Fraud and Firm Performance: Keeping the Good Times (Apparently) Rolling

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1. Introduction

Corporate securities fraud is a recurring and troubling phenomenon. A growing academic literature has improved our understanding of a variety of causes and consequences of corporate misconduct. Many earlier studies focus on firm performance *during the period managers engage in fraudulent behavior* and on investor reactions to the *detection* of frauds and *disclosure* of regulatory actions and shareholder lawsuits. More recent work has focused on how *concurrent* investor optimism, monitoring by the market and regulators, governance mechanisms and the structure of managerial compensation influence firms' incentives to commit fraud.

In contrast to these papers, we believe that the *prior performance of firms themselves* is an important driver of misconduct when they suddenly encounter a setback, for several reasons. First, managers have strong incentives to project an image of sustained strong firm performance even when confronted with an adverse shock so that they can raise funds externally and/or exercise incentive stock options on attractive terms. Second, superior prior firm performance is most effective in avoiding detection of subsequent fraudulent behavior because it lowers the intensity of monitoring by the board, auditors, investors and regulators. Therefore, our objective is to examine empirically the stock market performance of firms *before* managers engage in allegedly fraudulent behavior. Specifically, we investigate whether the commission of securities fraud is *preceded* by surprisingly good long-term firm performance.

Our hypothesis that prior firm performance is an important driver of firm fraud fits with Cressey's fraud triangle (Cressey, 1950, 1953). According to this theory, fraud has three identifiable characteristics: financial pressure, opportunity, and realization. We find that the commission of alleged fraud is preceded by a sustained period (up to five years) of surprisingly good performance. A track-record of prior superior performance can put *financial pressure* on the firm's managers to continue the firm's outperformance. It can also enhance the *opportunity* to commit fraud by lessening the intensity of

monitoring by third parties and thereby reducing the likelihood of detection. Moreover, it could lead the bad actors to *rationalize* their bad acts as just keepin' the good times rollin'. Our paper thus contributes to the literature concerning the theory of corporate fraud, which seeks to explain what motivates firms to commit fraud (Dorminey, Fleming, Kranacher, and Riley, 2012; and Trompeter, Carpenter, Desai, Jones, and Riley, 2013).

We focus on one of the most visible forms of managerial fraud, those cases where there is an enforcement action brought by the Securities and Exchange Commission (SEC) and/or the Department of Justice (DOJ) alleging violations of Section 13(b) of the Securities Exchange Act of 1934.[1] Our final sample of cases comprises 561 enforcement actions initiated between 1968 and 2009 and is compiled from the Federal Securities Regulation (FSR) database (Karpoff, Koester, Lee, and Martin, 2012). For each case, we examine a sequence of four closely related events: the alleged commission of securities fraud, the fraud disclosure by the firm, the filing of a class action lawsuit, and the initiation of a regulatory enforcement action.

We examine abnormal stock performance of firms over one-, three-, and five-year horizons preceding the month the alleged fraud was committed, and in periods around the fraud disclosure, class action filing, and enforcement action dates. Our main results are: First, we find that the sample firms exhibit a significant upward abnormal price drift during the time horizons of up to five years preceding the commission of fraud. This is followed by significant price declines prior to fraud disclosure, class action filing, and regulatory proceedings, and then generally weak evidence of a negative price drift over the five years following class action filing and enforcement actions. Second, we find that fraud events result in a significant increase in the cost of equity capital for the fraud firm (untabulated for brevity). Finally, we find that investors react more negatively to fraud disclosure when fraud commission is preceded by abnormally positive stock returns. The patterns are broadly consistent with our main conjecture that firms tend to commit fraud when they confront a setback following a period of surprisingly good performance over an extended period, and disclose fraud when they face an abnormally negative stock price drift.

[1] In practice, while these enforcement actions concern violations under the accounting fraud statutes, some may also involve violations under the securities fraud statutes.

Our empirical study is inspired by several papers that examine a variety of factors that influence managers' incentives to commit fraud. Povel, Singh, and Winton (2007) argue that following periods of strong reported firm performance, some firm managers succumb to the pressure to keep reporting strong financial results despite deteriorating firm performance, while investors see little benefit from monitoring firms with positive public information. In Hertzberg (2005) during good times in firm performance, managerial manipulation delays the release of information about the true quality of the firm, but the opposite occurs when investors perceive worsening business conditions. This asymmetric learning dynamic leads to gradual booms and rapid recessions.

Our paper differs from previous studies because of our focus on *long-term firm-specific* performance during the *pre-fraud-commission* period as well as our application of the robust calendar-time portfolio methodology. Wang, Winton and Yu (2010) investigate the prediction that the incidence of corporate financial fraud is high when *contemporaneous* investor beliefs about *industry business conditions* are good because of weak monitoring incentives of investors (Povel, et al., 2007) and short-term executive compensation incentives (Hertzberg, 2005). Using a U.S. sample of securities lawsuits alleging accounting-related IPO frauds, they find that the incidence of fraud increases with the level of investor beliefs about industry prospects, and is positively related to short-term executive compensation. In contrast to their focus on contemporaneous investor beliefs about industry prospects as the driving force behind corporate misconduct, we conjecture that prior positive stock market performance of the firms themselves is associated with firms' fraud propensities.

Earlier studies by Kellogg (1984), Francis, Philbrick, and Schipper (1994a, 1994b), Bizjack and Coles (1995), Beck and Bhagat (1997), Bhagat, Bizjack, and Coles (1998), Ali and Kallapur (2001), DuCharme, Malatesta, and Sefcik (2004), Griffin, Grundfest, and Perino (2004), and Karpoff, Lee, and Martin (2008a) investigate the conventional 'fraud on the market' hypothesis. This hypothesis posits that firms make defective/misleading disclosures, which lead to positive abnormal returns during the class period, which is defined as the interval between the initial commission of alleged fraud and the final corrective disclosure. These positive abnormal returns during the class period are followed by negative abnormal returns when firms make corrective

disclosures. This hypothesis has little to say about firm performance prior to fraud commission, or about managerial incentives to commit fraud. The majority of these studies assess the stock price performance of firms primarily around one or more of the fraud-related events. While most studies concentrate on the wealth effects, some researchers also scrutinize changes in systematic risk, trading volume, firms' propensity to be sued, and industry spillover effects. For instance, Gande and Lewis (2009) document a large statistically significant negative stock price reaction to shareholder-initiated class action lawsuits and furnish evidence of a spillover effect as investors anticipate similar lawsuits based on earlier lawsuits against other firms in the same industry.

Other researchers have documented the costly reputation losses that result from fraud and other types of corporate misconduct (Beatty, Bunsis, and Hand, 1998; Alexander, 1999; Karpoff, Lee, and Vendrzyk, 1999; Karpoff, Lee, and Martin, 2008b; Murphy, Shrieves, and Tibbs, 2009; and Dechow, Ge, and Schrand, 2010). Karpoff et al. (2008b) explain that financial misrepresentation is particularly costly, imposing a reputational penalty on the firm that is more than seven times the amount of the direct legal and regulatory penalties. Jensen (2005) finds that managers sometimes take steps to prop up overvalued shares that ultimately lead to value destruction.

Empirical research on corporate fraud has also examined the impact of independence and financial and accounting expertise of corporate boards in preventing fraud (Beasley 1996; Dechow, Sloan, and Sweeney 1996; and Agrawal and Chadha 2005), and the role of executive compensation incentives (Goldman and Slezak, 2006; Peng and Roell, 2008; Armstrong, Jagolinzer, and Larcker, 2009; and Johnson, Ryan, and Tian, 2009). Dyck, Morse, and Zingales (2010) report that fraud detection does not rely on standard corporate governance actors (investors, SEC, and auditors), but rather, it takes a village, including several nontraditional players (employees, media, and industry regulators).

In contrast to these studies, our strong belief is that prior firm-specific good times generate not only powerful incentives to misreport when the firm is under stress but also provide an effective camouflage against detection. Therefore, we focus on abnormal drifts in returns, up to five years *before* the alleged fraud commission, in order to obtain a

more complete understanding of the drivers of securities fraud. Our empirical work is similar in spirit to Beck and Bhagat (1997) and Dechow, Ge, Larson, and Sloan (2011). Beck and Bhagat track the market performance of 127 firms facing allegations of securities fraud in class action lawsuits filed and settled between 1990 and 1993 for three years prior to and three years after the beginning of the class period. They find that the defendant firms exhibit higher systematic risk and experience positive market-adjusted CARs in the three years prior to the start of the class period, sharply negative abnormal returns during the class period (lasting about a year at the median), and no subsequent abnormal performance as compared to otherwise similar firms that are not accused of fraud. We employ a more robust statistical methodology than Beck and Bhagat (1997), and find that firms' pre-fraud superior stock price performance tends to be sustained over even longer periods extending up to five years, and furnish empirical evidence that this sustained superior pre-fraud performance is critical to understanding why some firms commit fraud.

Dechow et al. (2011) examine 2,190 Accounting and Auditing Enforcement Releases (AAERs) filed by the SEC between 1982 and 2005 and identify 676 distinct firms that misstated at least one of their quarterly or annual financial statements. They find that the misstating firms report higher accounting accruals.They argue that firms resort to earnings manipulation when expect growth fails to occur. Dechow et al. (2011) find that misstating firms have positive market-adjusted stock returns in the year prior to the initial accounting misstatement year.[2] However, they also show that misstating firms have declining performance at the time they commit accounting fraud according to a variety of financial and nonfinancial measures, and they conclude that firms manipulate their earnings to hide deteriorating firm financial performance in an attempt to maintain high stock market valuation. Our results build on Dechow et al.'s (2011). We compare fraud firms' performance to peer firm (not just general market) performance and find that fraud firms exhibit sustained superior stock price performance up to five years prior to committing fraud. Considered in conjunction with Dechow et al.'s (2011) evidence that these firms have declining performance at the time they commit fraud, our results furnish

[2] Crutchley, Jensen and Marshall (2007) report a similar pattern of pre-fraud abnormal stock price behavior for firms that commit accounting fraud. Dechow, Ge, and Schrand (2010) provide a comprehensive survey of the literature concerning earnings misstatements.

empirical support for our hypothesis that firms are more likely to engage in securities fraud (including accounting fraud) when they have experienced a sustained period of unusually good stock price performance but some adverse economic shock brings the good times to an end, and they resort to fraud to conceal the reversal in performance. In brief, they commit fraud to make it appear that the good times are still rolling when they know the truth is the good times have ended.

Given the tendency of frauds to cluster through calendar time by industry, controlling for potential cross-sectional dependence in long horizon market-adjusted abnormal returns is of paramount concern. To mitigate these biases, we use the calendar time portfolio methodology of Mitchell and Stafford (2000) and Boehme and Sorescu (2002).

2. Sample

Our sample comes from the Federal Securities Regulation (FSR) database described in Karpoff, Koester, Lee, and Martin (2012). This database consists of all 1,105 enforcement actions initiated by the SEC and/or the DOJ between 1968 and 2009 against firms for violations of Section 13(b) of the Securities Exchange Act of 1934. Two announcements of particular interest in the database are 'violation beginning date' and 'trigger date'.[3] We treat the violation beginning date as the date when an alleged fraud is first committed (*FC*).[4] The trigger date is the date when the firm first discloses to the public the behaviour that is the subject of the fraud allegation, which we refer to simply as the (alleged) fraud disclosure date (*FD*). In addition, we identify for each fraud episode the class action filing date (*CA*) and the start date of the regulatory enforcement action (*RA*) against the firm by the SEC or DOJ.

Since we are interested in studying the impact of pre-event long-run stock performance on the fraud propensity of firms, we limit our sample to only those cases which have stock trading history in the five-year period before the initial fraud

[3] The FSR database identifies in each case the date that an investor or firm observer might have imputed that "financial misconduct" by the public company first took place.
[4] The 'violation beginning date' is the date the regulators have legal authority for enforcement (USDOJ and SEC, 2012).

commission date. This filter resulted in a sample of 561 cases of alleged securities fraud committed over 1968 – 2009. We track the stock price performance of each of these firms from up to five years before fraud commission to up to five years after the start of the regulatory enforcement action. Neither IPO firms nor firms that are permanently delisted at the time of the fraud disclosure date are included in the sample.

Table 1 presents summary statistics for our firm sample. Note that of the full sample of 561 firms that allegedly committed fraud, 526 were still trading on U.S. stock exchanges at the time of fraud disclosure, 369 were subject to a regulatory enforcement action period, 333 were still trading during the 12-month window after the beginning of regulatory proceedings, and 297 faced class action lawsuits. The fraud disclosure occurs, on average, 39 months after the date of the initial fraud commission; class action lawsuits are filed, on average, four months after the fraud disclosure; and the average time between the class action lawsuit filing and the regulatory action is 23 months. Of the original 561 firms, only 333 (about 60%) remain listed as separate entities in the period following enforcement actions. In unreported analysis we find that approximately half the number of delisted firms declared bankruptcy and the other half merged with other firms.

Panel A shows that the median capitalization of firms at the time of the initial fraud commission is $308 million.[5] The average market beta for our sample firms prior to fraud commission (*Pre-FC Beta*) is 1.16, with a median of 1.00. The median stock price is $13.85 at the fraud commission date.[6] We compute the cumulative average stock returns over months (T_1,T_2) as

$$CARR_{T_1,T_2} = \frac{1}{N}\sum_{j=1}^{N}\sum_{t=T_1}^{T_2} RR_{jt} \qquad (1)$$

where RR_{jt} is the raw return on stock j in month t and N denotes the number of stocks in the sample. The median cumulative raw stock return is 99.10% during the five years prior to fraud commission, which means the stock essentially doubled in value.

The fraud commission event month (FC(0)) has a mean raw return of 1.9%, and the fraud disclosure month (FD(0)) has a mean raw return of -16.4%. The cumulative raw

[5] The alleged fraud sample includes one very large firm..
[6] One firm, had a per-share price of $17,500.

return in the 12-month period leading up to the fraud disclosure event (FD(-12,-1)) is just 1.2%; the class action filing event month's (CA(0)) mean raw return is -20.4%. We note that it is reasonably common for the fraud disclosure month to coincide with the class action filing month. The 12-month period following the class action filing (CA(1,12)) has a mean raw return of 5.6%; the regulatory action event month (RA(0)) has a -0.6% raw return; and the one-year period after regulatory action (RA(1,12)) has a sample mean raw return of 16%.

Panel B shows that the greatest concentration of fraud firms is in the Machinery/Manufacturing sector (32%), followed by Finance, Insurance, and Real Estate (13%), Lumber and Chemicals (13%), and Entertainment and Computing (13%). Panel C indicates that the study examines windows over the period 1963-2012.

Table 1 here

Figure 1 illustrates the long-term stock market performance of fraud firms in event time from 60 months before fraud commission to 24 months after fraud commission. We compute monthly stock returns on an equal-weighted portfolio of fraud firms. The graph shows the average rate of growth of a dollar invested in this fraud portfolio over the 84-month horizon computed from the buy-and-hold return over months (T_1,T_2):

$$BHRR_{T_1,T_2} = \left[\prod_{t=T_1}^{T_2}(1 + ARR_t) - 1\right] \quad (2)$$

where ARR is the equal-weighted stock return in event month *t*. The graph indicates that a one-dollar investment 60 months prior to initial fraud commission grows to about $3.80 as of the month of fraud commission. It peaks at approximately $4.50 about six months after initial fraud commission and then tapers off until 24 months after initial fraud commission. For comparison, we compute monthly stock returns on an equal-weighted portfolio of up to 12 peer firms (with the same two-digit SIC code and comparable market capitalization at the time of initial fraud commission) for each fraud firm. Overall, the peer portfolio covers 7,018 firms. The graph indicates that a dollar invested in this

equal-weighted peer portfolio grows to about $3.70 over the 84-month period surrounding fraud commission.

Figure 1 here

The 'difference' (defined as fraud minus peer performance) line shows that the outperformance of fraud firms peaks around six months after initial fraud commission at about $1.41 and tends to decline thereafter. This graphical evidence is consistent with our argument that securities frauds are preceded by surprisingly good firm-specific performance over an extended period, but are followed by rapid negative investor response. In Figure 1, the fraud firms' apparent outperformance does not peak until about six months after the beginning of the fraud. Their efforts to keep up appearances by engaging in fraud seem to work for about six months on average.

Table 2 presents univariate statistical significance tests on the (stock market) outperformance of fraud firms over their (industry and market capitalization) matched peers surrounding the month of fraud commission as portrayed in Figure 1. Our results show that the buy-and-hold return on the equal-weighted fraud portfolio over 60 months prior to initial fraud commission (*FC*(-60, -1)) is 282%, which is significantly greater than zero at the 1% level. The next column, Positive: Negative, indicates that 382 (179) firms earned positive (negative) returns, which is significantly different from zero at the 1% level using the generalized sign test. By comparison, the equal-weighted peer portfolio earns a buy-and-hold return of 174.3% over the pre-fraud-commission period, which is significantly (at 1%) lower than that of the fraud portfolio.

The next two rows indicate that firms in our fraud sample outperform the peer firms over the three- and one-year intervals prior to initial fraud commission. However, the differential stock performance turns in favour of peer firms during the month of initial fraud commission (*FC*(0)) and grows over the next 24 months. Overall, this baseline evidence indicates that firms allegedly committing securities fraud and as a result becoming ensnared in a regulatory enforcement action exhibit a significant upward price drift during the five-year period before initial fraud commission as compared with their industry and size-matched peers, but earn significantly worse raw returns in the two-year period following fraud commission.

Table 2 here

Table 2 also reports the proportion of the 561 fraud firms that appear in the top quartile of total returns realized by the 7,018 peer firms for each of the six periods around FC. Our pre-fraud-sustained-positive-price-drift hypothesis predicts (a) a disproportionately large fraction of the fraud firms to exhibit returns in the top quartile, at least during FC(-60,-1) and FC(-36,-1), (b) the fraction of fraud firms in the top quartile to decrease as FC(0,0) approaches as the economic factors that will give rise to the firm's change in fortunes eventually start to kick in, and (c) the fraud firms to be underrepresented post-FC as the firms' true performance deteriorates and becomes harder to conceal. The proportion of fraud firms in the top quartile exceeds 25% in both FC(-60,-1) and FC(-36,-1), and these difference are statistically significant at the 1% and 5% levels, respectively. The proportion falls to only about 20% in FC(-12,-1) and FC(0,0), and both shortfalls are statistically significant at the 1% level. Finally, the proportion remains statistically significantly below 25% in FC(+1,+12) but approximates 25% for the two-year post-FC period. These results are generally consistent with our hypothesis.

3. Abnormal returns

Next we turn to empirical estimates of monthly abnormal returns for the four events, initial fraud commission (*FC*), fraud disclosure *(FD*), class action filing (*CA*), and regulatory enforcement action (*RA*). Then we examine the long-run abnormal returns associated with these four fraud-related events.

Unlike the typical idiosyncratic firm-specific corporate events, the incidence of fraud is vulnerable to cross-sectional dependence because these events frequently occur in waves due to industry-wide and economy-wide shocks (Gande and Lewis, 2009). This problem is known to create significant biases in tests of long-run abnormal returns, especially in samples overpopulated with small firms. In the presence of these problems, Mitchell and Stafford (2000) show that the conventional buy-and-hold abnormal returns

as well as cumulative abnormal returns measured over long horizons tend to compound the biases in abnormal returns due to model misspecification. Following their recommended approach, we employ the calendar time portfolio methodology (CTPM) coupled with the Fama and French (1993) three-factor model to assess the abnormal performance of fraud firms.

Specifically, we construct for each calendar month *m* both equal-weighted and value-weighted calendar time portfolios of firms subject to fraud events during the succeeding [*m + 1, m + h*] months, where *h* refers to horizons of 12, 36, and 60 months associated with fraud commission. Monthly portfolio returns are calculated in pre- and post-event windows for each of the four fraud events (*FC, FD, CA* and *RA*). These calendar time portfolios are dynamically rebalanced each month, and the prior month market capitalizations are used to compute value-weighted returns.

To measure the long-run pre-event performance, we follow the CTPM and regress the monthly calendar time portfolio excess returns on the Fama and French (1993) three factors to estimate the intercept:

$$R_{p,t} - R_{f,t} = a_p + \beta_p(R_{m,t} - R_{f,t}) + s_p SMB_t + h_p HML_t + e_{p,t} \qquad (3)$$

where $R_{p,t}$ refers to the (equal- or value-weighted) return on the calendar time portfolio of fraud firms, and $R_{f,t}$ is the return on one-month T-bills. The regressors are the excess return on the CRSP value-weighted market portfolio ($R_{m,t} - R_{f,t}$), the difference in returns between the value-weighted portfolios of small and big stocks (SMB_t), and the difference in returns between the value-weighted portfolios of high- and low-book-to-market-ratio stocks (HML_t). The regression intercept a_p provides an estimate of monthly abnormal performance of the calendar time portfolio of fraud firms. Since the number of firms in the calendar time portfolios can vary widely over time with monthly rebalancing, and because there can be small firm and large firm effects, we use both ordinary least squares (OLS) and weighted least squares (WLS) procedures. Monthly returns in the WLS regressions are weighted by the square root of the number of firms contained in the calendar time portfolio. The WLS *t*-statistics are calculated using the White (1980) procedure. Returns, capitalization and stock prices were obtained from the Center for Research in Securities Prices (CRSP) data base. Treasury bill yields and indices for the

small-minus-big (SMB) and high-minus-low (HML) factors were obtained from Kenneth R. French's data library website.

Table 3 here

3.1. *Abnormal returns during the months of fraud commission, disclosure, class-action filing, and regulatory actions*

Estimates of the Fama-French intercepts for the four fraud events are presented in Table 3. Securities fraud takes two general forms: failure to disclose economically significant bad news (material omissions) and issuing economically significant misleading positive information (material misstatements). If the firm fails to disclose bad news (e.g., loss of a huge sales contract, or misreporting normal cash flows even in the face of declining revenues), then abnormal returns for the month of initial fraud commission (*FC*(0)) would be zero because the market is unaware of the bad news, which is not revealed until *FD(0)*. In the other case, the firm affirmatively misleads the market (e.g., states that earnings will grow 10% when it knows they can't grow more than 5%),leading to positive abnormal return for *FC(0)* because the market would react to the favorable misleading information. Whether the sample *FC(0)* abnormal return is significantly different from zero would thus depend on the mix of frauds in the sample. Our estimates reported in Table 3 show that Fama-French alphas from calendar time portfolios for the month of initial fraud commission range from -0.3% to 0.1% per month, but none is significantly different from zero at the 10% level. These results suggest that our sample is heavily weighted toward nondisclosures of bad information, i.e., failure to disclose the accounting fraud that is the subject of the enforcement action.

Abnormal returns for the month of fraud disclosure (*FD(0)*) vary from -18.9% (EW, OLS) to -16.5% (VW, WLS) per month, which are all highly statistically significant. Also, we find that our sample firms suffer average monthly negative abnormal returns of 22.6 to 23.8% upon the filing of 10b-5 class action lawsuits (*CA(0)*). These estimates reflect the effects of lawsuits as well as those of fraud disclosures if both events occur during the same month. The greater magnitude (in absolute value) of abnormal returns associated with the lawsuits indicates that the class action filings convey new information about securities frauds in comparison to disclosures made by the

fraud firms, leading investors to fear large legal settlements on top of potential penalties growing out of any enforcement action. Since the PSLRA became law in 1995, plaintiff lawyers have had to plead their claims with greater particularity. The class action lawsuits should have more 'bite' because the plaintiff law firms are more likely to pursue the biggest frauds with the greatest potential payoffs. Further, we find that the firms in our sample suffer average monthly negative abnormal returns ranging from 0.7 (VW, WLS) to 1.9% (EW, WLS) upon the initiation of regulatory actions against the firm (*RA(0)*) but only the EW, WLS measure is marginally statistically significant, at the 10% level.

The event month abnormal returns reported in Table 3 with respect to initial fraud commission, fraud disclosures, initial class action filings, and enforcement actions are broadly consistent with the results reported by Bhagat, Bizjack, and Coles (1998), Griffin, Grundfest, and Perino (2004), Karpoff, Lee, and Martin (2008b) and Gande and Lewis (2009). We strengthen the accumulated body of empirical evidence concerning these announcement effects by employing more robust analytical methodologies, in particular, the Fama-French (1993) three-factor model, the CTPM, and value weighting.

3.2. *Abnormal performance prior to fraud commission*

To test for prior outperformance implied by our conjecture that firms are more likely to commit fraud when they experience an adverse shock following a period of (fortuitous) "good times", we examine the intercepts from the Fama-French three-factor regressions for horizons of one, three, and five years prior to the first month of the alleged occurrence of fraud. The pre-fraud price drift test results are presented in Table 4. For the one-year horizon preceding the first month of the alleged fraudulent reporting (*FC(-12,-1)*), our results show that the average abnormal returns across 561 fraud firms in our sample are (EW, WLS) 1.5% per month, which is statistically significant at the 1% level. The figures for 36 months and 60 months prior to *FC* are 1.2% and 0.9% per month, respectively. The EW OLS estimates are similarly statistically significant, with monthly abnormal returns of 0.9%, 0.8%, and 0.6%, respectively, during the three pre-event windows. Further, we notice that the value-weighted (VW) monthly abnormal returns are 0.2%, 0.3%, and 0.1% in the three pre-*FC* windows, respectively (only 0.3%

is statistically significant at the 5% level). These VW estimates are much smaller than the corresponding EW estimates, suggesting that positive prior abnormal performance is concentrated in relatively smaller event firms.

Table 4 here

To illustrate the economic significance of these results, consider the abnormal return of 1.2% per month for a 36-month horizon. This aggregates into an abnormal performance of about 43% over three years. This abnormal performance appears large when compared to the realized long-run average equity market risk premium ($R_m - R_f$) of approximately 7% per year. Our results support our hypothesis that superior firm-specific performance prior to the initial fraud commission date is an important driver of corporate financial misconduct due to some firm managers resorting to fraud to keep up the appearance that the good times are continuing to roll when adversity has brought them to an end.

Our findings complement the analysis of Wang, et al. (2010), who report that the incentives to commit fraud increase with the concurrent level of investor beliefs about industry prospects, the intensity of investor monitoring, and the amount of short-term incentive compensation. It is worth comparing the different roles played by firm-specific performance in the two studies. In their analysis of frauds involving accounting irregularities relating to initial public offerings (IPOs), Wang, et al. (2010) find that firms that experience *large negative returns* post-IPO are likely to be sued for fraud because shareholders are unhappy about their investment losses. They use annual buy-and-hold stock returns *measured in the year of fraud detection* as a control variable in their regression tests. Consistent with this argument, they find a significant negative relation between a firm's fraud propensity and its contemporaneous stock returns, which implies that firms are more likely to commit fraud the more negative their true performance at the time of their IPO. In contrast, we focus on *long-term positive firm performance prior to the initial commission of fraud* as a driver of misconduct. We find that firms are more likely to commit fraud when their performance falters following a sustained period of unusually good performance. Some firm managers resort to fraud to conceal the reversal

in performance by making it appear that the good performance is continuing even when it really is not.

3.3. *Abnormal performance preceding fraud disclosure, class action litigation, and regulatory enforcement actions*

As we know from prior empirical research (Beck and Bhagat, 1997; Crutchley, Jensen, and Marshall, 2007; and Dechow, Ge, and Schrand, 2010), eventually there will be deterioration in firm performance, often in conjunction with a worsening of the industry or general economic environment, and this deterioration eventually makes the fraud unsustainable, leading to a fraud allegation by the SEC in an enforcement action or by shareholders in a securities fraud class action lawsuit. Based on prior studies, we expect negative abnormal returns over the months immediately preceding fraud disclosure (*FD*) as investors learn about the event firm's unexpectedly poor financial performance, as well as the one-year windows prior to the filing of class action lawsuits (*CA*) and the announcement of regulatory actions (*RA*). As noted earlier, these three time intervals tend to overlap in many fraud episodes and are typically marked by probing news reports and revelations about the previously concealed factors responsible for the firm's deteriorating financial performance.

In Table 5 we report the Fama-French alphas for the calendar time portfolios for these three pre-event windows. with sample sizes of 547, 304, and 379 firms, respectively. As expected, the *EW* and *VW* OLS and WLS monthly abnormal return estimates over 12 months prior to fraud disclosure (*FD(-12,-1)*) are all negative and highly statistically significant, ranging from -0.08% to -1.3% per month. The estimated alphas are all negative over the pre-class-action (*CA(-12,-1)*) and pre-regulatory-action (*RA(-12,-1)*) time intervals, although only the pre-class-action abnormal returns are statistically significant at the 5% level. Overall, these pre-event negative price drifts suggest that firm performance deteriorates over the year preceding *FD and CA*, leading to disclosure of the fraudulent activity, class action lawsuits and/or regulatory enforcement actions.

Table 5 here

3.4. *Abnormal returns following class action lawsuits and regulatory enforcement actions*

Next, we investigate possible stock price drift following the filing of class action lawsuits and regulatory actions over one-, three-, and five-year post-event horizons. Karpoff, et al. (2008b) explain that the revelation of securities fraud can have negative effects on a firm's business and an adverse impact on its reputation. Murphy, et al. (2009) find that the loss of reputation from corporate misconduct results in a decrease in stock analysts' subsequent earnings forecasts and an increase in the firm's total risk as measured both by stock return volatility and by concordance among analysts' forecasts. These effects suggest that the initial negative reaction to the fraud disclosure, the filing of class action lawsuits, and the announcement of enforcement actions could be followed by a negative long-horizon abnormal drift in returns, unless the stock market fully anticipates the subsequent reduction in profitability and fully recognizes the higher cost of capital by the time the fraud, the class action litigation, and/or the regulatory enforcement action have been disclosed.

However, the negative price drift after the filing of the class action lawsuits and regulatory enforcement actions is likely to be smaller in magnitude than the pre-fraud long-horizon positive abnormal returns. In addition, we expect the post-event negative price drift to be shorter-lived than the pre-fraud long-horizon positive price drift, because we expect swifter investor reaction in the bad times that surround the fraud disclosure, class action filing, and/or initiation of an enforcement action.

Table 6 here

We report the monthly calendar time portfolio Fama-French alphas for one-, three- and five-year horizons following the class action filing in Panel A of Table 6. The abnormal return estimates for the first year following the first class-action lawsuit vary from -0.9% to -1.6% per month, which are all statistically significant at the 5% level or better. This pattern of abnormal returns is not surprising because there typically are subsequent disclosures in which firms confess that the fraud began earlier than previously

reported or disclose that other types of fraud were also perpetrated in addition to what was initially admitted, resulting in further Rule 10b-5 lawsuits. By contrast, for the three- and five-year horizons only, the equal-weighted OLS monthly intercept estimates (-1.0% and -0.7%, respectively) are statistically significant, and the remaining four equal- and value-weighted WLS estimates are insignificant at the 10% level. These findings suggest that the negative abnormal returns gradually abate over the 36- and 60-month post-class-action intervals, especially when abnormal returns over the first 12 months are not considered.[7]

In Panel B, we note that eight out of the nine abnormal return measures over the one-, three- and five-year horizons following the initiation of regulatory enforcement actions are statistically insignificant at the 10% level, and the remaining alpha is significant but only at the 10% level. This finding is not surprising since the average time lag between the first class-action lawsuit and the ensuing enforcement action is approximately two years. Overall, we find strong evidence of significantly negative stock price drift for the first year following the class action lawsuit filing, little evidence of significantly negative stock price drift beyond the first year following the class action filing, and only extremely weak evidence of any negative stock price drift following the initiation of regulatory enforcement actions.

Comparing the one-year returns in Tables 5 and 6 pre- and post-class action filing, we find that the pre-class-action-filing one-year returns are greater in magnitude and have greater statistical significance than the post-class-action-filing one-year returns. Likewise, the pre-enforcement-action one-year returns are greater in magnitude and have greater statistical significance than the post-enforcement-action one-year returns. In addition, the post-enforcement-action returns have the opposite sign. The relative behavior of the pre- and post-class-action-filing returns and the enforcement-action returns is consistent with our twin expectation of a long-horizon positive price drift pre-fraud commission and a contrasting swift negative price drift following the fraud disclosure events.

In summary, the results discussed thus far provide evidence of insignificant abnormal returns in the month of initial fraud commission and significantly negative abnormal returns in the months of fraud disclosure, the filing of class-action lawsuits, and

[7] A test of the abnormal returns for the period CA(13,36) confirms this statement.

the initiation of regulatory enforcement actions. Furthermore, we find significantly positive price drift over a five-year period preceding initial fraud commission, negative abnormal returns over a one-year period preceding fraud disclosure, class action and regulatory actions, and little evidence of significantly negative abnormal performance over the three- and five-year horizons following the filing of class action lawsuits and the initiation of enforcement actions. The evidence concerning the statistically significant negative stock price reactions to the fraud disclosure, class action filing and regulatory enforcement action announcements coupled with the absence of strong evidence regarding negative stock price drift more than one year beyond the class action filing or at all following the initiation of a regulatory enforcement action are consistent with a rapid investor response to the bad news embodied in those three announcements.

4. How important is prior firm performance?

In this section we examine hypotheses that can explain the stock market's reaction to fraud disclosure. To examine the incremental explanatory power of our pre-fraud-positive-price-drift hypothesis, we conduct a cross-sectional regression of the Fama-French three-factor alphas for the month of fraud disclosure on the abnormal returns (alphas) for each of three pre-fraud commission windows: *FC(-12,-1)*, *FC(-36,-1)* and *FC(-60,-1).* We also consider a range of firm, industry, and economic characteristics. To account for the market-wide boom-bust hypothesis, we employ an indicator variable 'NBER down economy in FD month,' which takes the value 1 when the fraud disclosure month is classified as a month when the economy is in decline in the NBER series. To account for the executive-compensation-incentive-structure hypothesis, we create a measure of short-term compensation incentives, which is calculated by expressing the total executive compensation paid in the form of salary, bonuses, and other income as a fraction of total expected executive compensation.[8] We also examine the influence of firm-specific factors, the firm's ownership structure and governance characteristics, its

[8] About 60% of the firms in the sample are not in Execucomp. For these firms we compute the industry median short-term compensation incentives based on firms in the same 2-digit SIC code as the sample firm.

size and industry, the type of accounting fraud, and share trading activity by firm insiders.

The cross-section analysis takes the following form:

$$AR(FD(0))_i = a + b_1 \text{ Pre-FCAlpha}_i + b_2 \text{ Insider Trading Flag}_i + b_3 \text{ Insider Ownership Pct}_i + b_4 \text{ Combined Block}_i / \text{ Institution Ownership}_i + b_5 \text{ Restatement Flag}_i + b_6 \text{ Fraction of Independent Directors}_i + b_7 \text{ Combined Ownership*BOT Independence}_i + b_8 \text{ Ln(Size)}_i + b_9 \text{ ST Compensation Incentive}_i + b_{10} \text{ NBER Down Economy in FD Month}_i + b_{11} \text{ Pre\_PSLRA}_i + b_{12} \text{ Post\_SOX}_i + b_{13\text{-}20} \text{ Industry Fixed Effects}_i + e \quad (4)$$

The dependent variable AR(*FD(0)*) is the firm's Fama-French three-factor model abnormal return in the fraud disclosure event month. Pre-FC Alpha is defined above; Insider Trading Flag indicates whether this activity was involved in the misconduct; Insider Ownership Pct is the percentage of stock owned by insiders; Combined Block / Institution Ownership is the combined percentage of shares owned by institutional investors and block owners; Restatement Flag is an indicator variable that takes on the value 1 when the case involves a restatement of the firm's financial statements; Fraction of Directors Independent is the percentage of the board of directors that are independent; Combined Ownership*BOT Independence is an interaction measure that incorporates the values for the two corporate governance variables: Combined block / institution ownership * Fraction of independent directors; Ln(Size) is the natural logarithm of the capitalization of the firm at the fraud commission date; and ST Compensation Incentive and NBER Down Economy in FD Month are defined above. Three regulatory regimes were in effect during portions of the period of coverage. First, the period 1968-1995 is the pre-Private Securities Litigation Reform Act of 1995 (PSLRA) period. Second, there is the period after the PSLRA but before the Sarbanes-Oxley Act of 2002 (SOX). Finally, there is the period after SOX, 2002-2011. We expect that the PSLRA's more stringent pleading standards would screen out the less meritorious class action lawsuits and result in a post-PSLRA sample in which the financial effects of securities fraud would be more pronounced. SOX raised the financial reporting standards required of public company

boards and management and increased the penalties for accounting fraud by making top executives personally liable, so it is expected that the new checks and balances introduced through SOX should make it less likely that firms would engage in serious accounting fraud and, therefore, more likely that the negative effects of accounting fraud disclosures should be attenuated post-SOX. Pre-PSLRA is an indicator variable set to 1 if the fraud disclosure event occurred in or before 1995; and Post-SOX is an indicator variable set to 1 if the fraud disclosure event occurred in or after 2002. Industry Fixed Effects is a series of indicator variables that distinguish the firm's industry based on the first digit of the firm's primary SIC code, with nine industry sectors in total being modelled.

Table 7 here

Table 7 reports the results of the cross-sectional analysis for three cases, which correspond to the pre-fraud-commission stock price drift five years (Model 1), three years (Model 2), and one year (Model 3) prior to the fraud commission date. First, the coefficient of the Pre-FC Alpha (FC(-60,-1) F-F alpha) variable in Model 1 is -2.264, which is highly statistically significant at the 1% level. This coefficient implies that the Fama-French alpha drops by 2.264% during the month of fraud disclosure for each 1% increase in the monthly F-F alpha during the five-year period prior to fraud commission. This evidence suggests that investors are deeply disappointed when it is revealed that firms that have exhibited surprisingly good (sustained) prior performance have committed fraud. The marginal effect of prior stock price performance associated with FC(-36,-1) is -1.058 (significant at 1% level). The coefficient estimate associated with FC(-12,-1) is negative but statistically insignificant. Thus, the impact of prior positive price drift on investor reactions declines rapidly as the fraud disclosure date approaches. Also significant in a negative way were the effects of Insider Trading and Restatements, which are expected. Compensation Structure had no detectable bearing on abnormal returns in the estimation window in any of the models. The state of the economy, NBER Down Economy, has a statistically significant negative coefficient with implied large abnormal returns in all three models, which supports the Povel, Singh and Winton (2007)

and Wang et al (2010) hypothesis that investors react to fraud disclosures more strongly when the economy is in recession. Regulatory effects are mixed in sign and are not statistically significant. The negative effects of fraud disclosure are less severe post-SOX, as expected.

The empirical results reported in Table 7 provide strong empirical support for our claim that sustained surprisingly good prior stock price performance over (up to) five years before the commission is an important driver of corporate fraud, even after controlling for the incentive compensation effects and business cycle effects that prior studies have emphasized.

5. Conclusion

Based on stylized facts and recent economic models of corporate behavior, we conjecture that corporate securities frauds are preceded by surprisingly good firm-level stock price performance, but are followed by a swift negative price adjustment after the public disclosure of the fraud. We investigate the pre- and post-event price drifts by examining the long-term stock performance of a sample of 561 firms that were alleged to have committed securities fraud over 1968-2009 and faced enforcement actions by the SEC and/or the DOJ. Using the calendar time portfolio methodology, our results indicate strong stock price run-up over horizons as long as five years before the alleged misconduct begins. We also find that the negative reaction of investors to fraud disclosure and class action lawsuits and enforcement actions is strongly related to the magnitude of the pre-fraud positive stock price drift.

Past studies have examined several possible drivers of corporate propensities to commit fraud: contemporaneous investor beliefs about industry business conditions; less intensive monitoring by investors, regulators and other agents; the structure of managerial incentive compensation contracts; and flawed corporate governance mechanisms. We document an important additional factor. We find that sustained firm-specific positive stock price performance for up to five years followed by the almost inevitable adverse shock, which eventually brings the good times to an end, generally precedes corporate

fraud. Fraud occurs when firm managers engage in misconduct in a misguided attempt to keep the good times (apparently) rolling despite the negative shock. An interesting avenue for future research would involve investigating what really motivates those firm managers who commit fraud. Not every firm that has a sustained period of supernormal performance and then encounters adversity commits fraud. Why do some managers choose to commit fraud while others do not?

The desire to keep the good times rolling appears to be a very important driver of fraudulent behavior, even after controlling for the executive compensation incentive effects and business cycle effects emphasized in prior studies. Our robust findings of positive abnormal returns for up to five years preceding initial fraud commission suggest that regulators and investors would be well-advised to scrutinize the behavior of firms that exhibit surprisingly persistent superior performance over an extended period. If the financial results appear too good to be true, a closer examination might just reveal that they indeed are.

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Tables

Table 1
Summary Statistics

Panel A: Summary Statistics

VARIABLE	N	MEAN	MEDIAN	STDDEV	MAX	MIN
Capitalization ($ billion)	561	5.214	0.308	21.849	237	0.000
Pre FC Beta	561	1.161	1.001	1.236	12	-9.006
Price at FC(0)	561	57.030	13.850	741.600	17500	0.000
Raw Cumulative Return FC(-12,-1)	561	0.343	0.252	0.737	4.503	-2.423
Raw Cumulative Return FC(-36,-1)	561	0.908	0.715	1.158	11.250	-2.087
Raw Cumulative Return FC(-60,-1)	561	1.254	0.991	1.213	6.579	-1.647
Raw Return FC(0)	561	0.019	0.002	0.173	1.100	-0.733
Raw Cumulative Return FD(-12,-1)	547	0.012	0.005	0.631	5.588	-2.354
Raw Return FD(0)	526	-0.164	-0.115	0.282	2.294	-0.905
Raw Return CA(0)	297	-0.204	-0.157	0.291	1.078	-0.905
Raw Cumulative Return CA(1,12)	297	0.056	0.051	0.723	2.366	-4.201
Raw Cumulative Return CA(1,24)	297	0.223	0.279	0.878	3.520	-3.994
Raw Return RA(0)	369	-0.006	0.002	0.191	1.307	-0.790
Raw Cumulative Return RA(1,12)	333	0.161	0.187	0.643	3.828	-2.640
Raw Cumulative Return RA(1,36)	333	0.366	0.414	0.950	4.692	-3.907

Panel B: Distribution of the sample across industries

4-Digit SIC	Industry	Frequency of Fraud
0000-1000	Agricultural	2
1000-1999	Mining and Construction	24
2000-2999	Lumber and Chemicals	74
3000-3999	Machinery/Manufacturing	180
4000-4999	Transportation/Utilities	40
5000-5999	Wholesale Trade	71
6000-6999	Finance, Insurance, Real Estate	77
7000-7999	Entertainment/Computing	74
8000-9999	Services	19
Total		561

Panel C: Distribution of the sample across time

Year	Frequency of Fraud Commission
1968-74	9
1975-79	15
1980-84	37
1985-89	60
1990-94	90
1995-99	153
2000-04	170
2005-10	27
Total	561

Notes: The sample consists of up to 561 cases where firms were subject to SEC and DOJ Enforcement Actions relating to frauds commissioned over 1968 - 2009. Each case has at least 18 months of trading data in the pre fraud commission period. In subsequent periods the sample size drops away as firms are delisted, halted, or otherwise fail to trade in the interval of observation. Capitalization is measured at the time of the estimated fraud commission date (FC). Beta is estimated over over five years in the 60 month window before the fraud commission, FC(-60,-1) using the market model specification. Raw cumulative return is the sum of raw monthly returns in the representative period. FD is the trigger date for the fraud disclosure. RA is the date the regulatory action period starts. CA is the date of the first class action lawsuit. A number of the firms are not subject to class action lawsuits.

Table 2

Compound Raw Returns before and after the Fraud Commission Month

	Fraud firms			Peer firms			Difference				
	(1) BHRR			(2) BHRR							
Months	EW		Positive: Negative	EW		Positive: Negative	(1) - (2)		Proportion of 561 in the top quartile of returns in peer firms	Expected proportion	T-stat
FC(-60,-1)	282.0%	***	382:179>>>	174.3%	***	4540:2478>>>	107.7%	***	0.273	0.25	4.37 ***
FC(-36,-1)	145.7%	***	386:175>>>	84.3%	***	4395:2618>>>	61.4%	***	0.262	0.25	2.25 **
FC(-12,-1)	39.8%	***	344:217>>>	24.8%	***	4084:2921>>>	15.0%	***	0.202	0.25	-9.33 ***
FC(0,0)	1.9%		280:265	3.7%	***	3668:3087>>>	-1.8%	***	0.198	0.25	-10.01 ***
FC(+1,+12)	15.6%	***	285:276	19.0%	***	3748:3197>>>	-3.4%	***	0.221	0.25	-5.56 ***
FC(+1,+24)	17.3%	***	254:307<<	36.3%	***	3856:3092>>>	-18.9%		0.246	0.25	-0.74

Notes: Buy-hold raw returns (BHRR) are estimated in periods before and after fraud commission for a sample of firms who are accused of committing fraud between 1968 and 2009. A sample of matching peers over the same event period time frames are also examined. An equal-weighted (EW) portfolio returns approach is used. Generalized sign Z and generalized sign tests are used to test significance. The number of observations is up to 561 fraud firms and up to 7018 peer firms, depending on the window of observation. Peers are taken from the closest dozen firms in terms of capitalization within the fraud firm's two-digit SIC code. Firms named in other fraud episodes are excluded from the peer sample. Standard deviation for a sample proportion, p, from a sample of size n is sqrt(p*(1-p)/n). T-stat is for the difference between the "Proportion of 561…" and the expected proportion.

The symbols *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

The symbols < or > correspond to *, **, *** and show the direction and generic one-tail significance of the generalized sign test.

Table 3

Abnormal Returns over the Month of the 1) Fraud Commission, 2) Fraud Disclosure, 3) Class Action Filing, and 4) Regulatory Action

		Fraud Commission FC(0) intercept		Fraud Disclosure FD(0) intercept		Class Action CA(0) intercept		Regulatory Action RA(0) intercept	
Calendar Portfolio Weighting	Model								
N		561		526		297		369	
EW	WLS	0.001		-0.179		-0.226		-0.019	
t		*0.11*		*-14.28*	***	*-14.15*	***	*-1.74*	*
EW	OLS	-0.003		-0.189		-0.238		-0.018	
t		*-0.30*		*-12.15*	***	*-13.08*	***	*-1.52*	
VW	WLS	-0.002		-0.165		-0.230		-0.007	
t		*0.03*		*-12.53*	***	*-12.93*	***	*-0.64*	

Notes: Abnormal returns are estimated over the initial months of the 1) Fraud Commission, 2) Fraud Disclosure, 3) Class Action Filing, and 4) Regulatory Action for a sample of firms subject to regulatory enforcement actions due to alleged fraud commission during 1968-2009. For each month equal- (EW) and value-weighted (VW) calendar time portfolio returns are calculated. Excess returns on these portfolios, $R_{p,t} - R_{f,t}$, are used to estimate the intercept of the Fama and French (1993) three-factor model (F-F): $R_{p,t} - R_{f,t} = \alpha_p + \beta_p(R_{m,t} - R_{f,t}) + s_pSMB_t + h_pHML_t + e_{p,t}$. $R_{f,t}$ is the return on one-month T-bills, $(R_{m,t} - R_{f,t})$ is the excess return on the CRSP value-weighted market portfolio, SMB_t is the difference in returns between portfolios of small and big stocks, and HML_t is the difference in returns between portfolios of high and low book-to-market ratio stocks. The regression intercept provides an estimate of monthly abnormal performance. Both ordinary and weighted least squares (OLS and WLS) time series regressions are estimated, weighting monthly returns in the WLS model by the square root of the number of firms contained in the month. Value-weighted returns use the prior month capitalization as the weighting vector. The t-statistics of the intercepts are shown under each parameter estimate and are calculated using White's (1980) heteroskedasticity-consistent method.

The symbols *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 4

Long Horizon Abnormal Returns Prior to Fraud Commission

Calendar Portfolio Weighting	Model	One-year horizon, FC(-12,-1) intercept		Three-year horizon, FC(-36,-1) intercept		Five-year horizon, FC(-60,-1) intercept	
EW	WLS	0.015		0.012		0.009	
t		*6.37*	***	*7.81*	***	*7.41*	***
EW	OLS	0.009		0.008		0.006	
t		*2.85*	***	*3.48*	***	*3.15*	***
VW	WLS	0.002		0.003		0.001	
t		*0.69*		*1.69*	**	*0.94*	

Notes: Abnormal returns are estimated for the one-, three-, and five-year periods preceding the month of the fraud commission for a sample of firms subject to regulatory enforcement actions due to alleged fraud commission during 1968-2009. For each month equal- (EW) and value-weighted (VW) calendar time portfolio returns are calculated. Excess returns on these portfolios, $R_{p,t} - R_{f,t}$, are used to estimate the intercept of the Fama and French (1993) three-factor model (F-F): $R_{p,t} - R_{f,t} = \alpha_p + \beta_p(R_{m,t} - R_{f,t}) + s_pSMB_t + h_pHML_t + e_{p,t}$

$R_{f,t}$ is the return on one-month T-bills, $(R_{m,t} - R_{f,t})$ is the excess return on the CRSP value-weighted market portfolio, SMB_t is the difference in returns between portfolios of small and big stocks, and HML_t is the difference in returns between portfolios of high and low book-to-market ratio stocks. The regression intercept provides an estimate of monthly abnormal performance. Both ordinary and weighted least squares (OLS and WLS) time series regressions are estimated, weighting monthly returns in the WLS model by the square root of the number of firms contained in the month. Value-weighted returns use the prior month capitalization as the weighting vector. The t-statistics of the intercepts are shown under each parameter estimate and are calculated using White's (1980) heteroskedasticity-consistent method. N = 561.

The symbols *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 5

Long Horizon Abnormal Returns Prior to Fraud Disclosure, Class Action Filing, and Regulatory Action

		One-year horizon pre-fraud disclosure intercept		One-year horizon pre-class action period intercept		One-year horizon pre-regulatory enforcement action intercept	
Calendar Portfolio Weighting	Model	FD(-12,-1)		CA(-12,-1)		RA(-12,-1)	
		N=547		N=304		N=379	
EW	WLS	-0.011		-0.025		-0.004	
t		*-4.20*	***	*-7.28*	***	*-1.38*	*
EW	OLS	-0.013		-0.026		-0.006	
t		*-3.86*	***	*-5.05*	***	*-1.59*	*
VW	WLS	-0.008		-0.024		-0.004	
t		*-2.74*	***	*-6.76*	***	*-1.27*	

Notes: Abnormal returns are estimated for the one-year period preceding the month of the fraud disclosure, the first class action filing, and the regulatory enforcement action for a sample of firms subject to regulatory enforcement actions due to alleged fraud commission during 1968-2009. For each month equal- (EW) and value-weighted (VW) calendar time portfolio returns are calculated in the manner described in Table's 3 and 4. The t-statistics of the intercepts are shown under each parameter estimate and are calculated using White's (1980) heteroskedasticity-consistent method.

The symbols *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 6

Long Horizon Abnormal Returns After Class Action Filing and Regulory Enforcement Action

		Panel A: Post Class Action Filing		
Calendar Portfolio Weighting	Model	One-year horizon CA(1,12) - intercept	Three-year horizon CA(1,36) - intercept	Five-year horizon CA(1,60) - intercept
EW	WLS	-0.009	-0.003	-0.002
t		*-2.03* **	*-1.13*	*-0.86*
EW	OLS	-0.016	-0.010	-0.007
t		*-2.78* ***	*-2.52* ***	*-2.15* **
VW	WLS	-0.011	-0.004	-0.005
t		*-2.37* ***	*-1.08*	*-0.94*
		Panel B: Post Regulory Action		
		One-year horizon	Three-year horizon	Five-year horizon
EW	WLS	0.003	-0.0005	0.001
t		*0.77*	*-0.25*	*0.66*
EW	OLS	0.001	-0.002	0.000
t		*0.18*	*-0.70*	*-0.05*
VW	WLS	0.002	-0.003	-0.002
t		*0.54*	*-1.48* *	*-0.68*

Notes: Abnormal returns are estimated for the one-, three-, and five-year periods post class action filing and post regulatory action for a sample of firms subject to regulatory enforcement actions due to alleged fraud commission during 1968-2009. For each month equal- (EW) and value-weighted (VW) calendar time portfolio returns are calculated in the same manner as in Tables 3, 4, and 5. The t-statistics of the intercepts are shown under each parameter estimate and are calculated using White's (1980) heteroskedasticity-consistent method. N = 333 in the post regulation sample and 297 in the post class action sample.

The symbols *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 7

Relative Importance of Surprisingly Good Prior Performance

	Model 1 FC(-60,-1) Alpha			Model 2 FC(-36,-1) Alpha			Model 3 FC(-12,-1) Alpha		
Dependent Variable	AR FD(0)	*t value*		AR FD(0)	*t value*		AR FD(0)	*t value*	
Intercept	-0.182	*-1.03*		-0.196	*-1.09*		-0.222	*-1.23*	
Pre FC Alpha	-2.264	*-5.23*	***	-1.058	*-3.09*	***	-0.151	*-0.93*	
Insider Trade Flag	-0.069	*-1.91*	*	-0.076	*-2.06*	**	-0.081	*-2.18*	**
Insider Ownership pct	0.046	*0.69*		0.055	*0.82*		0.063	*0.93*	
Combined Block + Institution Ownership	0.032	*0.52*		0.039	*0.62*		0.046	*0.72*	
Restatement Flag	-0.090	*-3.15*	***	-0.098	*-3.37*	***	-0.107	*-3.68*	***
Fraction of Independent Directors	0.049	*0.66*		0.065	*0.85*		0.094	*1.24*	
Combined Ownership*BOT Independence	-0.085	*-1.43*		-0.095	*-1.57*		-0.102	*-1.67*	*
Ln(Size)	0.009	*1.27*		0.005	*0.75*		0.002	*0.33*	
ST Compensation Incentive	0.022	*0.14*		0.069	*0.44*		0.097	*0.61*	
NBER Down Economy in FD month	-0.090	*-2.15*	**	-0.098	*-2.29*	**	-0.094	*-2.18*	**
Pre_PSLRA	-0.001	*-0.02*		-0.002	*-0.04*		0.004	*0.10*	
Post_SOX	0.046	*1.16*		0.050	*1.24*		0.064	*1.57*	
Industry Fixed Effects	Yes			Yes			Yes		
Adj R-square	0.100			0.069			0.053		
Number of Firms	524			524			524		

Notes: The dependent variable is the firm's monthly abnormal returns (ARs) obtained from the Fama and French three-factor model in the Fraud Disclosure month, FD(0). Models 1, 2, and 3 examine pre-fraud commission abnormal returns (alphas) over five-, three-, and one-year periods prior to the fraud commission dates respectively. Other independent variables are: Insider trading flag indicates if insider trading was involved in the misconduct; Insider Ownership %; Combined block + Institution ownership, which is the combined percentage of ownership held by institutional investors and block owners; Restatement flag indicates if the case involved a restatement of the financial statements; Fraction of independent directors is the percentage of the board of directors that are independent; Combined Ownership*BOT Independence is the combined block/institution ownership times the percentage of the board of directors that are independent, an interaction variable of two corporate governance variables; ln(Size), is the natural logarithm of the capitalization of the firm at the fraud commission date; ST Compensation Incentive is the fraction of total executive compensation paid by way of salary, bonuses, and other income as a fraction of total executive compensation. NBER down economy in FD month is an indicator variable with a value of 1 if the FD month is categorized as a month when the economy is in decline in the NBER series. Pre-PSLRA is an indicator variable that has a value of 1 if the fraud disclosure date was at or before 1995; and SOX is an indicator variable with a value of 1 if the fraud disclosure was at or post 2002. The symbols *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively, for a two-tailed test.

Figure

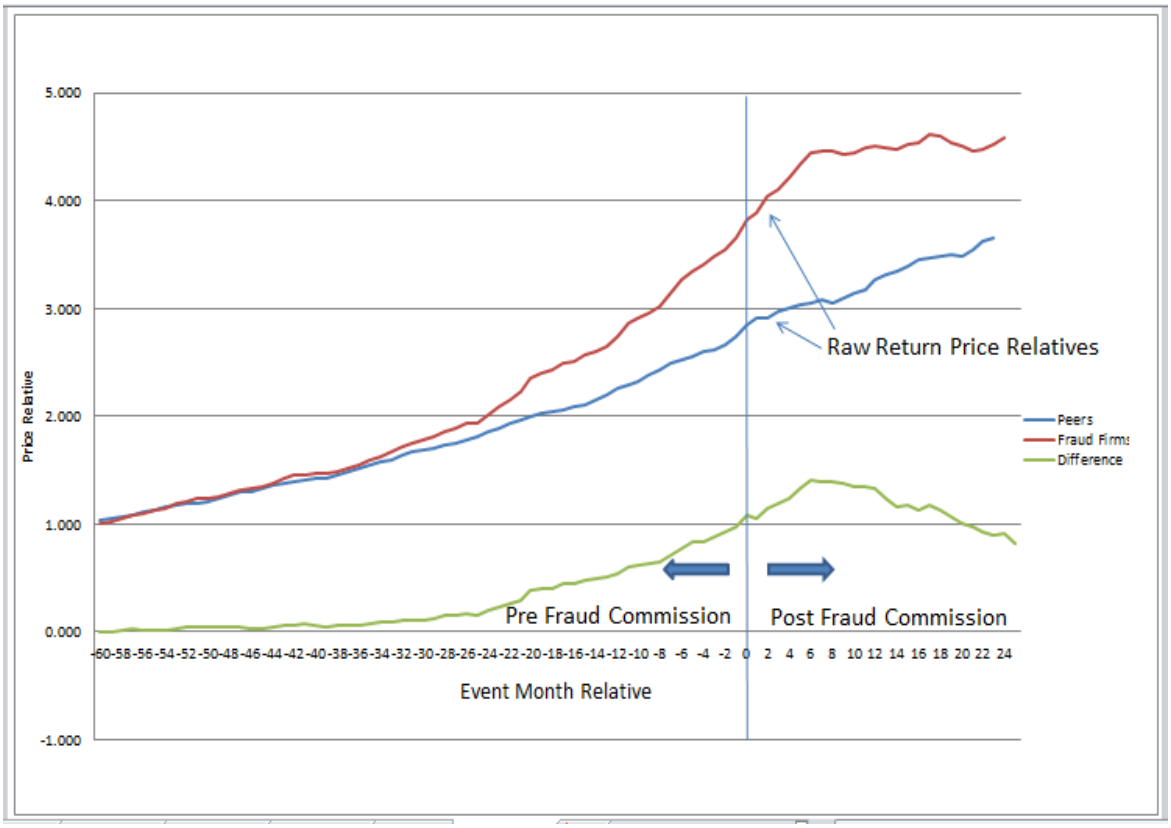

Figure 1: Raw returns before and after the fraud commission month