Rev Account Stud (2010) 15:752–778
DOI 10.1007/s11142-009-9114-7

The new Form 8-K disclosures

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Published online: 9 October 2009

Abstract The Securities and Exchange Commission (SEC) has mandated new disclosure requirements in Form 8-K, which became effective on August 23, 2004. The SEC expanded the list of items that have to be reported and accelerated the timeliness of these reports. This study examines the market reactions to 8-Ks filed under the new SEC regime and investigates whether periodic reports (10-K/Qs) became less informative under the new 8-K disclosure rules. We observe that the newly required 8-K items constitute over half of all filings and that most firms disclose the required items within the new shortened period (four business days). We find that all disclosed items (old and new) are associated with abnormal volume and return volatility around both the event and the SEC filing dates, and some items have significant return drifts after the SEC filings. Surprisingly, we find that the information content of periodic reports has not diminished by the more expansive and timely 8-K disclosures under the new guidance, possibly indicating that investors may use periodic filings to interpret the effects of material events that had been disclosed earlier.

Keywords SEC · Regulation · Form 8-K · Stock market response

JEL Classification G14 · G18 · K22 · M48

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1 Introduction

The SEC requires public companies to file, in a timely fashion, reports of material events. These Form 8-K filings alert shareholders to potentially significant events such as an initiation of bankruptcy proceedings, a change in the certifying accountant, or a significant acquisition of assets. The SEC has recently promulgated a new guidance expanding the scope of events that may trigger the filing of a Form 8-K and significantly reducing the delay in the filing of such reports (SEC 2004). The new SEC rule, "Additional Form 8-K Disclosure Requirements and Acceleration of Filing Date," introduced or significantly amended 12 items that the commission deemed relevant to the public. It also reorganized all disclosure items into topical categories and shortened the filing deadline for all mandatory items to four business days (from the prior deadlines of between five and 15 days depending on the item). This study (1) investigates the market reactions to 8-K reports filed under the new regime, and (2) examines the change in the information content of periodic reports as a result of the expanded disclosure of material events prior to the periodic reports.

We first document the content and timeliness of, and the market reactions to, Forms 8-K filed under the new SEC regime. Using a large sample of 8-Ks filed in 2005, 2006, and 2007, we document that new or largely expanded items (henceforth, referred to together as "new" items) are present in over half of all filings made during this period. Examining the timeliness of filings under the new guidance, we observe that nearly 95% of filings are made within the new four-business-day deadline and voluntary and semi-voluntary events are reported in the timeliest manner (consistent with prior literature's results). We show that the new items have significant information content as measured by the abnormal trading volume and abnormal return volatility around both the event date (the day on which the event occurred, when information may have been disclosed to the market through a press release) and the Form 8-K filing date. The majority of the new items also exhibit significant abnormal *signed* stock price reactions around the event date, the filing date or both (of appropriate direction where the sign could be hypothesized).[1] Additionally, some of the items exhibit significant drifts in return for up to 90 days after the SEC filings. Similar results are obtained for items that have been previously disclosed in Forms 8-K, indicating that both the new events and those previously disclosed are informative to the market after 2004. Overall, we conclude that with the promulgation of the new 8-K guidance the SEC provided the investors timely access to relevant corporate information.

Some of the items disclosed in 8-K filings under the new guidance were previously revealed to the market in periodic 10-K and 10-Q reports. Thus, expanded timely reporting of material items after 2004 may have reduced the information content of periodic reports. Using a sample of all 8-Ks, 10-Ks, and 10-Qs filed from 1994 through 2007, we observe that the information content of periodic reports, as measured by the abnormal trading volume and the abnormal return volatility around their filing dates, increases over time. The increase is

[1] Throughout the paper references to unsigned market reaction measures refer to abnormal trading volume and abnormal stock price volatility.

statistically significant around the promulgation of the SEC 8-K guidance in 2004. We conclude that the additional disclosure of material developments via 8-K reports did not reduce the information content of periodic reports, but rather increased it, possibly because investors assess the effects of previously disclosed material events (in 8-Ks) on financial results announced in periodic reports.

Our study contributes to the current literature on Form 8-K filings by addressing new questions using a sample several orders of magnitude larger than those in prior studies. First, it examines the information content of the recently added items. Second, it examines the market reactions to all items not only through signed returns but also by examining contemporaneous return volatility and trading volume as well as investigating whether there is a drift in returns beyond the SEC filing date. Lastly, it examines whether greater event-time disclosure is associated with a decrease in information content of periodic reports. Our study is relevant for researchers who are interested in the market effects of company disclosures through SEC filings, to regulators who can assess the effects of additional mandatory disclosures on market reactions, and to investors who can assess the information content of specific 8-K forms.

The next section provides detail on the new SEC Form 8-K guidance, reviews the literature, and formulates the research questions. The third section defines our variables and describes our sample. The fourth section presents and discusses our empirical results, and the final section summarizes our findings and provides our conclusions.

2 Background and research questions

2.1 SEC guidance

Among the purposes of the Securities Exchange Act of 1934 was the promotion of full public disclosure of relevant company information. The act requires firms to disclose information to the public about their financial and managerial conditions that is considered to be "material." Since that time, Form 8-K, the "current report," has been used by firms to disclose timely information on important changes in their operations or financial conditions between periodic reports. Originally, the form had to be filed with the SEC within 10 days of the end of any month during which certain significant events occurred. These events included a change in control of the registrant, an acquisition or disposal of assets, bankruptcy or receivership, change in registrant's certifying accountants, resignation of registrant's directors, a change in fiscal year end, and other unspecified events deemed important, as well as any related exhibits and financial statements. Two more events were subsequently defined: amendments to or waivers of the company's code of ethics and a temporary suspension of trading under the company's employee benefit plans. In the late 1980s, the deadline for filing Forms 8-K for nonvoluntary events was shortened to five through 15 days after the occurrence of the event.[2]

[2] SEC financial reporting release no. 34 (1989).

In June 2002, the SEC proposed a rule to increase the number of events reportable on a Form 8-K and to shorten the filing deadline for most items to two business days.[3] The SEC was motivated by investors' increasing demand for "real-time" access to relevant and reliable information and by the desire to reduce opportunities for securities fraud. The guidance discussion was further influenced by the Sarbanes–Oxley Act, enacted by Congress in July of 2002. Section 409 of Sarbanes–Oxley mandates the public disclosure in plain English and "on a rapid and current basis" of all material changes to financial conditions or operations of the firm. Correspondingly, the SEC felt that the proposed amendments for Form 8-K were responsive to the real time issuer disclosure mandated in Section 409. The final rule was issued on March 16, 2004, in an SEC release 33-8400 with compliance required by August 23, 2004.

The final rule, "Additional Form 8-K Disclosure Requirements and Acceleration of Filing Date" (SEC 2004), made three main amendments to prior guidance. It expanded the scope of the events subject to Form 8-K disclosure, created a new topical format, and shortened the filing deadline. The number of reportable events was increased to 22. There were eight new mandatory items added to Form 8-K: entry into or termination of a material agreement, creation or increase of an off-balance sheet obligation, exit or disposal activities, material impairments, notice of delisting, and non-reliance on a previously issued reports. In addition, two items were transferred from the periodic 10-Q and 10-K reports to continuous and timely disclosure in the 8-K—unregistered sale of securities and modifications to the rights of security holders—and two more items were expanded to the point of essentially becoming new items—departure of directors and amendments to bylaws. Several items either remained or were introduced on a voluntary or a semi-voluntary basis.[4] The new set of covered events was further reorganized and renumbered into topical categories (see "Appendix" for a detailed list of categories and items). The last drastic change introduced by Rule 33-8400 was the shortened filing deadline for Forms 8-K. Although the proposed rule suggested that filings be made within two business days of the event, many of the 85 comment letters received by the SEC expressed apprehension at such a short period. Consequently, the SEC shortened the deadline for all nonvoluntary items to four business days following the occurrence of the event. All public domestic companies must make their SEC filings available on EDGAR (the Electronic Data Gathering, Analysis, and Retrieval system), which ensures that the reports are generally available to the public within, at most, one business day of the filing. Thus, the new Form 8-K guidance enables the public to receive information regarding material events within five business days of their occurrence.

[3] Proposed rule: Additional Form 8-K Disclosure Requirements and Acceleration of Filing Date, release no. 33-8106, release no. 34-46084 (June 17 2002).

[4] Filings of 8-Ks for semi-voluntary items are triggered by the firm's voluntary disclosure of material events. These include "Results of Operations" and "Regulation FD Disclosures."

2.2 Prior studies

The majority of prior studies related to Form 8-K disclosures examine either auditor-change related flings or earnings announcements. The auditor-change related literature examines questions such as whether disclosures of auditor changes are made promptly (Schwartz and Soo 1996; Ettredge et al. 2001) and whether such disclosures have information content (Whisenant et al. 2003). The earnings announcement literature is extensive and addresses issues including the timing of the announcements (Chambers and Penman 1984; Begley and Fischer 1998), the persistent drift of stock prices after to the announcements (Bernard and Thomas 1989, 1990; Collins and Hribar 2000), and, of course, the market reaction around the earnings announcements. The studies of immediate reaction to earnings announcements examine stock prices (Easton and Zmijewski 1989; Ball and Kothari 1991), volume and volatility of trading (Beaver 1968; Bamber and Cheon 1995; Landsman and Maydew 2002), and behavior of sophisticated investors and analysts (Cornell and Landsman 1989; El-Gazzar 1998). These studies conclude that earnings announcements are valuation relevant and are heavily relied on by market participants. They use the preliminary earnings report date, which is available in the Compustat Quarterly database. This date may or may not be the same date on which a Form 8-K disclosing the new earnings information is filed. In fact, many of the firms have not filed a Form 8-K to disclose their new quarterly or annual earnings prior to 2003, so the earnings-related findings are difficult to generalize to other events disclosed by firms in their Forms 8-K.[5] Feldman et al. 2008 examine another event disclosed via a Form 8-K, Item 4.02, "Non-Reliance on Previously Issued Financial Statements," and find abnormal negative reactions to restatement announcements with negative drifts in returns subsequently.

A few papers examine all events included in Form 8-K disclosure. Carter and Soo 1999 investigate the timeliness of and the stock price reaction to a sample of 5,736 8-Ks from 1993. They find that a quarter of the sample 8-Ks are filed later than the deadline of 5–15 days and that bad (good) news are on average disclosed later (earlier) and with greater instances of deadline noncompliance. Carter and Soo 1999 also observe a strong price reaction around the event date but find that only relatively timely filings (within seven calendar days of the event) exhibit significant price reaction at the filing date. They conclude that the timeliness of a filing determines its informativeness. Pinsker 2006 is a descriptive follow up to Carter and Soo's timeliness study in the post Sarbanes–Oxley era. Using a sample of 462 reportable events from the last 3 months of 2004, the author finds an improvement in timeliness, with 95% of the Forms 8-K filed within four business days of the event.

2.3 Research questions

The literature on Forms 8-K is sparse and leaves a lot of room for further investigation. Thus, we formulate and address the following research questions.

[5] In 2003 the SEC promulgated Regulation G (SEC release no. 33-8176) mandating the furnishing of a Form 8-K within five business days of any public disclosure related to fiscal period results of operations.

Question 1 Are Forms 8-K filed under the new SEC guidance informative to the market?

As discussed previously, the SEC added new Form 8-K items and simultaneously shortened the filing period for these and for the existing items. It is unclear a priori if these additional items are value-relevant to investors, given that they are required to be filed for the first time after 2004. If they were deemed important, these events could have been disclosed voluntarily prior to 2005. Furthermore, the shorter filing period may mean more firms are likely to err in their initial filings of both new and existing 8-K items.[6] The literature to date has focused on signed returns to infer whether investors use the information in Forms 8-K. However, in many cases, the direction of the market reaction to the new information is unclear. For example, is a CEO resignation a good or bad signal for investors? It may be a good signal if the CEO's prior performance had been inferior but a bad signal if the CEO's performance was superior and the CEO is moving to manage a larger competitor. Thus, to address the question of informativeness, we examine both the price and volume reactions to the newly disclosed items (as well as the price and volume reactions to the old 8-K items in the new regime).[7] Furthermore, we examine the delayed stock price reaction to the events reported in Form 8-K, whether these items are newly required or previously disclosed. Given the documented evidence of under-reaction to preliminary earnings announcements, it is only natural to ask whether such under-reaction also exists for other Form 8-K events.

Question 2 Is the expanded Form 8-K disclosure after 2004 associated with a decrease in information content of periodic reports?

McNichols and Manegold (1983) find that the mandated introduction of quarterly 10-Q filings reduced the information content of annual 10-K reports. This posits a question whether expanded and timely disclosures under Form 8-K filings are also likely to reduce the information content of periodic reports. However, it is far from clear that such a decline should be expected. First, several of the items newly reported on Forms 8-K after 2004 could have been voluntarily disclosed in earlier years. It is also possible that early disclosure of an event via Form 8-K alerts the market to the presence of a significant material development but does not provide sufficient detail to accurately evaluate the event's impact.[8] Investors may actually need to pay closer attention to future periodic reports to adequately assess the effects of the event on financial results. In that case, one would expect the reaction to the periodic reports to be even greater than before the expanded Form 8-K disclosures.

[6] Bernstein (2004) points out the complexity of certain transactions and the time it would take to analyze them, determine the necessity of an 8-K, draft the document for SEC submission, review with relevant parties, and file. He hypothesizes that the shortened period will lead to lower quality reports and the sheer increase in Form 8-K filings will reduce the information content of the 8-K filings.

[7] Focusing only on the post-2004 period enables us to examine the reaction to various reported events separately. While we do have the data on the filing and event dates of 8-K filings prior to August of 2004, the current database does not reliably separate these earlier filings by the event being reported.

[8] For example, when firms disclosed a problem with option backdating in their Form 8-K, they rarely provided estimates of the likely effects of the restatement on earnings and the financial statements. Market participants found out these effects only in subsequent periodic filings.

3 Sample selection and variables

3.1 Sample selection

We obtain the initial filings of Forms 8-K, 10-K, and 10-Q from the SEC EDGAR database for the years 1994 through 2007.[9] The Standard & Poors' (S&P) Filing Dates database contains a match between all companies on the Compustat database (identified by GVKEY) with the CIK identifiers on the SEC EDGAR database.[10] The Compustat database used for the matching is the Charter Oak Point-In-Time database, which reflects company information as it was known at the time regardless of whether those companies are now active or inactive (due to such events as mergers, acquisitions, going private or bankruptcies).[11] Thus, it is useful in constructing a universe of firms that professional investors could have been using at the time without survivorship bias. The S&P Filing Dates Database includes all EDGAR filings for a firm identified by GVKEY as well as some identifying information for these filings. For each filing it includes the filing date and the report date, which, for 10-Q or 10-K forms, is the end of the fiscal period and, for 8-K forms, is the date on which the disclosed event had occurred. For 8-K filings made after August 2004, it also includes the SEC category (or categories but no more than five categories) of events that were reported by the Form 8-K.[12] We eliminate all filings with missing filing dates or missing report dates and exclude late periodic filers by eliminating 10-Ks (10-Qs) that were filed more than 100 (55) days after the fiscal period end. Overall, we obtain 512,943 instances of 8-K filings and 376,972 instances of periodic report filings. We match each GVKEY on Compustat that had a Form 8-K, 10-K, or 10-Q filing after 1993 with a PERMNO on CRSP and retain only identifiable unique observations with valid returns and shares trading data from 1 day before the event date to 1 day after the SEC filing date (where event and filing dates are the same for periodic reports). The description of market reaction variables below provides further details on data validity requirements. Thus, we obtain 330,053 instances of 8-K filings and 260,629 instances of periodic report filings. The SEC allows a firm to file a single Form 8-K to satisfy multiple disclosure items, provided that the company identifies by item number and caption all applicable items being satisfied and provides all of the substantive disclosure required by each of the items. However, in such a case only one date will be presented on the 8-K as the "Date of Report," representing the date of earliest event reported. Alternatively, a company may choose to report material events in separate 8-Ks even when the event date or the filing date are identical or both. For approximately 3% of the 8-Ks in our sample, which have the same event and filing dates, we perform a merging

[9] We do not examine amended disclosures by Forms 8-K/A, 10-K/A, or 10-Q/A.

[10] The database is available through WRDS or directly from S&P and includes all GVKEYs where the market value of the firm's equity at quarter-end exceeded $1 million.

[11] The Charter Oak PIT database is a monthly snapshot of what Compustat users would have access to in the Compustat database during that month. It is available through WRDS. For a description of the database see Livnat and Mendenhall (2006).

[12] The category information for the earlier filings is present in the database but is not reliable.

procedure where we combine all events that occurred on the same date and were reported in different filings on the same date into one observation. (Essentially we treat these 8-Ks as if the firm had filed a single form with multiple events.) The resulting final sample has 325,064 observations.[13] Fifty-four percent of these 8-Ks are filed under the new guidance after August 23, 2004. Overall our full sample includes 11,730 firms, with a third of them filing six or fewer Forms 8-K throughout the entire period, another third filing seven through 33 Forms 8-K, and the final third filing more than 33 Forms 8-K and as many as 426. (Under the new guidance regime we have 6,146 firms.)

3.2 Measures of market reaction

We use abnormal buy-and-hold stock returns, abnormal trading volume and abnormal stock price volatility as our measures of market reactions to the information in Forms 8-K and abnormal volume and volatility in Forms 10-K/Q analysis.[14] For the 8-K analysis, we compute these measures on several windows of interest, including 3 days[15] centered on the event date, 3 days centered on the filing date, and the period from 1 day prior to the event date through 1 day after the filing date. For our drift analysis, we compute the abnormal buy-and-hold returns for the period starting 2 days after the filing date through 30/60/90 subsequent calendar days.

To estimate the abnormal buy-and-hold return, we compute the buy-and-hold return on the individual stock, and then subtract the buy-and-hold return on value-weighted portfolio of companies with similar size and book-to-market ratios. The cut-off points to determine the size and B/M matched portfolios and the daily portfolio returns are obtained from Professor Kenneth French's data library, based on a classification of the population into six (two size and three B/M) portfolios.[16] To avoid any delisting bias, we use the delisting return from CRSP where appropriate. If the delisting is due to a forced delisting from an exchange and CRSP has a missing delisting return, we assume the return to be -100%. The firm is assumed to earn the benchmark return after a delisting.

We measure abnormal trading volume and abnormal stock price return volatility in a manner similar to Collins et al. 2009. We estimate abnormal trading volume as average daily share trading volume over the period of interest divided by the normal daily share volume during the non-event period. The non-event period for Forms 8-K is taken to be days -63 through -8 relative to the event date. For 10-K and 10-Q filings, the non-event period is days -100 through -8 relative to the filing date of the report. Thus, we designate the abnormal volume for firm *i* filing *j* as:

[13] There are only nine instances where a company filed two 8-Ks simultaneously with different event days. We treat these 8-Ks as separate observations.

[14] We do not examine the abnormal stock returns around the filings of periodic reports because unlike the majority of 8-K filings they contain multiple and multi-directional signals.

[15] All days specified in this section refer to business days unless noted otherwise.

[16] The library is at http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html.

$$\mathrm{ABVOLUME}_{ij} = \frac{\mathrm{Avg}_{d \in [\mathrm{event}]}[\mathrm{VOL}_{ij,d}]}{Avg_{d \in [\mathrm{non-event}]}[\mathrm{VOL}_{ij,d}]} - 1 \qquad (1)$$

where periods are as indicated above, and $\mathrm{VOL}_{ij,d}$ is the daily trading volume in millions of shares on day d obtained from CRSP. The abnormal trading volume measures the percentage of change in daily trading volume during the event period relative to the non-event period. We exclude observations where the average volume in the non-event period is equal to zero or where the number of days with nonzero trades in either the event or the non-event periods is too low.

We estimate abnormal stock price return volatility as the average squared abnormal returns in the event period divided by the variance of abnormal returns in the non-event period (where periods for Forms 8-K, 10-K and 10-Q are as described above). Thus, the abnormal volatility for firm i filing j is designated as:

$$\mathrm{ABVOLAT}_{ij} = \frac{\mathrm{Avg}_{d \in [\mathrm{event}]}\left[[\mathrm{RET}_{ij,d} - \mathrm{RFF}_{j,d}]^2\right]}{\left[\mathrm{Std}_{d \in [\mathrm{non-event}]}[\mathrm{RET}_{ij,d} - \mathrm{RFF}_{j,d}]\right]^2} \qquad (2)$$

where periods are indicated above; $\mathrm{RET}_{ij,d}$ is the stock return on day d obtained from CRSP; and $\mathrm{RFF}_{j,d}$ is the Fama–French value-weighted return on the portfolio with similar size and B/M (6-groups).

4 Results

4.1 Analysis of 8-Ks filed under the new guidance

As discussed above, all analyses in this section are done on a subsample of 176,693 Forms 8-K filed after August 23, 2004, and through the end of 2007. For convenience these observations are referred to in this section as the sample.

4.1.1 Sample characteristics

The majority of 8-Ks in this sample represent filings related to one event only: 22% relate to one item, with an additional 56% containing only one item plus exhibits. (Technically these filings contain two items, but the second item is 9.01, "Financial Statements and Exhibits.") Thus, 78% of the sample Forms 8-K are single-event filings, with 17% covering two events and 5% covering three or more events. For filings made after August 23, 2004, we present the distribution of the triggering events in Panel A of Table 1. The most common filings are those triggered by the public disclosure regarding results of operations, comprising 27% of the sample, followed by 8-Ks reporting the new item "Entry into a Material Agreement," disclosed in 25% of the sample. "Departure and Election of Directors," an item significantly expanded by the new regulation, is discussed in 15% of the sample. Each of the other nonvoluntary items is discussed in less than 5% of the sample (less than 8,000 filings). Overall, the new items which were not reported on Form 8-K before 2005 account for more than 50% of the sample.

Table 1 Descriptive characteristics of Form 8-K filings made after August 23, 2004

Panel A: Form 8-K content distribution

Item		Frequency	Percent of 8-K filings
1.01	Entry into a Material Definitive Agreement	43,573	24.7
1.02	Termination of a Material Definitive Agreement	3,560	2.0
1.03	Bankruptcy or Receivership	45	0.0
2.01	Completion of Acquisition or Disposition of Assets	3,937	2.2
2.02	Results of Operations and Financial Condition	48,761	27.6
2.03	Creation of a Direct/Off-Balance Sheet Financial Obligation	7,245	4.1
2.04	Increase/Acceleration of a Direct/Off-Balance Sheet Financial Obligation	510	0.3
2.05	Cost Associated with Exit or Disposal Activities	1,414	0.8
2.06	Material Impairments	813	0.5
3.01	Notice of Delisting … Transfer of Listing	3,197	1.8
3.02	Unregistered Sales of Equity Securities	3,757	2.1
3.03	Material Modifications to Rights of Security Holders	1,391	0.8
4.01	Changes in Registrant's Certifying Accountant	1,599	0.9
4.02	Non-Reliance on Previously Issued Financial Statements	1,297	0.7
5.01	Changes in Control of Registrant	468	0.3
5.02	Departure/Election of Directors or Principal Officers	27,135	15.4
5.03	Amendments to Articles of Incorporation or Bylaws	5,089	2.9
5.04	Suspension of Trading under Registrant's Employee Benefit Plans	407	0.2
5.05	Amendments to the Registrant's Code of Ethics	359	0.2
7.01	Regulation FD Disclosure	28,143	15.9
8.01	Other Events	42,664	24.1
9.01	Financial Statements and Exhibits	132,291	74.9

Panel B: Financial characteristics

Variables	*N*	Mean	SD	25th Perc.	50th Perc.	75th Perc.
Abnormal return (3 days—event)	176,693	0.002	0.077	(0.023)	(0.001)	0.023
Abnormal return (3 days—filing)	176,693	0.001	0.077	(0.024)	(0.001)	0.022
Abnormal volume (3 days—event)	176,693	0.647	6.596	(0.302)	0.040	0.618
Abnormal volume (3 days—filing)	176,693	0.692	6.264	(0.294)	0.058	0.664
Abnormal volatility (3 days—event)	176,693	2.997	15.198	0.297	0.756	1.943
Abnormal volatility (3 days—filing)	176,693	2.944	14.763	0.302	0.769	1.963
Market value of equity ($t - 1$)	175,719	4,352.08	18,315.38	143.64	538.92	2,002.04
Stock price (t)	175,718	34.71	967.60	7.45	18.30	33.74

In Panel A, the number of disclosures exceeds the sample size because a firm may disclose multiple events in an 8-K

In Panel B, when computing financial characteristics from Compustat, we retained one firm-quarter observation regardless of how many 8-Ks were filed in that fiscal quarter by the firm. Abnormal Return is the buy-and-hold return on a stock minus the average return on a matched size-B/M portfolio in the 3 days around the event date (Date of Report on Form 8-K) or the filing date. Abnormal volume is average shares traded in the 3 days around the event/filing date scaled by average shares traded in a preceding non-event period less one. Abnormal volatility is the squared abnormal returns in the 3 days around the event/filing date scaled by the variance of abnormal returns in the non-event period. Market value of equity (in $million) and price are as of quarter end

Panel B of Table 1 reports statistics about the distribution of market reactions of the sample of filings made under the new regime. Both mean and median 3-day event and filing abnormal returns are very close to zero, which is expected if we do not know whether the information released is favorable or unfavorable. In contrast, both the event and the filing date have over 60% greater volume in the mean than the "normal" period earlier, and the mean volatility of abnormal returns during both event and filing dates is almost three times as large as that in the "normal" earlier period. This indicates the importance of using unsigned measures of returns and volume to study the market reactions to the Form 8-K disclosures. The sample firms have a wide distribution of market values from $144 million for the first quartile to $2 billion for the third quartile. This is expected given our liberal sample selection criteria, basically only requiring membership in both Compustat and CRSP.

4.1.2 Timeliness

The standard setters sought to both shorten and simplify Form 8-K filing deadlines in the new guidance. The new rule requires a report to be filed or furnished within four business days after occurrence of the event for all nonvoluntary items. Item 8.01, "Other Events," does not have a deadline although prompt reporting is encouraged. For item 7.01, "Regulation FD Disclosure," (and item 8.01 when filed solely to satisfy its obligations under Regulation FD), the deadline is in accordance with the requirements of Rule 100(a) of Regulation FD. For item 2.02, "Results of Operations and Financial Condition," the event date shall be considered the date of the public disclosure of relevant materials.

We find that Forms 8-K filed under the new SEC guidance represent a timely disclosure of material events as 95% are filed within four business days of the event date. Table 2 presents the filing lags by section for a subsample of filings which report one section only (or two sections with the second one being Section 9, "Financial Statements and Exhibits").[17] Consistent with earlier findings of Carter and Soo 1999, we observe that voluntary disclosures of Section 8, "Other Events" are very timely as are the filings of Section 7, "Regulation FD Disclosures." The highly timely Section 2, "Financial Information," is primarily driven by the filings of semi-voluntary item 2.02, "Results of Operations," nearly 65% of which are filed within one business day of the disclosure of this information to the public. The other five items within Section 2 exhibit similar timeliness to the mandatory items within other sections. We observe that nearly a third of Forms 8-K disclosing nonvoluntary items are filed on the last allowed business day.

We examine the distribution of 8-K filing dates across time to discern any patterns or clusters in the filings (not tabulated). As expected, we see distinct spikes in filings during the periods approximately 4 weeks after the calendar quarter-ends

[17] The patterns of timeliness reported in Table 2 remain the same when examining the full sample (including more than one event per Form 8-K).

Table 2 Form 8-K filing lag by section—subsample of firms reporting one section only after August 23, 2004

Section		0	1	2	3	4	Total % in 4 bus. days	≥5	Total # obs
1	Registrant's Business and Operations	14.8	14.3	14.2	19.3	32.6	95.1	4.9	23,703
2	Financial Information	60.9	19.9	5.9	3.7	3.8	94.2	5.8	40,778
3	Securities and Trading Markets	16.1	16.1	15.0	19.7	28.2	95.0	5.0	3,227
4	Accountants and Financial Statements	16.7	13.0	12.0	18.8	32.8	93.3	6.7	1,917
5	Corporate Governance and Management	21.0	17.4	15.6	17.6	25.3	96.9	3.2	19,703
7	Regulation FD Disclosure	66.9	21.6	5.4	2.6	1.4	97.8	2.2	17,417
8	Other Events	47.3	27.0	10.3	6.5	5.1	96.1	3.9	30,417
9	Financial Statements and Exhibits	47.3	21.3	9.4	8.1	9.9	96.1	3.9	99,938

All days are in business days—if the event occurred not on a business day, it is assigned the event date of the following business day. Filing lag of zero indicates that Form 8-K was filed on the same business day as the occurrence of the event. Thus, filing lags of zero through four, inclusively, represent forms filed within the four business days of the event, as prescribed in the new guidance

for calendar quarters 1, 2, and 3 in each year, representing 8-Ks filed to disclose results of operations. No other significant clustering of filings is observed.[18]

4.1.3 Market reactions

For all filings under the new guidance, we examine the abnormal buy-and-hold stock returns for the 3 days centered on the filing date, the 3 days centered on the event date, and the period from the event date to the filing date. The overall mean returns are 0.2, 0.1, and 0.2% for the three periods, respectively. (All results in this paragraph are untabulated.) For all three periods, the returns are not significantly different between firms that filed one or more than one Form 8-K on the same date. There is some evidence that, for the 7% of firms that filed an 8-K contemporaneously[19] with an annual or quarterly report, the mean returns are lower than for those that filed stand-alone 8-K reports. (The difference is small in magnitude albeit statistically significant.) There is also some evidence that a greater number of events reported in the same Form 8-K is associated with greater abnormal returns (where number of events equals the number of items reported excluding item 9.01, "Financial Statements and Exhibits"). In the 3-day period centered on the event date the mean returns for the filings reporting 1, 2, 3, 4, and 5 or more items are respectively 0.1, 0.3, 0.5, 0.6, and 1.8%. A similar pattern is observed for the period from event to filing but not for the 3-day period around the filing date.

Table 3 Panel A contains the mean abnormal returns in the three periods of interest segregated by the event that triggered the filing. The mean returns are very

[18] In each calendar year we do see an abnormally high number of filings in late December (for example, December 20 and 21 in 2007). These filings are dominated by those reporting entry into material agreement or election/departure of directors.

[19] "Contemporaneous" here is defined to mean that there was a periodic filing in a period starting from one week before the 8-K filing and ending one business day after.

much in line with expectations. Nine items have statistically significant mean positive returns either around the event date or the filing date. The highest statistically significant returns are observed for item 3.03, "Material Modifications to the Rights of Security Holders." This item was previously disclosed in periodic reports and may report events such as an increase in the number of authorized shares of common stock, changes in the expiration date of the preferred stock purchase rights, etc. A majority of filings containing this item also contain item 1.01, "Entry into a Material Definitive Agreement." Thus, these filings specify an amendment to the rights of security holders which stem from a merger or purchase, a new credit facility, etc.[20] These observations, which contain both items 3.03 and 1.01, drive the positive return, while the mean abnormal return for the observations that contain item 3.03 but not item 1.01 is not significantly different from zero. Several other items exhibit strong positive returns, including "Unregistered Sales of Equity Securities" and "Changes in Control of Registrant," both previously disclosed in periodic reports.

Ten items have statistically significant mean negative returns either around the event date or the filing date. The event generating the strongest price impact of −9% around the filing date and −7% around the event date (−1% in the median for both) is "Bankruptcy or Receivership," which has a small number of observations. Additionally, three newly disclosed items generate significant negative returns around both the event date and the filing date: "Cost Associated with Exit or Disposal Activities," "Notice of Delisting…Transfer of Listing," and "Non-Reliance on Previously Issued Financial Statements." Several other items exhibit significant negative returns around the filing date only.

Table 3 Panel B provides the mean buy-and-hold abnormal returns starting 2 days after the filing date and lasting through 30, 60 or 90 calendar days afterwards. "Bankruptcy or Receivership" filings lead to the strongest negative drift but due to the small number of observations the results are not statistically significant. The items "Material Impairments" and "Cost Associated with Exit or Disposal Activities" also have significant negative drifts between −1.1 and −2.5% in those periods. Several other items have negative significant drift returns of a smaller magnitude. Very few items have positive and statistically significant abnormal drift returns, the highest of which is "Material Modifications to Rights of Security Holders."[21]

To summarize the results of the signed market reactions, we find that some items have predominantly positive mean market effects that are significantly different from zero, whereas others have negative returns around the event and filing dates, all in the expected direction where such could be hypothesized. We also see that the

[20] In some instances a firm refers to the modification of securities holders' rights as the material definitive agreement itself. In those cases, item 1.01 in the 8-K contains a lengthy discussion on the modification of rights and item 3.03 simply refers to discussion in item 1.01.

[21] For robustness we examine a subsample of 8-Ks where no periodic filing was made in the next 90 days and find similar results (with larger drift magnitude for the two negative items mentioned above). Similarly we examine the 30 and 60 day drifts (30 day drift) only for a subsample of 8-Ks where a periodic report was filed between 60 and 90 (between 30 and 60) days subsequently and again find significant drift results for several of the events (although number of observations is small).

immediate market reactions are in several cases incomplete around the event or filing dates, with future abnormal returns continuing for a period of 30–90 days after the initial event. Still, we do find several categories that show no significant abnormal returns in any of the return periods. Because these items may contain a mixture of favorable and unfavorable news, we examine unsigned market reactions as measured by trading volume and stock price volatility.

The mean abnormal volume (volatility) is 65, 69, and 63% (3.0, 2.9, and 2.8) respectively, for the periods around the event date, filing date, and between the two. (All results in this paragraph are untabulated.) Volume and volatility are higher around both the event date and the filing date for firms filing more than one 8-K. We also observe that greater number of reported events leads to greater abnormal volume and volatility (where number of events equals the number of items reported excluding item 9.01 “Financial Statements and Exhibits”). In the 3-day period around the event date the mean abnormal volume for the filings reporting 1, 2, 3, 4, and 5 or more items is respectively 63, 69, 76, 99, and 122% (with a similar monotonic pattern observed in volume around the filing date and in volatility in both periods).

Table 4 contains the mean abnormal volume in the three periods of interest segregated by the event that triggered the filing. We observe that the abnormal volume in every period for every item is significantly greater than zero. From this result alone, we may conclude that Forms 8-K filed under the new SEC regime are associated with significant market reaction as represented by abnormal market trading volume. The items that exhibit the highest abnormal volume around the event date are “Bankruptcy or Receivership” and “Material Modifications to the Rights of Security Holders.” (The two items exhibit respectively the lowest and highest signed abnormal returns in the periods examined.) As expected, the filings reporting the results of operations also exhibit high abnormal volume. The item that has the lowest abnormal volume in all three periods is the previously disclosed item “Suspension of Trading under Registrant’s Employee Benefit Plans” (which is still statistically significant at the 1% level and with a magnitude of over 10% of abnormal volume).

The mean abnormal volatility segregated by items is to a large degree similar to the abnormal volume results (see Table 5). Again, we observe that the abnormal volatility in every period for every item is significantly greater than zero. The highest volatility is generated by the “good news” of “Material Modifications to the Rights of Security Holders.”

4.1.4 Impact of the filing lag

In the spirit of Carter and Soo (1999), we examine whether the 3-day return, volume, and volatility measures around the filing date differ for filings of varying filing lags—whether timeliness impacts informativeness of Forms 8-K. (Results reported in this section are not tabulated.) Since 95% of our sample represents forms filed within the four business-day deadline, these tests are significantly less powerful than those of Carter and Soo, who observed a large variation in filing lags. For 8-Ks filed within the four business day deadline, we do not observe any evidence that abnormal returns, volume, or volatility vary systematically by filing lag.

Table 3 Abnormal buy-and-hold returns analysis—Form 8-K filings made after August 23, 2004

Panel A: Abnormal returns by item

Item		New	Expected sign	Abnormal returns		
				3 Day ED (%)	3 Day FD (%)	ED to FD (%)
1.01	Entry into a Material Definitive Agreement	Yes	? Or +	0.66***	0.55***	0.88***
1.02	Termination of a Material Definitive Agreement	Yes	? Or −	−0.09	−0.31**	−0.33*
1.03	Bankruptcy or Receivership	No	−	−7.18**	−9.39***	−8.32**
2.01	Completion of Acquisition or Disposition of Assets	No	?	0.85***	0.41***	0.97***
2.02	Results of Operations and Financial Condition	No (voluntary)	?	−0.08**	−0.14***	−0.06
2.03	Creation of a Direct/Off-Balance Sheet Financial Obligation	Yes	?	0.30***	0.24**	0.42***
2.04	Increase/Acceleration of a Direct/Off-Balance Sheet Financial Obligation	Yes	−	−0.92	−1.57***	−2.77***
2.05	Cost Associated with Exit or Disposal Activities	Yes	?	−0.59***	−0.70***	−1.06***
2.06	Material Impairments	Yes	−	−0.57	−1.50***	−2.16***
3.01	Notice of Delisting … Transfer of Listing	Yes	−	−1.09***	−2.56***	−3.12***
3.02	Unregistered Sales of Equity Securities	Yes (from periodic)	+	1.23***	0.39**	1.55***
3.03	Material Modifications to Rights of Security Holders	Yes (from periodic)	?	2.98***	2.25***	3.31***
4.01	Changes in Registrant's Certifying Accountant	No	−	−0.02	−0.47***	−0.45*
4.02	Non-Reliance on Previously Issued Financial Statements	Yes	−	−0.97***	−1.68***	−2.38***
5.01	Changes in Control of Registrant	No	?	1.26***	0.87**	1.11
5.02	Departure/Election of Directors or Principal Officers	No (expanded)	?	−0.03	−0.08**	−0.10*
5.03	Amendments to Articles of Incorporation or Bylaws	No (expanded)	?	0.01	0.01	−0.06
5.04	Suspension of Trading Under Registrant's Employee Benefit Plans	No	−	0.19	0.05	−0.16
5.05	Amendments to the Registrant's Code of Ethics	No	?	−0.08	−0.30	−0.33

Table 3 continued

Panel A: Abnormal returns by item

Item		New	Expected sign	Abnormal returns 3 Day ED (%)	3 Day FD (%)	ED to FD (%)
7.01	Regulation FD Disclosure	Yes (voluntary)	?	0.25***	0.19***	0.30***
8.01	Other Events	No (voluntary)	?	0.25***	0.10**	0.32***
9.01	Financial Statements and Exhibits	No	?	0.17***	0.08***	0.20***

Panel B: 30/60/90 days drift by item

Item		New	Expected sign	Abnormal returns 30 days Mean (%)	60 days Mean (%)	90 days Mean (%)
1.01	Entry into a Material Definitive Agreement	Yes	? Or +	0.00	0.02	0.05
1.02	Termination of a Material Definitive Agreement	Yes	? Or −	−0.32	−0.58*	−0.93**
1.03	Bankruptcy or Receivership	No	−	−2.21	−3.20	−5.47
2.01	Completion of Acquisition or Disposition of Assets	No	?	−0.06	0.30	−0.17
2.02	Results of Operations and Financial Condition	No (voluntary)	?	−0.04	0.04	0.03
2.03	Creation of a Direct/Off-Balance Sheet Financial Obligation	Yes	?	−0.37**	−0.55***	−0.94***
2.04	Increase/Acceleration of a Direct/Off-Balance Sheet Financial Obligation	Yes	−	0.68	−0.22	−1.06
2.05	Cost Associated with Exit or Disposal Activities	Yes	?	−1.14***	−1.30***	−1.24**
2.06	Material Impairments	Yes	−	−1.07***	−1.63***	−2.46***
3.01	Notice of Delisting … Transfer of Listing	Yes	−	−0.21	−0.42	0.45
3.02	Unregistered Sales of Equity Securities	Yes (from periodic)	+	0.72*	0.41	−0.14
3.03	Material Modifications to Rights of Security Holders	Yes (from periodic)	?	0.84**	1.06	0.61
4.01	Changes in Registrant's Certifying Accountant	No	−	−0.24	0.48	1.17
4.02	Non-Reliance on Previously Issued Financial Statements	Yes	−	−0.28	0.42	0.45
5.01	Changes in Control of Registrant	No	?	0.17	−0.77	0.14

Table 3 continued

Panel B: 30/60/90 days drift by item

Item		New	Expected sign	Abnormal returns		
				30 days Mean (%)	60 days Mean (%)	90 days Mean (%)
5.02	Departure/Election of Directors or Principal Officers	No (expanded)	?	−0.41***	−0.72***	−0.74***
5.03	Amendments to Articles of Incorporation or Bylaws	No (expanded)	?	−0.47***	−0.39	−0.85***
5.04	Suspension of Trading Under Registrant's Employee Benefit Plans	No	−	0.12	0.34	−0.14
5.05	Amendments to the Registrant's Code of Ethics	No	?	0.14	0.42	−0.13
7.01	Regulation FD Disclosure	Yes (voluntary)	?	0.21***	0.39***	0.45***
8.01	Other Events	No (voluntary)	?	−0.11*	−0.38***	−0.58***
9.01	Financial Statements and Exhibits	No	?	−0.08**	−0.15***	−.21***

Abnormal Return is the buy-and-hold return on a stock minus the average return on a matched size-B/M portfolio in the period of interest: the 3 days around the event date (Date of Report on Form 8-K), the 3 days around the filing date, the period from 1 day prior to the event date through 1 day after the filing date, and periods from 2 days after the filing date through 30/60/90 calendar days after the filing date

Significance at * 10% level, ** 5% level, *** 1% level

For tardy filings we see some evidence that the returns are more negative and the volume is higher around the filing date. For example, for Section 3, "Securities and Trading Markets," the abnormal return (volume) is −2.1% (250%) for tardy filings and −0.4% (91%) for timely filings (statistically significantly different for both measures). Similarly, we see that the abnormal returns are lower for tardy filings of events in Sections 1, 4, 7, and 8, and abnormal volume is higher for tardy filings of events in Sections 2, 5, and 7. We do not hypothesize whether the difference is due to effects of timeliness itself or due to some systematic difference between the content of timely and tardy disclosures.

4.2 Change in the information content of periodic reports

The analyses in this section use the full sample of 8-Ks and 10-K/Qs filed in 1994 through 2007. The limitation of this sample is that, for periods before August 2004, the S&P Filing Dates Database does not contain reliable identification of events being reported, and thus item-specific analysis cannot be carried out.

We investigate whether the 8-K guidance promulgated by the SEC in August 2004 had an impact on the informativeness of periodic reports (10-Ks and 10-Qs) as

Table 4 Abnormal volume analysis by item—Form 8-K filings made after August 23, 2004

Item		New	Abnormal volume		
			3 Day ED (%)	3 Day FD (%)	ED to FD (%)
1.01	Entry into a Material Definitive Agreement	Yes	61***	67***	60***
1.02	Termination of a Material Definitive Agreement	Yes	41***	52***	45***
1.03	Bankruptcy or Receivership	No	433**	377***	391**
2.01	Completion of Acquisition or Disposition of Assets	No	45***	42***	42***
2.02	Results of Operations and Financial Condition	No (voluntary)	91***	101***	90***
2.03	Creation of a Direct/Off-Balance Sheet Financial Obligation	Yes	34***	29***	30***
2.04	Increase/Acceleration of a Direct/Off-Balance Sheet Financial Obligation	Yes	121***	92***	103***
2.05	Cost Associated with Exit or Disposal Activities	Yes	47***	62***	54***
2.06	Material Impairments	Yes	71***	115***	92***
3.01	Notice of Delisting … Transfer of Listing	Yes	49***	72***	58***
3.02	Unregistered Sales of Equity Securities	Yes (from periodic)	98***	97***	94***
3.03	Material Modifications to Rights of Security Holders	Yes (from periodic)	147***	153***	136***
4.01	Changes in Registrant's Certifying Accountant	No	29***	46*	35***
4.02	Non-Reliance on Previously Issued Financial Statements	Yes	33***	62***	47***
5.01	Changes in Control of Registrant	No	128***	170***	127***
5.02	Departure/Election of Directors or Principal Officers	No (expanded)	28***	32***	29***
5.03	Amendments to Articles of Incorporation or Bylaws	No (expanded)	35***	32***	32***
5.04	Suspension of Trading Under Registrant's Employee Benefit Plans	No	14***	14***	14***
5.05	Amendments to the Registrant's Code of Ethics	No	49**	33***	39**
7.01	Regulation FD Disclosure	Yes (voluntary)	62***	70***	62***
8.01	Other Events	No (voluntary)	87***	88***	82***
9.01	Financial Statements and Exhibits	No	72***	77***	71***

Abnormal volume is average shares traded in the period of interest scaled by the average shares traded in a preceding non-event period less one. Periods of interest are the 3 days around the event date (Date of Report on Form 8-K), the 3 days around the filing date, and the period from 1 day prior to the event date through 1 day after the filing date

Significance at * 10% level, ** 5% level, *** 1% level

Table 5 Abnormal volatility analysis by item—Form 8-K filings made after August 23, 2004

Item		New	Abnormal volatility		
			3 Day ED	3 Day FD	ED to FD
1.01	Entry into a Material Definitive Agreement	Yes	2.84***	2.55***	2.47***
1.02	Termination of a Material Definitive Agreement	Yes	2.17***	2.62***	2.30***
1.03	Bankruptcy or Receivership	No	4.18***	5.04***	4.58***
2.01	Completion of Acquisition or Disposition of Assets	No	2.10***	1.94***	1.96***
2.02	Results of Operations and Financial Condition	No (voluntary)	4.60***	4.75***	4.43***
2.03	Creation of a Direct/Off-Balance Sheet Financial Obligation	Yes	1.62***	1.45***	1.48***
2.04	Increase/Acceleration of a Direct/Off-Balance Sheet Financial Obligation	Yes	4.19***	2.75***	3.16***
2.05	Cost Associated with Exit or Disposal Activities	Yes	2.71***	2.90***	2.75***
2.06	Material Impairments	Yes	3.37***	5.66***	4.47***
3.01	Notice of Delisting … Transfer of Listing	Yes	2.00***	2.15***	2.02***
3.02	Unregistered Sales of Equity Securities	Yes (from periodic)	3.17***	2.57***	2.73***
3.03	Material Modifications to Rights of Security Holders	Yes (from periodic)	11.89***	9.93***	8.89***
4.01	Changes in Registrant's Certifying Accountant	No	1.44***	1.57***	1.45***
4.02	Non-Reliance on Previously Issued Financial Statements	Yes	2.92***	4.47***	3.57***
5.01	Changes in Control of Registrant	No	5.20***	5.38***	4.77**
5.02	Departure/Election of Directors or Principal Officers	No (expanded)	1.77***	1.87***	1.79***
5.03	Amendments to Articles of Incorporation or Bylaws	No (expanded)	1.77***	1.78***	1.74***
5.04	Suspension of Trading Under Registrant's Employee Benefit Plans	No	1.34***	1.50***	1.39***
5.05	Amendments to the Registrant's Code of Ethics	No	1.23***	1.37***	1.31***
7.01	Regulation FD Disclosure	Yes (voluntary)	3.06***	2.98***	2.84***
8.01	Other Events	No (voluntary)	3.24***	3.11***	2.99***
9.01	Financial Statements and Exhibits	No	3.35***	3.27***	3.12***

Abnormal volatility is the squared abnormal returns in the period of interest scaled by the variance of abnormal returns in the non-event period. The periods of interest are the 3 days around the event date (Date of Report on Form 8-K), the 3 days around the filing date, and the period from 1 day prior to the event date through 1 day after the filing date

Significance at * 10% level, ** 5% level, *** 1% level measured by abnormal volume and volatility around their filing dates. As discussed above, additional real-time disclosure may lead to a decrease in the information content of periodic reports (if this information was previously disclosed in Form 8-K reports), or it may not do so (if the 8-K reporting simply alerts investors to the presence of material developments but does not substitute for the extensive reporting of the events or their consequences in the periodic reports). Panel A of Table 6 presents the distribution of 8-K and periodic filings for each calendar year in the sample. We observe that, for years 1994 through 2000, there are at least twice as many periodic reports filed as Forms 8-K. In 2001 and 2002 there is a 20% increase in 8-K filings, while the number of periodic reports decreases. This may correspond in part with Regulation Fair Disclosure, implemented in October 2002, which mandated greater disclosure of material information to all investors of the firm. In 2003, we see the number of 8-Ks nearly doubling, which likely corresponds with the enactment and implementation of the Sarbanes–Oxley Act and related SEC guidance in late 2002 and early 2003. Lastly, in 2004 the number of 8-Ks filed increases by a third, as it does further in 2005, henceforth remaining constant. This increase is likely to be attributable to the new SEC 8-K guidance, which is the subject of this study.

The rest of Panel A of Table 6 presents the means of abnormal volume and volatility around the filings of both 8-Ks and periodic reports.[22] We observe that, for 8-Ks, the abnormal volume is fairly constant from 1995 through 2007 with a spike in 2003, and the abnormal volatility is slowly increasing over the entire period. Of main interest to us is the volume and volatility of the periodic reports, which indicate their information content. Volume exhibits several spikes and dips with the biggest year-over-year dip in 2000 and increasing thereafter. Volatility is fairly constant with a large increase in 2007.

The first question we address in this section is whether the difference in the abnormal volume and volatility of periodic reports before and after the implementation of the new SEC 8-K guidance in 2004 is statistically significant. Correspondingly, Panel B of Table 6 presents the difference between periodic reports filed before and after August 23, 2004. Both volume and volatility of periodic reports are significantly larger for the post period. However, as we saw above, other factors such as Sarbanes–Oxley implementation, likely impacted the change in informativeness of both periodic and real-time reports. Thus, we examine changes in volume and volatility for Forms 10-K and 10-Q filed in just one calendar year before and after August 23, 2004 (when the effects of both Regulation FD and Sarbanes–Oxley should have already been incorporated). We still observe a statistically significant increase. We repeat this analysis only for firms with market capitalization of under $75 million, as they were exempt from the contemporaneous Sarbanes–Oxley implementation deadline, and again find a statistically significant increase. Lastly, we focus only on firm-quarters where there was an 8-K filing in the period from the filing of the previous periodic report to the current periodic report

[22] We imposed an additional data validity requirement on the sample for analysis in this section, deleting the extreme top and bottom 1% of all filing date abnormal volume and abnormal volatility observations. Without this restriction the results are even more pronounced.

Table 6 Information content of periodic reports

Panel A: Distribution of and abnormal volume and volatility around Form 8-K and 10-K/Q filings

Year	Distribution		Abnormal volume		Abnormal volatility	
	10-K & 10-Q	8-K	10-K & 10-Q (%)	8-K (%)	10-K & 10-Q (%)	8-K (%)
1994	6,113	2,264	3	28	1.06	1.36
1995	11,513	3,957	12	35	1.12	1.40
1996	21,482	7,831	14	34	1.12	1.32
1997	26,268	11,033	8	40	1.14	1.40
1998	25,963	12,327	9	40	1.12	1.57
1999	24,917	11,484	14	42	1.17	1.44
2000	23,990	11,867	5	40	1.15	1.59
2001	22,592	14,145	9	41	1.04	1.46
2002	19,588	17,071	11	36	1.18	1.63
2003	17,759	31,313	17	56	1.06	1.83
2004	16,605	42,036	15	46	1.17	1.89
2005	15,175	54,543	14	33	1.24	1.78
2006	14,664	53,591	18	36	1.26	1.78
2007	14,000	51,602	34	35	1.96	1.98
Total	260,629	325,064				

Panel B: Statistical difference between 10-K/Q reports made before and after August 23, 2004

	N	Abnormal volume		Abnormal volatility	
		Mean (%)	*t* test of diff.	Mean	*t* test of diff.
Before and after analysis—all years					
Before August 23, 2004	204,400	10	<.0001	1.125	<.0001
After August 23, 2004	47,197	23		1.445	
1 Year before and after analysis					
Before August 23, 2004	16,649	12	<.0001	1.151	0.021
After August 23, 2004	15,106	17		1.201	
1 Year before and after analysis—for firms with market capitalization <75 million					
Before August 23, 2004	4,047	27	0.010	1.347	0.039
After August 23, 2004	3,346	36		1.458	
1 Year before and after analysis—for firms with at least one 8-K in both (and mcap <75)					
Before August 23, 2004	3,179	22	0.002	1.278	0.011
After August 23, 2004	2,899	34		1.424	

Table 6 continued

Panel C: Increase in volume around 10-K/Q filings tabulated by increase in volume around 8-K filings

Increase of 8-K volume	N (firms)	Increase of 10-K & 10-Q volume (%)	Pr > |t|
All firms			
Bottom third	1,430	−1	0.664
Middle third	1,430	9	<.0001
Top third	1,430	18	<.0001
Small firms (market capitalization <75 million)			
Bottom third	322	3	0.777
Middle third	322	22	0.010
Top third	322	32	<.0001

Abnormal volume is average shares traded in the 3 days around the filing date scaled by average shares traded in a preceding non-event period less one. Abnormal Volatility is the squared abnormal returns in the 3 days around the filing date scaled by the variance of abnormal returns in the non-event period. In Panel B the Wilcoxon 2-sided z statistics show similar order of significance as the t tests presented above. In Panel C the increase in volume is calculated as follows: sum the 3-day abnormal volume around filing dates for any 8-Ks filed after the filing of the preceding periodic report and prior to the filing of the current one; for each firm, average this quarterly measure separately for the year before and the year after the implementation deadline of August 23, 2004; for each firm subtract the average abnormal volume during the year prior to August 23, 2004, from the year afterwards to obtain a measure of the change in the abnormal volume due to 8-K filings for each firm. Construct a similar measure for periodic filings using the average 3-day abnormal volume around all periodic filings during the year

(still considering only firms with market capitalization of under $75 million) and observe the same result. We conclude that the new SEC 8-K guidance did not decrease but actually increased the information content of periodic reports.

We further investigate the effects of Form 8-K filings on periodic filings by examining the increase/decrease in abnormal volume of periodic filings of different classes of firms according to how effective were the firms' 8-K filings in generating abnormal volume prior to the periodic filings (Panel C of Table 6). Specifically, for each firm-quarter, we calculate the sum of the 3-day abnormal volume around the filing date for any 8-Ks filed after the filing of the preceding periodic report and prior to the filing of the current one. For each firm, we average this quarterly measure separately for the year before and the year after the implementation deadline of August 23, 2004. We then subtract the average abnormal volume during the year prior to August 23, 2004, from the year afterwards to obtain a measure of the change in the abnormal volume due to 8-K filings for each firm. We construct a similar measure for periodic filings using the average 3-day abnormal volume around all periodic filings during the year. We rank firms into three groups according to the change in abnormal volume around 8-K filings and examine the corresponding change in periodic filings. We find that that the change in abnormal volume around periodic filings for firms in the group with the smallest change in abnormal volume of 8-K filings is statistically insignificantly different from zero, whereas the increase in abnormal volume around periodic filings is 18% (statistically significant) for the group with the largest increase in abnormal volume of 8-K filings. We obtain similar results for firms with market capitalization of under \$75 million.[23] Thus, firms experiencing the greatest increase in cumulative market reactions to 8-K filings under the new SEC rule also experience the greatest increase in cumulative market reactions to periodic filings, indicating that the new regulation of 8-K filings did not diminish the informativeness of periodic reports.

4.3 Sensitivity analyses

4.3.1 Analysis of one-event 8-K filings

We replicate the analysis in Sect. 4.1, limiting our sample to Form 8-K filings which report one event only (or two events with the second one being item 9.01, "Financial Statements and Exhibits"). Examining the returns in the windows of interest we find qualitatively similar results with a couple of exceptions. Item 2.05, "Cost Associated with Exit or Disposal Activities," is no longer statistically significant and item 4.02, "Non-Reliance on Previously Issued Financial Statements," is reduced in magnitude. Also item 3.03, "Material Modifications to Rights of Security Holders," an event which had the highest return in the full sample, is no longer statistically significant. This is not surprising given our previous finding that it is the filings with both item 3.03 and 1.01 that drive the positive returns. Examining the drift we find results similar to the full sample with several items exhibiting even stronger drift (again with the exception of item 3.03, which is no longer significant). Examining the abnormal volume for this subsample we see that 18 (17) of the 22 events still exhibit statistically significant abnormal volume around the event (filing) date, although magnitudes are smaller for many of the items. All events in the subsample still have statistically significant abnormal volatilities in the windows of interest.

4.3.2 Analysis of 8-K filings not filed contemporaneously with a periodic report

We carry out all analysis in both Sects. 4.1 and 4.2 on the subsample of 8-K filings that did not have a periodic report filed in the period beginning 1 week prior through one business day subsequently. All our findings remain unchanged.

4.3.3 Analysis of 8-K filings made on at least the third business day after the event

To exclude observations with overlapping event date and filing date windows, we carry out analysis in Sect. 4.1 on the subsample of observations where the filing of a Form 8-K was made on the third business day after the event date or later. As seen in Table 2, this leads us to discard most of the voluntary or semi-voluntary filings and about half of all other filings. The returns analysis shows that 11 items still exhibit statistically significant returns around the event date and 11 around the filing

[23] We obtain similar results for abnormal volatility analysis although some statistical significance is lost in the analysis of small firms.

date. Some of the "positive" items ("Material Modifications to Rights of Securities Holders," "Unregistered Sales of Equity Securities," and "Changes in Control of Registrant") lose either significance or magnitude around the filing date while retaining strong reaction around the event date. On the other hand, some of the "negative" items ("Bankruptcy or Receivership," "Material Impairments," "Notice of Delisting," and "Non-Reliance on Previously Issued Financial Statements") lose either significance or magnitude at the event date while retaining the reaction around the filing date. The drift results are qualitatively similar to those presented above as are the volume and volatility analysis.

4.3.4 Analysis of periodic filings when exclude item 2.02 from the sample of 8-K filings

We carry out the analysis of informativeness of periodic reports while excluding all 8-K filings reporting item 2.02, "Results of Operations and Financial Condition." We find that the analysis in Panel B of Table 6 remains qualitatively unchanged. For Panel C, while the analysis of all firms remains unchanged, we see that the bottom third is still insignificantly different from zero for small firms, while the middle and top third are significantly different from zero and close in magnitudes at 30 and 26%, respectively.

5 Conclusions

This study examines the market reactions associated with the new SEC disclosure rules regarding events that need to be reported in Form 8-K filings. The SEC has expanded the list of events that are required to be disclosed in Form 8-K filings and shortened the filing period considerably to four business days. We examine a large sample of Form 8-K filings in 2005 through 2007 to determine whether Form 8-K filings are associated with significant market reactions.

We find that 95% of firms file their Forms 8-K within the required period and that market reactions to the Form 8-K filings vary by category, with some disclosed events eliciting strong positive mean abnormal returns and others strong negative abnormal returns. We find that some items do not exhibit signed abnormal returns, although this can be interpreted as either absence of information content for these items, or that these items have favorable implications for some firms but unfavorable for others, with an average market reactions that is indistinguishable from zero. To address this issue, we also examine the market reactions to Forms 8-K filings in terms of both abnormal trading volume and abnormal stock return volatility. We find significant market reactions to all items using these measures, indicating that the failure of some items to yield significant mean signed abnormal returns is not due to lack of information content but likely due to inconsistent implications across filers. Overall we conclude that, with the promulgation of the new guidance, the SEC succeeded in providing to the investing public timely access to relevant corporate events information.

Similar to the post-earnings-announcement drift, we examine subsequent stock market reactions to determine whether the market reactions are complete around the Form 8-K filings, or whether market participants seem to under-react to the information in the Form 8-K filings. Our results seem to be consistent with incomplete initial market reactions and with significant stock return drifts for several items. We also examine the market reaction to periodic reports before and after the promulgation of the SEC guidance and conclude that the information content of Forms 10-K and 10-Q is not diminished by the more expansive and timely 8-K disclosures.

Our results contribute to the existing literature along four main dimensions. First, we show that the new SEC disclosure requirements for Form 8-K were both complied with and yielded information that users reacted to. Second, we show that analysis of market reactions to items in the Form 8-K filings needs to incorporate unsigned abnormal returns and volume. Third, we document the existence of return drifts for events disclosed through Form 8-K filings. Finally, we show that additional real-time disclosure of material events did not diminish the informativeness of periodic reports.

Acknowledgments The authors gratefully acknowledge the filing dates data provided by Standard & Poor's Filing Dates Database.

Appendix

See Table 7.

Table 7 Reportable events under SEC release no. 33-8400

Section	Item	Item Name	New item
1 Registrant's Business and Operations	1.01	Entry into a Material Definitive Agreement	Yes
	1.02	Termination of a Material Definitive Agreement	Yes
	1.03	Bankruptcy or Receivership	No
2 Financial Information	2.01	Completion of Acquisition or Disposition of Assets	No
	2.02	Results of Operations and Financial Condition	No (semi-voluntary)
	2.03	Creation of a Direct Financial Obligation or an Obligation under an Off-Balance Sheet Arrangement of a Registrant	Yes
	2.04	Triggering Events That Accelerate or Increase a Direct Financial Obligation under an Off-Balance Sheet Arrangement	Yes
	2.05	Cost Associated with Exit or Disposal Activities	Yes
	2.06	Material Impairments	Yes
3 Securities and Trading Markets	3.01	Notice of Delisting or Failure to Satisfy a Continued Listing Rule or Standard; Transfer of Listing	Yes
	3.02	Unregistered Sales of Equity Securities	Yes (from periodic)
	3.03	Material Modifications to Rights of Security Holders	Yes (from periodic)

Table 7 continued

Section	Item	Item Name	New item
4 Matters Related to Accountants and Financial Statements	4.01	Changes in Registrant's Certifying Accountant	No
	4.02	Non-Reliance on Previously Issued Financial Statements or a Related Audit Report or Completed Interim Review	Yes
5 Corporate Governance and Management	5.01	Changes in Control of Registrant	No
	5.02	Departure of Directors or Principal Officers; Election of Directors; Appointment of Principal Officers	No (expanded)
	5.03	Amendments to Articles of Incorporation or Bylaws; Change in Fiscal Year	No (expanded)
	5.04	Temporary Suspension of Trading Under Registrant's Employee Benefit Plans	No
	5.05	Amendments to the Registrant's Code of Ethics, or Waiver of a Provision of the Code of Ethics	No
7 Regulation FD Disclosure	7.01	Regulation FD Disclosure	Yes (semi-voluntary)
8 Other Events	8.01	Other Events	No (voluntary)
9 Financial Statements and Exhibits	9.01	Financial Statements and Exhibits	No

Yes (from periodic) indicates items that were transferred from periodic reporting in the 10-Q and the 10-K to continuous and timely reporting in the 8-K

No (expanded) indicates items that were expanded to the point of essentially becoming new items

(Semi-voluntary) indicates items the requirements for which are triggered by the firm's disclosure of material events

(Voluntary) indicates items stemming from material events whose reporting are encouraged but not required

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