					[-2.31]	[-2.31]	[-1.69]
Difference	(D) – (E)				-0.25	-0.16	-0.29*
T-statistic					[-1.40]	[-0.91]	[-1.69]
N		663299	663299	663299	663299	663299	663299
Adjusted R^2		0.19	0.19	0.19	0.19	0.19	0.19
Controls		✓	✓	✓	✓	✓	✓
Fixed Effects		*FF48, Y*	*FF48, Y*	*FF48, Y*	*FF48, Y*	*FF48, Y*	*FF48, Y*

Table XI: Types of Unscheduled News Events Driving the December Effect

This table reports results determining the importance of specific types of unscheduled news events that drive the December effect. Panel A reports the results for credit rating downgrades, whereas Panel B reports the results for 8-K filings. In Panel A, the dependent variable is the cumulative abnormal return over a three-day period centered on the day of the rating event. Column (I) reports the stock price reaction to rating downgrades which result in a downward movement of rating notches within the speculative grade class. Column (II) reports the same, but for downgrades which result in a downward movement of rating notches within the investment grade class. Finally, Column (III) reports the stock price reaction to downgrades which result in a downward movement of rating notches across the investment grade-speculative grade boundary. In Panel B, the dependent variable is Abs(CAR[-1,+1]), where CAR[-1,+1] is calculated using the market model. Column (I) accounts for the unobserved heterogeneity of broad sections of triggering events in determining the (absolute) immediate price response to 8-K filings through section fixed effects. Column (II) includes individual triggering event fixed effects. All regression specifications include industry- and year-fixed effects. All the variables are defined in Appendix A. Robust T-statistics, clustered at the firm level, are displayed in square brackets. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Panel A: Rating Downgrades			Panel B: 8-K Filings	
	SG-SG Downgrades	IG-IG Downgrades	IG-SG Downgrades	Section FE	Trigger FE
	(I) CAR[-1,+1]	(II) CAR[-1,+1]	(III) CAR[-1,+1]	(I) Abs(CAR[-1,+1])	(II) Abs(CAR[-1,+1])
dDecember	1.08	0.93	5.11**	-0.25***	-0.45***
	[0.85]	[1.63]	[2.56]	[-9.43]	[-16.94]
Observations	1855	2526	622	663299	660109
Adjusted R^2	0.10	0.05	0.15	0.21	0.20
Controls	Rating,Firm	Rating,Firm	Rating,Firm	8-K,Firm	8-K,Firm
Fixed Effects	*FF48, Y*	*FF48, Y*	*FF48, Y*	*FF48, Y, S*	*FF48, Y, T*

Table XII: Does Length of 8-K Filings Matter?

This table reports results of a regression model which examines the moderating effect of 8-K filing length on the December effect towards 8-K filings. 8-K length is defined as the logarithm of the number of words in the 8-K filing. This measure has been standardized to facilitate interpretation. The results in column (I) report the price response, while the results in Column (II) report the volume response. The regressions for the results in both columns include industry- and year-fixed effects. All the variables are defined in Appendix A. Robust T-statistics, clustered at the firm level, are displayed in square brackets. *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

	Abs(CAR[-1,+1])	CATO[-1,+1]
	(I)	(II)
dDecember	-0.49***	-0.30***
	[-17.67]	[-12.32]
Length (Std.)	0.38***	0.42***
	[44.15]	[59.92]
dDecember × Length (Std.)	-0.18***	-0.23***
	[-7.45]	[-12.19]
Observations	663299	663207
Adjusted R^2	0.19	0.04
8-K Controls	✓	✓
Firm Controls	✓	✓
Fixed Effects	*FF48, Y*	*FF48, Y*

Appendix A - Variable Definitions

Rating-level Control Variables

- *dDecember* is an indicator equal to one if the rating change is announced in December and zero otherwise
- *dFriday* is an indicator equal to one if the rating change is announced on Friday and zero otherwise
- *Previous Rating* is the credit rating level prior to the rating change. It is expressed as the natural logarithm of the cardinal rating scale
- *Abs(Rating Change)* is the absolute value of the difference in rating scale changes between after and before rating change events
- *Log(Days Since Last Rating)* is the natural logarithm of the number of days between the previous rating change in the same direction for the same bond issue, but by another rating agency. Following Jorion, Liu, and Shi (2005), the number of days is set to 60 if
  - if both rating agencies rate on the same day
  - if the rating by the second rating agency is in the opposite direction
  - if the rating change by the other rating agency is separated by more than 60 days
- *Earnings Ann Related* is an indicator variable equal to one if there is an earnings announcement within (-1,+1) days of the rating change event day, and zero otherwise

8-K-level Control Variables

- *dDecember* is an indicator equal to one if the 8-K form is filed in December and zero otherwise
- *dFriday* is an indicator equal to one if the 8-K form is filed on Friday and zero otherwise
- *Log(Days Since Last Filing)* is the natural logarithm of the number of days since the last 8-K filing by the same firm
- *Log(#8-K Filings Last Year)* is the natural logarithm of the number of 8-K filings by the same firm in the previous calendar year
- *Earnings Ann Triggered* is an indicator variable equal to one if there is an earnings announcement within (-7,+7) days of the 8-K filing event day, and zero otherwise
- *Sentiment Measure* helps capture the 'tone' of the 8-K filing. It is constructed in the following manner:
  - Utilize words list in Bodnaruk, Loughran, and McDonald (2015) to count the total number of positive and negative words in each 8-K filing[17]

[17]The words list can be found on Bill McDonald's website here: http://www3.nd.edu/~mcdonald/Word_Lists.html

- For each filing, calculate the difference between the number of positive words and the number of negative words, and scale this difference by the total number of words in the document (Note that this is a variant of the methodology used in Tetlock, Saar-Tsechansky, and Macskassy (2008))
- Sort above measure into quintiles at an annual frequency, with the lowest (highest) quintile representing the most negative (most positive) documents

Firm-level Control Variables

- *Size* is the natural logarithm of a firm's market capitalization in the quarter prior to experiencing an unscheduled event
- *MTB* is a firm's market-to-book ratio in the quarter prior to experiencing an unscheduled event
- *Profitability* is a firm's lagged quarterly ratio of operating income to sales
- *Leverage* is the firm's quarterly total debt divided by its assets
- *Earnings* is the firm's lagged quarterly ratio between income before extraordinary items and assets
- *Volatility* is the standard deviation of daily stock returns in the 30 trading days prior to experiencing an unscheduled event expressed in natural logarithm form
- *Average Trading Volume* is the average trading volume in the 30 trading days prior to experiencing an unscheduled event expressed in natural logarithm form
- *Average Return* is the average daily return in the 30 trading days prior to experiencing an unscheduled event
- *FF48* refers to the Fama-French 48 industry to which the firm belongs
- *FF12* refers to the Fama-French 12 industry to which the firm belongs

Internet Appendix:
December Doldrums, Investor Distraction, and Stock Market Reaction to Unscheduled News Events

This document contains additional results that supplement the main findings in the paper, but were left out of the main paper due to space considerations.

A brief summary of the additional tests is presented below:

- Table IA.I shows that our findings for 8-K filings are robust to the inclusion of an indicator variable that equals one if the filing firm releases earnings news in the 15-day window centered on the 8-K filing date, and zero otherwise. This helps ensure that our findings are not driven by earnings news-triggered filings.

- Table IA.II shows that the main December distraction effect towards unscheduled news (documented in Table IV) is different from the summer effect studied in Hong and Yu (2009).

- Table IA.III presents results for the probit models underlying the 1:5 propensity-score matched-samples analyzed in Table VI. It also provides descriptive statistics comparing the means of control variables used in the matching process prior to and following the construction of the matched sample.

- Table IA.IV shows that our results are robust to the use of a 1:1 propensity-score matched sample in addition to the 1:5 propensity-score matched sample studied in Table VI.

- Table IA.V shows that our baseline results (reported in Table IV) are robust to the use of Fama-French 12 industry-fixed effects instead of Fama-French 48 industry-fixed effects.

- Table IA.VI shows that our baseline results are robust to the use of industry $\times$ year fixed effects that account for time-varying trends within industry, clustering at the event date level, and double clustering along the firm and event date levels. In addition, we also show that our results are unchanged if we define CARs as the difference between the buy-and-hold return of the announcing firm and that of a size, book-to-market, and momentum matching portfolio based on Daniel et al. (1997).

- Table IA.VII shows that our baseline results are robust to the use of firm-fixed effects, year- and quarter-fixed effects, and year $\times$ quarter fixed effects.

- Table IA.VIII shows that our baseline results are robust to double clustering at the firm and month levels, which helps account for cross-sectional dependencies in the data.

- Table IA.IX shows that the Friday distraction effect towards earnings news documented in DellaVigna and Pollet (2009) extends to unscheduled news events.

- Table IA.X shows that our baseline results are not driven by information overload as documented in Hirshleifer, Lim, and Teoh (2009).

- Table IA.XI shows that our baseline results are not driven by investor attention towards market price movements as documented in Kottimukkalur (2017).

- Table IA.XII shows results documenting the immediate underreaction to December 8-K filings separately for broad sections of triggering events, as well as individual triggering events.
- Table IA.XIII lists the numbering and classification of credit rating codes.
- Table IA.XIV lists the various triggering events underlying the filing of a Form 8-K, grouped together under broad umbrella sections.

Table IA.I: Accounting for 8-K Filings Triggered by Earnings News

This table reports results which show that the December effect towards 8-K filings is not driven by earnings news-trigged filings. Cumulative abnormal returns are computed using the market model. The dependent variables in columns (I), (II), and (III) are CAR[-1,+1], CAR[-3,+1], and CAR[+2,+61], respectively, measured in trading days relative to the 8-K filing date. The regressions presented in columns (I) and (II) are conducted on the entire sample of 8-K filings, whereas the regression presented in column (III) is only conducted on 8-Ks filed in the months of December and January. All the variables are defined in Appendix A. Robust T-statistics, clustered at the firm level, are displayed in square brackets. *, ** and *** indicate significance at the 10%, 5%, and 1%, respectively.

	CAR[-1,+1]	CAR[-3,+1]	CAR[+2,+61]
	(I)	(II)	(III)
dDecember × Sentiment Measure	-0.04*	-0.09**	0.18*
	[-1.79]	[-2.26]	[1.91]
Sentiment Measure	0.15***	0.17***	0.11*
	[22.00]	[17.01]	[1.68]
dDecember	0.38***	0.72***	0.53
	[5.12]	[5.48]	[1.62]
Observations	644531	644522	95173
Adjusted R^2	0.01	0.03	0.08
Controls	✓	✓	✓
Earnings News Dummy	✓	✓	✓
Fixed Effects	FF48, Year	FF48, Year	FF48, Year

Table IA.II: Summer Effect in Price Reaction to Unscheduled News Events

This table reports results of stock price reactions to unscheduled news events. Panel A focuses on rating downgrade announcements, whereas Panel B focuses on 8-K filings. The dependent variable in Panel A is CAR[-1,+1], calculated using the market model. In Panel B, the dependent variable is Abs(CAR[-1,+1]). In Column (I) of both panels, the independent variable of interest, *dSummer*, is an indicator variable that equals unity when the unscheduled event occurs in July, August, or September and zero otherwise. This definition of summer months follows from Hong and Yu (2009). In Column (II) of both panels, *dSummer* equals unity if the unscheduled event occurs in June, July, or August and zero otherwise. The construction of all independent variables is explained in Appendix A. Robust T-statistics, clustered at the firm level, are displayed in square brackets. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Panel A: Rating Downgrades		Panel B: 8-K Filings	
	Hong and Yu (2009) Summer	Traditional Summer	Hong and Yu (2009) Summer	Traditional Summer
	(I) CAR[-1,+1]	(II) CAR[-1,+1]	(I) Abs(CAR[-1,+1])	(II) Abs(CAR[-1,+1])
dSummer	-0.11	-0.11	0.08***	0.01
	[-0.20]	[-0.21]	[5.23]	[0.60]
Observations	5336	5336	663299	663299
Adjusted R^2	0.11	0.11	0.19	0.19
Controls	Rating, Firm	Rating, Firm	8-K, Firm	8-K, Firm
Fixed Effects	FF48, Year	FF48, Year	FF48, Year	FF48, Year

Table IA.III: Propensity Score Matched Sample for Stock Price Reactions

This table presents results which highlight the process of creating a matched sample. All variables are defined in Appendix A. Panel A shows the results of the probit model used in the matching process. We estimate the probability of an unscheduled event occurring in December. In all columns, the dependent variable is an indicator variable that equals one if a downgrade occurs in December, and zero otherwise. Column (I) in Sub-Panel A.1 reports the results using the full sample of downgrades for which all independent variables are available. Column (II) in Sub-Panel A.1 reports the results of the probit model which is estimated using the propensity-score matched downgrade data. Congruently, Column (I) in Sub-Panel A.2 reports the results using the full sample of 8-K filings for which all independent variables are available, whereas Column (II) reports the results of the probit model which is estimated using the propensity-score matched 8-K filing data. In our matching algorithm, every firm downgraded in December (treatment firms) is matched with up to five firms that did not experience credit rating downgrades in December or Friday (control firms) based on the propensity score of experiencing an unscheduled event in December. In Sub-Panel A.1, the outcome variable on which the treatment and control groups are matched is the cumulative abnormal return over the three-day window centered on the date of the rating downgrade. In Sub-Panel A.2, the outcome variable used for matching is absolute value of the cumulative abnormal return over the three-day window centered on the date of the 8-K filing. *, **, and *** indicate statistical significance greater than the 10%, 5%, and 1% levels, respectively. In Panel B, we report the economic and statistical difference of firm characteristics between firms that experience credit rating downgrades in December and those that do not.

Panel A: Probit Regressions for Matching

	Rating Downgrades		8-K Filings	
	(I) Before match	(II) After match	(I) Before match	(II) After match
Abs(Rating Change)	-0.06**	-0.01		
	[-2.28]	[-0.39]		
Log(Days Since Last Rating)	0.03**	0.01		
	[2.06]	[0.67]		
Size	0.09***	0.03	0.05***	0.01***
	[3.38]	[1.00]	[18.71]	[4.68]
Market-to-Book	-0.12**	-0.06	-0.02***	-0.01***
	[-2.03]	[-0.78]	[-13.53]	[-4.67]
Leverage	0.33**	0.11	0.05***	0.01
	[2.43]	[0.65]	[5.23]	[0.62]
Profitability	0.20**	0.14	-0.00	-0.00
	[2.29]	[1.21]	[-1.18]	[-0.39]
Earnings	-2.49***	-1.25	-0.57***	-0.11**
	[-3.66]	[-1.49]	[-12.99]	[-2.08]
Log(Volatility)	0.17***	0.04	0.14***	0.05***
	[3.29]	[0.67]	[27.92]	[7.31]
Log(Trading Volume)	-0.05**	-0.01	-0.01***	-0.00
	[-2.03]	[-0.45]	[-3.99]	[-0.50]
Average Return	0.47	-3.54	-5.86***	-1.09
	[0.11]	[-0.70]	[-10.87]	[-1.65]
Log(#8-Ks Filed Last Year)			-0.11***	-0.02***
			[-31.51]	[-6.06]
Log(Days Since Last Filing)			-0.03***	-0.01***
			[-13.73]	[-3.19]
Observations	5360	2042	665280	237588
Pseudo R^2	0.02	0.00	0.01	0.00

Panel B: Sample means of firm variables used in the propensity-score matching

Rating Downgrades	Before Matching			After Matching		
	Mean		(Diff)	Mean		(Diff)
	Control	Treated	p-value	Control	Treated	p-value
Abs(Rating Change)	1.57	1.47	**	1.48	1.47	
Log(Days Since Last Rating)	4.56	4.71		4.68	4.72	
Size	8.01	8.13		8.11	8.18	
Market-to-Book	1.28	1.22	**	1.25	1.23	
Leverage	0.76	0.79	***	0.78	0.79	
Profitability	0.06	0.08		0.06	0.08	
Earnings	-0.01	-0.02	***	-0.01	-0.02	
Log(Volatility)	-3.45	-3.32	***	-3.37	-3.32	
Log(Trading Volume)	13.99	14.17	*	14.11	14.21	
Average Return	-0.00	-0.00	*	-0.00	-0.00	

8-K Filings	Before Matching			After Matching		
	Mean		(Diff)	Mean		(Diff)
	Control	Treated	p-value	Control	Treated	p-value
Log(#8-Ks Filed Last Year)	2.33	2.23	***	2.25	2.23	***
Log(Days Since Last Filing)	3.12	3.09	***	3.11	3.09	*
Size	6.47	6.49	***	6.48	6.49	*
Market-to-Book	1.85	1.82	***	1.84	1.82	**
Leverage	0.59	0.59	***	0.59	0.59	
Profitability	-0.51	-0.63	***	-0.61	-0.63	
Earnings	-0.01	-0.01	***	-0.01	-0.01	***
Log(Volatility)	-3.67	-3.58	***	-3.61	-3.58	***
Log(Trading Volume)	12.24	12.32	***	12.28	12.32	***
Average Return	0.00	0.00	***	0.00	0.00	**

Table IA.IV: December Effect in Stock Price Reaction to Credit Rating Changes - 1:1 Matching

Panel A of this table reports results of stock price reactions to bond rating changes in a 1:1 propensity-score matched sample with replacement. In column (I) of A.1 and A.2, the dependent variable is CAR[-1,+1] calculated using the market model over the three-day window centered on the date of the rating change. In column (I) of A.1 (A.2), downgrades (upgrades) occurring in December are matched to downgrades (upgrades) announced in other months. In column (II) of A.1 and A.2, the dependent variable is CAR[+2,+61] in trading days relative to the rating change date, and is calculated as the difference between the buy-and-hold returns of the firm experiencing the rating change and a matched size, book-to-market, and momentum portfolio. The 125 size-B/M-momentum portfolios are constructed using the methodology described in Daniel et al. (1997). In column (II) of A.1 (A.2), downgrades (upgrades) occurring in December are matched to downgrades (upgrades) announced in January. In columns (I) and (II) of Panel B, 8-K filings occurring in December are matched to 8-K filings occurring in other months of the year. The dependent variable in column (I) of Panel B is the absolute value of the three-day cumulative abnormal return (calculated using the market model) centered on the date of the 8-K filing. The dependent variable for the regression result reported in column (II) is CAR[-1,+1]. In column (III) of Panel B, 8-K filings occurring in December are matched to 8-K filings occurring in January. The dependent variable in columns (III) of Panel B is CAR[+2,+61] in trading days relative to the Form 8-K filing date. All the variables are defined in Appendix A. Robust T-statistics, clustered at the firm level, are displayed in square brackets. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Panel A: Rating Changes				Panel B: 8-K Filings		
	A.1: Downgrades		A.2: Upgrades				
	(I) CAR[-1,+1]	(II) CAR[+2,+61]	(I) CAR[-1,+1]	(II) CAR[+2,+61]	(I) Abs(CAR[-1,+1])	(II) CAR[-1,+1]	(III) CAR[+2,+61]
dDecember	2.32**	-6.12*	0.65	3.19	-0.57***	0.45***	0.55
	[2.03]	[-1.68]	[1.40]	[0.94]	[-16.58]	[4.20]	[1.60]
Sentiment Measure (SM)						0.20***	0.06
						[8.25]	[0.66]
dDecember × SM						-0.07**	0.21*
						[-2.16]	[1.81]
N	923	653	415	285	97166	93648	72635
Adjusted R^2	0.14	0.08	0.07	0.16	0.22	0.01	0.08
Controls	Rating, Firm	Rating, Firm	Rating, Firm	Rating, Firm	8-K, Firm	8-K, Firm	8-K, Firm
Fixed Effects	FF48, Year	FF48, Year	FF48, Year	FF48, Year	FF48, Year	FF48, Year	FF48, Year

Table IA.V: December Effect – Robustness to Alternative Industry Groupings

This table reports results that document the robustness of the December effect to alternative industry groupings. Panel A reports results for credit rating downgrades. In column (I), the dependent variable is CAR[-1,+1], calculated using the market model, and the regression is run on the full sample of downgrades. In column (II), the dependent variable is CAR[+2,+61], calculated in the 60-day trading period following the rating change announcement, as the difference between the buy-and-hold return of the firm experiencing the rating change and a matched size-B/M-momentum portfolio. The 125 size-B/M-momentum portfolios are constructed using the methodology described in Daniel et al. (1997). The regression in column (II) is run on downgrades that are announced in December and January.

Panel B reports results for 8-K filings. In column (I), the dependent variable is the absolute value of the 3-day CAR centered on the 8-K filing date. Columns (II) and (III) report the results for 8-K filings generating a negative immediate price reaction and a positive immediate price reaction, respectively. Columns (IV) and (V) report the results of sentiment analysis conducted on the 8-Ks. The dependent variable in column (IV) is CAR[-1,+1], and in column (IV) is CAR[+2,+61] measured in trading days relative to the 8-K filing date. The regressions in columns (I), (II), (III), and (IV) are conducted on the entire sample of 8-K filings, whereas the regression in column (V) is only conducted on 8-K filings occurring in the months of December and January.

All the control variables are defined in Appendix A. Robust T-statistics, clustered at the firm level, are displayed in square brackets. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively. *FF12*, *Y*, *F*, and *R* refer to Fama-French 12-industry, year, firm, and rating, respectively.

	Panel A: Rating Downgrades		Panel B: 8-K Filings				
			B.1: Baseline	B.2: Partitioned Samples		B.3: Sentiment Analysis	
	(I)	(II)	(I)	(II)	(III)	(IV)	(V)
	CAR[-1,+1]	CAR[+2,+61]	Absolute CAR[-1,+1]	Negative CAR[-1,+1]	Positive CAR[-1,+1]	CAR[-1,+1]	CAR[+2,+61]
dDecember	1.68**	-5.08*	-0.52***	0.65***	-0.38***	0.41***	0.44
	[1.98]	[-1.71]	[-19.07]	[19.79]	[-10.09]	[5.48]	[1.39]
Sentiment Measure (SM)						0.15***	0.12*
						[21.98]	[1.71]
dDecember × SM						-0.04*	0.15*
						[-1.72]	[1.65]
Observations	5337	825	665256	341916	323340	665256	98373
Adjusted R^2	0.12	0.05	0.19	0.20	0.19	0.01	0.08
Controls	*R,F*	*R,F*	8-K,*F*	8-K,*F*	8-K,*F*	8-K,*F*	8-K,*F*
Fixed Effects	*FF12,Y*	*FF12,Y*	*FF12,Y*	*FF12,Y*	*FF12,Y*	*FF12,Y*	*FF12,Y*

Table IA.VI: December Effect – Robustness to Alternative Econometric Specifications and Definitions of CARs

This table reports results documenting the robustness of the December effect in the stock price response to unscheduled news to alternative econometric specifications specifications and definitions of CARs. In Panel A.1 (B.1), the dependent variable is CAR[-1,+1] (Abs(CAR[-1,+1])), calculated using the market model. In Panel A.2 (B.2), the dependent variable is BHAR[-1,+1] (Abs(BHAR[-1,+1])), calculated as the difference between the buy-and-hold return of the firm experiencing an unscheduled event and that of a matching size, book-to-market, and momentum matching portfolio. In all four subpanels, column (I) includes industry- and year-fixed effects, with standard errors clustered at the firm level. Column (II) repeats the same analysis as column (I), but with standard errors clustered at the event-date level, with the event date being the date of the rating change in Panel A, and the 8-K filing date in Panel B. In column (III), standard errors are double clustered at the firm and event-date levels, and continues to include industry- and year-fixed effects. Columns (IV) through (VI) repeats the analysis of columns (I) through (III), but with industry-year fixed effects instead of industry- and year-fixed effects. All the control variables are defined in Appendix A. Robust T-statistics are displayed in square brackets. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively. *I*, *Y*, *F*, *RD*, and *FD* refer to Fama-French 48 industry groupings, year, firm, rating date, and 8-K filing date, respectively.

Panel A: Credit Rating Downgrades

	Panel A.1: CAR[-1,+1]						Panel A.2: BHAR[-1,+1]					
	(I)	(II)	(III)	(IV)	(V)	(VI)	(I)	(II)	(III)	(IV)	(V)	(VI)
dDecember	1.78**	1.78**	1.78*	1.66*	1.66*	1.66*	1.70***	1.70***	1.70**	1.91***	1.91***	1.91**
	[2.08]	[2.13]	[1.94]	[1.84]	[1.85]	[1.72]	[2.67]	[2.70]	[2.55]	[2.66]	[2.68]	[2.56]
Observations	5336	5336	5336	5234	5234	5234	5003	5003	5003	4896	4896	4896
Adjusted R^2	0.11	0.11	0.11	0.10	0.10	0.10	0.11	0.11	0.11	0.10	0.10	0.10
Rating Controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Firm Controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Fixed Effects	*I,Y*	*I,Y*	*I,Y*	*I*×*Y*	*I*×*Y*	*I*×*Y*	*I,Y*	*I,Y*	*I,Y*	*I*×*Y*	*I*×*Y*	*I*×*Y*
Clustering	*F*	*RD*	*F,RD*	*F*	*RD*	*F,RD*	*F*	*RD*	*F,RD*	*F*	*RD*	*F,RD*

Panel B: 8-K Filings

	Panel B.1: Abs(CAR[-1,+1])						Panel B.2: Abs(BHAR[-1,+1])					
	(I)	(II)	(III)	(IV)	(V)	(VI)	(I)	(II)	(III)	(IV)	(V)	(VI)
dDecember	-0.52***	-0.52***	-0.52***	-0.52***	-0.52***	-0.52***	-0.48***	-0.48***	-0.48***	-0.48***	-0.48***	-0.48***
	[-18.93]	[-13.88]	[-12.87]	[-18.88]	[-13.82]	[-12.81]	[-17.53]	[-12.25]	[-11.53]	[-17.49]	[-12.18]	[-11.47]
Observations	663299	663299	663299	663299	663299	663299	589994	589994	589994	589994	589994	589994
Adjusted R^2	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
8-K Controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Firm Controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Fixed Effects	*I,Y*	*I,Y*	*I,Y*	*I*×*Y*	*I*×*Y*	*I*×*Y*	*I,Y*	*I,Y*	*I,Y*	*I*×*Y*	*I*×*Y*	*I*×*Y*
Clustering	*F*	*FD*	*F,FD*	*F*	*FD*	*F,FD*	*F*	*FD*	*F,FD*	*F*	*FD*	*F,FD*

Table IA.VII: December Effect – Accounting for Macroeconomic Trends

This table reports results that document the robustness of the December effect to concerns of varying macroeconomic trends within the year. In Panel A (Panel B), we report results for credit rating downgrades (8-K filings). The dependent variable in the results reported in Panel A (Panel B) is CAR[-1,+1] (Abs(CAR[-1,+1])), calculated using the market model. Column (I) of both panels report results that account for industry-, year-, and quarter-fixed effects. Column (II) in both panels reports results for regressions that include industry- and year-quarter-fixed effects. The analysis in columns (I) and (II) is repeated in columns (III) and (IV), but with firm-fixed effects instead of industry-fixed effects. All the control variables are defined in Appendix A. Robust T-statistics, clustered at the firm level, are displayed in square brackets. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively. I, Y, Q, F, and R refer to Fama-French 48 industry groupings, year, quarter, firm, and rating, respectively.

	Panel A: Rating Downgrades				Panel B: 8-K Filings			
	(I)	(II)	(III)	(IV)	(I)	(II)	(III)	(IV)
dDecember	1.87**	1.97**	1.70*	1.89**	-0.58***	-0.59***	-0.57***	-0.58***
	[1.97]	[2.05]	[1.95]	[2.12]	[-19.77]	[-19.95]	[-19.72]	[-19.85]
Observations	5336	5336	5337	5337	663299	663299	665280	665280
Adjusted R^2	0.11	0.11	0.16	0.16	0.19	0.19	0.21	0.21
Controls	R,F	R,F	R,F	R,F	8-K,F	8-K,F	8-K,F	8-K,F
Fixed Effects	I,Y,Q	$I,Y\times Q$	F,Y,Q	$F,Y\times Q$	I,Y,Q	$I,Y\times Q$	F,Y,Q	$F,Y\times Q$

Table IA.VIII: December Effect – Addressing Cross-Sectional Heterogeneity

This table reports results of the December effect while accounting for cross-sectional dependencies in the data. In Panel A (Panel B), we report results for credit rating downgrades (8-K filings). The dependent variable in the results reported in Panel A (Panel B) is CAR[-1,+1] (Abs(CAR[-1,+1])), calculated using the market model. Column (I) of both panels reports results that account for industry- and year-fixed effects. Columns (II) and (III) report results that include industry-, year-, and quarter-fixed effects, and industry- and year-quarter-fixed effects, respectively. The analysis in columns (I)–(III) is repeated in columns (IV)–(VI), but with firm-fixed effects instead of industry-fixed effects. Robust T-statistics, double clustered at the firm and month levels, are displayed in square brackets. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively. I, Y, Q, F, R, and M refer to Fama-French 48 industry groupings, year, quarter, firm, rating, and month, respectively.

	Panel A: Rating Downgrades						Panel B: 8-K Filings					
	(I)	(II)	(III)	(IV)	(V)	(VI)	(I)	(II)	(III)	(IV)	(V)	(VI)
dDecember	1.78***	1.87*	1.97*	1.26**	1.70**	1.89**	-0.52***	-0.58***	-0.59***	-0.49***	-0.57***	-0.58***
	[4.00]	[2.03]	[2.02]	[2.58]	[2.35]	[2.46]	[-6.82]	[-3.39]	[-3.44]	[-6.82]	[-3.41]	[-3.45]
Observations	5336	5336	5336	5337	5337	5337	663299	663299	663299	665280	665280	665280
Adjusted R^2	0.11	0.11	0.11	0.16	0.16	0.16	0.19	0.19	0.19	0.21	0.21	0.21
Controls	R,F	R,F	R,F	R,F	R,F	R,F	8-K,F	8-K,F	8-K,F	8-K,F	8-K,F	8-K,F
Fixed Effects	I,Y	I,Y,Q	I,$Y\times Q$	F,Y	F,Y,Q	F,$Y\times Q$	I,Y	I,Y,Q	I,$Y\times Q$	F,Y	F,Y,Q	F,$Y\times Q$

Table IA.IX: Friday Effect in Response to Unscheduled News Events

This table reports results documenting the presence of a weekend-proximity effect in the market response to credit rating downgrades. In Panel A, the analysis is conducted on the full sample of rating downgrades. In Column (I), the dependent variable is the abnormal return calculated on the date of the rating downgrade using the market model, whereas the dependent variable in Column (II) is the abnormal stock turnover on the date of the rating downgrade. Panel B is defined analogously for rating upgrades. In Panel C, the analysis is conducted on 8-K filings. In Column (I), the dependent variable is the absolute cumulative abnormal return calculated on the date of the filing using the market model. In Column (II), the dependent variable is the abnormal stock turnover on the date of the 8-K filing. All the control variables are defined in Appendix A. Robust T-statistics, clustered at the firm level, are displayed in square brackets. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Panel A: Rating Downgrades		Panel B: Rating Upgrades		Panel C: 8-K Filings	
	(I) CAR[0,0]	(II) CATO[0,0]	(I) CAR[0,0]	(II) CATO[0,0]	(I) Abs(CAR[0,0])	(II) CATO[0,0]
dFriday	0.82***	-0.14**	0.01	0.07	-0.14***	-0.06***
	[2.60]	[-2.30]	[0.10]	[1.10]	[-10.71]	[-9.88]
Observations	5316	5321	2911	2912	663202	663207
Adjusted R^2	0.08	0.12	0.01	0.05	0.16	0.02
Controls	*R,F*	*R,F*	*R,F*	*R,F*	8-K, *Y*	8-K, *Y*
Fixed Effects	*FF48, Y*	*FF48, Y*	*FF48, Y*	*FF48, Y*	*FF48, Y*	*FF48, Y*

Table IA.X: Information Overload in December?

This table reports results determining the importance of information overload in driving the holiday season distraction effect. Information overload is defined as the number of competing earnings announcements, rating change announcements, and 8-K filings made on any given trading day. *IO Rank* is the information overload ranking variable formed by ranking trading days into quintiles based on the total number of competing earnings announcements, rating change announcements, and 8-K filings made on a given day. The quintiles are formed on the basis of monthly sorts. Panel A focuses on the full sample of rating downgrades, with the dependent variable being CAR[-1,+1] (calculated using the market model), while Panel B focuses on the full sample of 8-K filings, with the dependent variable being Abs(CAR[-1,+1]). Column (I) in both panels focuses on the subsample of "low overload" days (bottom quintile), while Column (II) focuses on the subsample of "high overload" days (top quintile). All the variables are defined in Appendix A. Robust T-statistics, clustered at the firm level, are displayed in square brackets. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Rating Downgrades		8-K Filings	
	(I) Low Overload	(II) High Overload	(I) Low Overload	(II) High Overload
dDecember	5.94**	2.85**	-0.16**	-0.79***
	[2.14]	[2.44]	[-2.11]	[-14.73]
Observations	654	1200	63542	188890
Adjusted R^2	0.27	0.15	0.21	0.18
Controls	Rating, Firm	Rating, Firm	8-K, Firm	8-K, Firm
Fixed Effects	FF48, Year	FF48, Year	FF48, Year	FF48, Year

Table IA.XI: Attention to Large Market Price Movements?

This table reports results determining the importance of attention to aggregate market movements in driving the holiday season distraction effect. Market movement is defined as the absolute value of the daily return on the CRSP value-weighted index. *MMRANK* is the market movement ranking variable formed by ranking trading days into quintiles based on the absolute aggregate market movement on a given day. The quintiles are formed on the basis of quarterly sorts, and these quintile break points are lagged to avoid look-ahead bias. Panel A focuses on the full sample of rating downgrades, with the dependent variable being CAR[-1,+1] (calculated using the market model), while Panel B focuses on the full sample of 8-K filings, with the dependent variable being Abs(CAR[-1,+1]). Column (I) in both panels focuses on the subsample of "small movement" days (bottom quintile), while Column (II) focuses on the subsample of "large movement" days (top quintile). All the variables are defined in Appendix A. Robust T-statistics, clustered at the firm level, are displayed in square brackets. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Rating Downgrades		8-K Filings	
	(I) Small Movement	(II) Large Movement	(I) Small Movement	(II) Large Movement
dDecember	3.43**	6.18**	-0.57***	-0.50***
	[2.52]	[2.04]	[-11.80]	[-8.15]
Observations	1169	1180	137649	155057
Adjusted R^2	0.19	0.10	0.19	0.20
Controls	Rating, Firm	Rating, Firm	8-K, Firm	8-K, Firm
Fixed Effects	FF48, Year	FF48, Year	FF48, Year	FF48, Year

Table IA.XII: December Effect in Stock Price Response to 8-K Filings by Sections and Triggers

This table reports results documenting the December effect in the stock price response to 8-K filings. Panel A reports results by broad sections of triggering events. We follow Zhao (2016) and focus on five broad sections: Business and Operations (Section 1), Financial Information (Section 2), Corporate Governance (Section 5), Regulation FD (Section 7), and Other Events (Section 8). In Panel B, we study the December effect in response to individual trigger events underlying the above five categories. The dependent variable in all columns is the absolute value of CAR[-1,+1], calculated in the three day window centered on the 8-K filing date. All the control variables are defined in Appendix A. Robust T-statistics, clustered at the firm level, are displayed in square brackets. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A: December Effect in Response to 8-K Filings by Filing Sections

	Section 1: BusOps	Section 2: FinInfo	Section 5: CorpGov	Section 7: RegFD	Section 8: Other
dDecember	-0.22***	-0.63***	-0.24***	-0.23***	-0.22***
	[-4.24]	[-9.84]	[-6.00]	[-3.70]	[-5.71]
Observations	92777	242481	138449	124268	228094
Adjusted R^2	0.20	0.17	0.21	0.20	0.22
Controls	8-K,F	8-K,F	8-K,F	8-K,F	8-K,F
Fixed Effects	*FF48*,Y	*FF48*,Y	*FF48*,Y	*FF48*,Y	*FF48*,Y

Panel B: December Effect in Response to 8-K Filings by Triggering Events

	Section 1: Business and Operations				Section 2: Financial Information					
	Entry MDA	Term. MDA	Bankruptcy	Mine Safety	Acq./Dis. Assets	Results Ops. Cond.	Creation DFO	Trigger DFO	Costs Exit Disposal	Impair
dDecember	-0.23***	0.10	-0.11	2.79	-0.24***	0.12	-0.32***	1.08	-0.80***	-0.75**
	[-4.29]	[0.65]	[-0.24]	[1.12]	[-2.79]	[1.18]	[-4.16]	[1.17]	[-2.84]	[-2.11]
Observations	87822	7934	2328	118	36925	191304	21858	678	3544	2137
Adjusted R^2	0.20	0.24	0.36	0.18	0.20	0.18	0.25	0.36	0.18	0.24
Controls	8-K,F	8-K,F	8-K,F	8-K,F	8-K,F	8-K,F	8-K,F	8-K,F	8-K,F	8-K,F
Fixed Effects	*FF48*,Y	*FF48*,Y	*FF48*,Y	*FF48*,Y	*FF48*,Y	*FF48*,Y	*FF48*,Y	*FF48*,Y	*FF48*,Y	*FF48*,Y

	Section 5: Corporate Governance					
	Changes Control	Officers	Amend. Articles	Temp. Susp. Trading	Sub. Vote	SH Dir. Nominations
dDecember	-0.02	-0.26***	-0.46***	0.57	0.16	1.11
	[-0.04]	[-6.42]	[-4.31]	[1.57]	[0.85]	[0.78]
Observations	3404	121417	17575	742	19191	75
Adjusted R^2	0.27	0.20	0.23	0.30	0.19	0.26
Controls	8-K,F	8-K,F	8-K,F	8-K,F	8-K,F	8-K,F
Fixed Effects	*FF48*,Y	*FF48*,Y	*FF48*,Y	*FF48*,Y	*FF48*,Y	*FF48*,Y

Table IA.XIII: Classification by Rating Agencies

The table presents mapping of rating codes issued by the credit rating agencies to the cardinal scale we use in our analysis. The rating codes used by S&P and Fitch are similar and are different from those used by Moody's. Moody's uses code from Aaa down to C to rate bonds whereas S&P rates bonds from AAA down to D. Within the 6 classes - AA to CCC for S&P and Aa to Caa for Moody's, both rating agencies have three additional gradations with modifiers +,- for S&P and 1,2,3 for Moody's (For example AA+, AA, AA- for S&P and Aa1, Aa2, Aa3 for Moody's). We transformed the credit ratings for S&P (Moody's) into a cardinal scale starting with 1 as AAA (Aaa), 2 as AA+ (Aa1), 3 as AA (Aa2), and so on until 23 as the default category. As Fitch provides three ratings for default, following Jorion, Liu and Shi (2005), we chose 23 instead of 22 for the default category which is the average of the default DD rating.

Explanation	Standard & poor's (modifiers)	Moody's (modifiers)	Fitch (modifiers)	Cardinal Scale
Investment grade				
Highest grade	AAA	Aaa	AAA	1
High grade	AA (+,none,-)	Aa (1,2,3)	AA (+,none,-)	2,3,4
Upper medium grade	A (+,none,-)	A (1,2,3)	A (+,none,-)	5,6,7
Medium grade	BBB (+,none,-)	Baa (1,2,3)	BBB (+,none,-)	8,9,10
Speculative grade				
Lower medium grade	BB (+,none,-)	Ba (1,2,3)	BB (+,none,-)	11,12,13
Speculative	B (+,none,-)	B (1,2,3)	B (+,none,-)	14,15,16
Poor standing	CCC (+,none,-)	Caa (1,2,3)	CCC (+,none,-)	17,18,19
Highly speculative	CC	Ca	CC	20
Lowest quality	C	C	C	21
In default	D		DDD/DD/D	23

Table IA.XIV: Classification of 8-K Filings

This table presents information on various material events that trigger a public company's obligation to file a current report. The various kinds of material events, called items, are aggregated into broad sections.

Section Number	Section Name	Item	Description
1	**Registrant's Business and Operations**	1.01	Entry into a material definitive agreement
		1.02	Termination of a material definitive agreement
		1.03	Bankruptcy or receivership
		1.04	Mine safety - Reporting of shutdowns or patterns of violations
2	**Financial Information**	2.01	Completion of acquisition or disposition of assets
		2.02	Results of operations and financial condition
		2.03	Creation of a direct financial obligation or an obligation under an off-balance sheet arrangement of a registrant
		2.04	Triggering events that accelerate or increase a direct financial obligation under an off-balance sheet arrangement
		2.05	Costs associated with exit or disposal activities
		2.06	Material impairments
3	**Securities and Trading Markets**	3.01	Notice of delisting or failure to satisfy a a continued listing rule or standard; transfer of listing
		3.02	Unregistered sales of equity securities
		3.03	Material modification of rights of security holders
4	**Matters Related to Accountants and Financial Statements**	4.01	Changes in registrant's certifying accountant
		4.02	Non-reliance on previously issued financial statements or a related audit report or completed interim review

5	**Corporate Governance and Management**	5.01	Changes in control of registrant
		5.02	Departure of directors or certain officers; election of directors; appointment of certain officers; compensatory arrangements of certain officers
		5.03	Amendments to articles by incorporation or bylaws; change in fiscal year
		5.04	Temporary suspension of trading under registrant's employee benefit plan
		5.05	Amendment to registrant's code of ethics, or waiver of a provision of the code of ethics
		5.06	Change in shell company status
		5.07	Submission of matters to a vote of security holders
		5.08	Shareholder director nominations
6	**Asset-Backed Securities**	6.01	ABS informational and computational material
		6.02	Change of servicer or trustee
		6.03	Change in credit enhancement or other external support
		6.04	Failure to make a required distribution
		6.05	Securities act updating disclosure
7	**Regulation FD**	7.01	Regulation FD disclosure
8	**Other Events**	8.01	Other events
9	**Financial Statements and Exhibits**	9.01	Financial statements and exhibits