The Stock Market Reaction to Allegations of Fraud and Earnings Manipulation

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Recent revelations in the media about financial reporting and accounting abuses at Enron, Qwest, WorldCom, Global Crossing, Tyco, and other companies have highlighted the problems caused by earnings management. Earnings management has been defined as a violation of generally accepted accounting principles (GAAP) by a company's managers to favorably represent a company's financial performance (Beneish 1999a). However, we have expanded the definition of earnings management from just GAAP to intentional distortions of accounting information as defined by the former Securities and Exchange Commission (SEC) Chairman, Arthur Levitt and the SEC itself (1998): "earnings management is the practice of distorting the true financial performance of the company."

Researchers studying the effect of earnings management on stock returns use firms cited by the SEC in its Accounting and Auditing Enforcement Releases (AAERs). In an AAER, the SEC may take an enforcement action against a firm or individual that it identifies as having violated the financial reporting requirements of the Securities Exchange Act of 1934. In this study, we extend earlier research into the stock market reaction of firms cited by the SEC in its AAERs in two major ways. First, our sample period is longer and covers a more recent time period (the 20-year period stretching from 1985 to 2004) and contains many high-tech companies that were not included in earlier studies. Also, the market's reaction to allegations of earnings manipulation during the period of the largest frauds in history, Enron, WorldCom, etc, has not yet been investigated. Second, we examine cross-sectional differences in financial factors and non-financial factors of corporate governance for these sample companies. Also,

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we test for bias in our results which might be caused by defects in the sample using daily returns, serial correlation in the abnormal returns, and confounding events occurring during the event window.

Literature Review

Most of the published research on earnings manipulation attempts to develop models to predict which firms are manipulating their earnings based on financial statement information (Beneish (1999b), Dopuch, Holthausen and Leftwich (1987), and Dechow, Sloan, and Sweeney (1996)). There are few published studies of the stock market reaction to earnings manipulation, and all are based on sample periods that end before the "dot-com" era and the major frauds of the late 1990s and early 2000s. These studies have not run cross-sectional regressions on the CARs to examine corporate governance variables, have not eliminated confounding events and have not conducted alternative statistical tests to check for bias in the sample.

In an early study, Feroz, Park and Pastena (1991) investigated the market reaction to allegations of earnings manipulation using a sample of 34 companies. They find a negative 10% average for abnormal returns on the day of the announcement and a negative 12.9% average for cumulative abnormal returns (CARs) over the two day window (-1, 0). They do not discuss confounding events but try to explain the cross-sectional variation in CARs using the income effect of the disputed accounting, the type of account involved, and whether fraud was involved in the allegation.

Dechow, Sloan, and Sweeney (1996) examine all AAERs from 1982 to 1992 to study earnings management hypotheses, weaknesses in firms' internal governance structures, and capital market consequences. Their final sample of 92 earnings manipulator firms were matched by three-digit SIC code, year prior to manipulation, and total assets to 92 non-manipulator firms. The authors conduct several different tests, including regressions to explain the motivation for earnings manipulation and a standard event study of the CARs around the

announcement date of manipulation. They find that an important motivation for earnings management is the desire to attract external financing at a low cost and those firms manipulating earnings experience significant increases in their costs of capital when the manipulations are made public. They do not discuss potential confounding events, nor use alternative statistical tests of the significance of their event study results, nor run a cross-sectional regression of the CARs.

Beneish (1999b) investigates the stock market reaction to the release of AAERs on a sample of 64 firms covering the period 1987-1992 and finds a mean wealth loss of a negative 25.1% over a ten day period beginning five days before the announcement of the release and ending five days after the announcement. He eliminates confounding events, but does not discuss alternative statistical tests of the significance of the abnormal returns, nor does he conduct a cross-sectional regression analysis of the CARs. Also, Larcker *et al* (2007) found some ability of corporate governance factors to explain future excess stock returns but only analyzed one year of data, 2002, which had the confounding event of the Sarbanes-Oxley Act.

We use the standard event study method to analyze the stock market's reaction to the release of the AAERs from 1985-2005. The longest event window runs from 30 days before the announcement date to 60 days after the announcement, and the estimation window is 255 days long. The Eventus® market research software, version 8.0 from Cowan Research LC, is used to compute daily abnormal returns, cumulative abnormal returns and the statistical tests reported in the following tables.

Sample

We include all firms that have been cited by the SEC in AAERs from 1984-2005 that have two years of financial statement data from Compustat's Research Insight database and that have at least 60 daily stock returns on the Thomson Datastream database. The estimation period begins 301 trading days before the public announcement that the firm is manipulating

earnings or doing fraud and ends 45 trading days after the announcement. Abnormal returns are examined over different event windows: (-1, +1), (-5, +5), (-10, +10), and (+2, +30). The final sample consists of 88 firms with a subsample of 28 companies (32%) charged with violating anti-fraud statutes and the remaining subsample of 60 companies (68%) charged with earnings management. Of these 60 firms charged with earnings manipulation, 27 were cited by the SEC for improper revenue recognition, and 21 were cited for improperly recording expenses and/or revenues. The remaining 12 firms were cited for a wide variety of issues such as excluded liabilities, "kiting" funds, fraudulent loans, round-trip energy trades, etc., but none of these other categories have more than four citations each. The 88 firms come from 27 different two-digit SIC categories, with 12 companies from SIC 73 (Business Services—primarily software), 11 from SIC 35 (Computer Equipment), 10 from SIC 10 (Mining), and none of the other categories have more than 7 companies. In the year of the AAER, 36 companies were listed on the New York Stock Exchange, 6 on the American Stock Exchange, 25 were traded Over the Counter, and 21 were listed on Nasdaq. Because our sample of AAERs has a significant percentage (32%) of firms charged with violations of anti-fraud statutes, we control for these different types of allegations in both the estimation of the CARs as well as the cross-sectional tests reported below. Also, Larcker *et al* (2007) found some ability of corporate governance factors to explain future excess stock returns but only analyzed one year of data, 2002, which had the confounding event of the Sarbanes-Oxley Act.

In Table 1, descriptive data are presented for the final sample of 88 firms. They were classified into ten different economic sectors, using the Global Industrial Classification scheme in the Compustat database. Nine of the ten sectors showed that the sample firms were very large companies with total assets and sales in excess of the third quartile numbers. The only exception was the industrials economic sector which had small companies below median total

assets and sales. These results are consistent with the SEC's focus on investigating larger companies with its limited budget in recent years.

In six of the ten economic sectors, the sample firms had poor free cash flows, poor sales growth, poor net profit margins and poor returns on assets, all lower than first quartile numbers. Accordingly, due to these profitability and operating cash flow problems, sample firms in these six sectors had large debt to capital ratios in excess of the median numbers, as did sample firms in the other four sectors. These profiles are consistent with prior research that showed large companies with operating and financing problems were the typical firms investigated by the SEC for earnings manipulation and fraud problems (Grove, Basilico and Cook 2005) (See Table 1).

The "event" or "day 0" in this study is an announcement in the financial press that a firm is alleged to be manipulating its earnings or committing fraud. Each AAER issued by the SEC contains both an allegation of earning manipulation or fraud, and a period of time over which the manipulation or fraud supposedly occurred. For each firm in our sample, we searched Lexis/Nexis over a period of time starting 2 years before the beginning date indicated in the AAER and ending 1 year after the ending date in the AAER. Search words included key words related to the specific allegation as well as the words "accounting" and "SEC."

We checked for other, "confounding events" over a period from 30 days before the announcement to 60 days afterward. These other events may also have an impact on stock returns but are not related to the SEC allegation and, thus, must be eliminated from the sample. Table 2 shows the list of items we looked for and the number of times they occurred for the entire sample during the 30-day period before day 0, on day 0, and the 60-day period after day 0. The most common event before day 0 was a dividend/earnings announcement, occurring 95 times across all companies, followed by debt or equity related announcements that occurred 42 times. Litigation (unrelated to the alleged earnings manipulation or fraud) and the change of a

key executive (also unrelated to the allegation) occurred 19 and 15 times, respectively. Also, announcements involving merger activity occurred 13 times. We dropped firms having an event listed in Table 2 for a two-day period beginning on the day of the announcement of the confounding event and ending on day after the announcement. Confounding events occurring on the day of the announcement of the SEC allegation or afterward were kept in the sample because they were a consequence of the allegation of earnings manipulation or fraud. The most common events after "day 0" were litigation related to the allegation (120 times), debt or equity events (31 times), dividend/earnings announcements (23 times), and restatements of financial statements (22 times) (See Table 2).

The Stock Market Reaction to Allegations of Fraud and Earnings Manipulation[1]

The size of the change in stock returns on the announcement date of the allegation has not been reported in the literature using a consistent event window length. Feroz, Park and Pastena (1991) report an announcement-day average abnormal return of a negative 8.20% and Dechow, Sloan and Sweeney (1996) find an average abnormal return of a negative 9% on the announcement date. On the other hand, Beneish (1999b) reports an average wealth loss over the 11 day event window (-5, +5), as a negative 25% for his sample of 74 companies covering the period 1987-1993.

Table 3 shows that firms in the present study also have negative shareholder returns which are statistically significant in response to the announcement of an accounting irregularity. On the day prior to the announcement, the average abnormal returns from the market model change

[1] Our sample has several characteristics that can bias hypothesis testing. For example, standardized daily abnormal returns exhibit skewness and kurtosis. Small stocks in the sample have more zero returns than larger stocks, and some of the small stocks are thinly traded, leading to non-synchronous trading. Finally, it is possible that the announcement of alleged earnings manipulation leads to a greater variance in returns during the event period than in the estimation period. We tested for each of these problems using the Eventus® software package, but since the results were not affected by any of these issues, we did not report them in the paper. The results of these tests are available from the authors on request.

by a negative 2.80% (p-value = 1%)[2]. On the day of the announcement firms experience a further change of a negative 7.45% (p-value = 1%), which is similar to the average abnormal returns reported by Feroz, Park, and Pastena (1991), and Dechow, Sloan and Sweeney (1996).

On the day after the announcement, the decline in average abnormal returns in the present study is an additional negative 3.87% (p-value = 1%). For the three day event window, (-1, +1), the cumulative average abnormal return (CAR) is a negative 14.07% (p-value = 1%). The CAR for the 11 day window (-5, +5) of a negative 19.20% is very close to that reported by Beneish (1996b) for the same event window. Comparing the results for (-1, +1) and (-5, +5), it is clear that most of the drop over the 11-day window actually occurs within three day period surrounding the announcement. Thus, markets react quickly and strongly to such an announcement. Taken together, the evidence from earlier studies and the present one suggest that CARs associated with announcements of earnings manipulation or fraud are very stable over time and not dependent on the particular companies sampled (See Table 3).

As reported in Table 3, stock returns continue to fall after the announcement, and by day +30 the CAR is a negative 29.45%. Whether this additional drop in value can be exploited by traders is questionable because the sample was first screened on citations in the AAERs, which are issued on average about two years after the announcement in the press of possible earnings manipulation. There is evidence in the literature that the SEC tends to focus on larger companies with poor return performance (Beneish, 1999b).

As previously noted, our sample contains 28 companies charged with committing fraud. Because fraud charges are more serious than charges of earnings manipulation (60 companies here), we would expect the market to react differently for firms charged with fraud than those firms charged with earnings manipulation. Table 3 and Figure 1 report the CARs for each

[2] In all of our significance tests we use a nonparametric test called the Generalized Sign Test. Cowan (1992) uses simulation studies to show that the Generalized Sign Test is better specified than other tests such as the T-test, Patell's test or Corrado's Rank Test, for data such as ours with a large number of zero returns, thinly traded and

subsample over the event window (-30, +30). As shown in Figure 1, the market reacts quite differently for the two groups. Manipulators' CARs turn slightly negative about a week before the announcement, but do not drop too much until day -2 and after. Investors do not seem to be reacting to charges of earnings manipulation until just before the allegations are made public. In contrast, the CARs for firms charged with fraud are negative from day -21 onward. Thus, investors are reacting much earlier and much more negatively to this latter group of firms. Most of the loss in value occurs over the period (-14,-2), and may indicate that some investors learn of the problems in the company before the announcement. However, a continuing drop in market prices of these companies occurred both before and after the announcement date. Concerning the initial price declines, there may be leakage of information and insider trading happening. However, such insider trading (or strong form of the efficient markets hypothesis) has traditionally been almost impossible to investigate empirically, i.e., who will admit that they did illegal insider trading? (See Figure 1).

Table 4 summarizes CARs for the overall sample as well as the fraud and manipulator subsamples over different event windows, (-1, +1), (-5, +5), (-10, +10) and (+2, +30). Reflecting the Figure 1 results, the CARs for all the event windows are larger for the fraud group. Indeed the CAR for the fraud group over the first event window (-1, +1) is nearly twice as large as the CAR for the manipulator group over the same period, a negative 16.64% versus a negative 8.51%, respectively. Thus, as one might expect, the market reacts much more negatively to allegations of fraud than to those of earnings manipulation (See Table 4).

Finally, as is apparent from the data in Table 3 and also shown rather dramatically in Figure 1, returns continue to drift downward well after the announcement date[3]. For the overall sample, the CAR over the event window (+2, +30) is a negative 7.60% (p-value =0.001).

Nasdaq stocks. Although not reported in the paper, we also looked at the other tests such as a standard T-test, Patell's test and Corrado's Rank Test and the results were virtually the same.

However, most of this drift is coming from the fraud group, with a CAR over this period of a negative 12.09% (p-value = 0.001), versus the manipulator group, with a CAR of only a negative 5.48% (p-value = 0.10). Thus, the fraud group experiences an additional post-announcement drift over twice that of the group of manipulators. The reason for this continued downward drift may be surmised from the events in Table 2 by recalling that we only eliminated confounding events from the primary event window (-10, +10). As shown in Table 2, there are many significant events related to the allegations by the SEC that occur after the announcement date, primarily investor lawsuits, financial restatements, and replacing management, that cause stock prices to continue falling. Not surprisingly, the fraud companies have more of these events than do the earnings manipulator companies.

Cross-sectional Tests.

There is much literature exploring the theoretical foundations of earnings manipulation as summarized by Lambert (2001). Many of these papers use agency cost theory and rational expectations theory to examine the incentives that motivate managers to report misleading information to financial markets. These theories have both implications for whether a given firm will manipulate earnings, as well as for differences among firms in the types and amounts of their manipulations. In this section we use regression analysis to test several of these cross-sectional implications for explaining differences in the size of the CARs in our sample over three different event windows, (-1, +1), (-5, +5) and (-10, +10).

The theories propounded by Guttman, Kadan, and Kandel (2004), Gao and Shrieves (2002), Ke (2003), and Crocker and Slemrod (2007) all argue that the amount of manipulation could vary cross-sectionally in a sample of manipulators. Stock price responds to changes in publicly available information and earnings announcements are a primary source of information.

[3] There is also a well-documented post earnings-announcement drift (PEAD) associated with earnings announcements. This phenomenon was first noted by Ball and Brown (1968) and the reasons for it are still not fully understood. In contrast, the post announcement drift noted above seems to be tied to new information arrival.

Guttman *et al* argue that an AAER is a signal to the market that a firm may be manipulating earnings or engaged in fraud and the stock price of the firm should fall because future cash flow forecasts will be reduced. Managers have leeway in reporting earnings and may have incentives and ability to manipulate earnings. Managers with a greater percentage of their compensation in the form of stock will have a greater incentive to manipulate earnings because they receive a greater short-run benefit than do managers whose compensation is just from salaries and long-term compensation goals. Furthermore, the greater the extent of the manipulation, the greater their payoff from stock-based compensation will be. However, the greater the extent of the manipulation or fraud, the greater the drop in stock price will be when allegations of earnings manipulation are publicized. Thus, this theory predicts that in a cross-sectional regression on CARs, the coefficient on a variable measuring the percentage of compensation coming from stock options will have a positive sign.

Gao and Shreves (2002) make a similar argument, asserting that the intensity (amount) of manipulation (as measured by the absolute value of discretionary accruals) increases with larger amounts of options and bonuses and decreases with larger amounts of salaries. They observe that discretion over accounting accruals gives managers a potentially valuable timing option that will lead to strategies for maximizing their compensation. In their model, the amounts of stock options and bonuses, and the incentive intensity of stock options, are positively related to earnings management intensity, whereas salaries are negatively related. The compensation contract design influences the amount of earnings management and appears to be largely predictable on a presumption that some managers behave opportunistically. Thus, this theory predicts that in a cross-sectional regression on CARs, the coefficient on a variable measuring discretionary accruals will have a positive sign.

Goldman and Slezak (2006), and Guttman, Kadan and Kandel (2004) argue that stock based compensation induces managers to exert effort but also gives them incentives to manipulate earnings. In contrast, Crocker and Slemrod (2007) argue that the incentive to manipulate earnings comes through bonus plans, not from a manager's equity ownership. They suggest that the amount of earnings manipulation falls as ownership percentage increases. Thus, there is a contradiction between these two sets of theories and one testable implication for our sample is that in a cross-sectional regression on CARs, Guttman *et al* and Goldman and Slezak predict a positive coefficient on the variable measuring the percentage of compensation coming from stock based compensation, whereas Crocker and Slemrod predict a negative coefficient.

Of course, legal enforcement (internal and external) lowers the amount of manipulation that managers could otherwise engage in. Guttman, Kadan, and Kandel (2004) argue that stronger internal controls (i.e., stronger legal enforcement) reduce the extent of the manipulation. Thus, firms with stronger internal controls should engage in smaller amounts of manipulation and therefore have smaller CARs for all event windows. In our sample, CARs should be larger for firms with weak corporate governance because managers are able to engage in a larger amount of earnings manipulation. Consequently, another testable hypothesis of this theory is that firms with stronger corporate structures will have smaller CARs than firms with weaker corporate governance. Since this theory does not specify measures of corporate governance, we have used various definitions from the earnings management literature in our following tests.

Also, the greater the sales growth rate, the higher the value of the stock based compensation will be since firms with higher sales growth rates tend to have higher price/earnings (P/E) ratios. Thus, the higher the sales growth rate, the greater the P/E ratio will be and the higher the payoff to manipulating earnings per Guttman, Kadan and Kandel (2004). Consequently,

this theory predicts that the coefficient on a sales growth rate variable in a cross-sectional regression on CARs will have a positive coefficient.

Finally, if we consider allegations of fraud by the SEC to represent extreme forms of earnings manipulation, we would expect that the stock market to react more unfavorably to firms charged with fraud. Thus, in a cross-sectional regression on the CARs over an event window, the coefficient on this variable should be positive.

Our cross-sectional tests use CARs over three event windows consisting of days (-1,+1), (-5,+5), and (-10,+10) as the dependent variables and the following independent variables: an accounting accruals measure, various measures of the strength of corporate governance, the fraction of stock options in the total compensation of the top five executives, and the sales growth rate. Forty-two of the original 88 companies in the event study have compensation and governance data on the Computstat Execucomp database and are included in the cross-sectional regressions. Ten of these companies were alleged by the SEC to have violated anti-fraud statutes as opposed to earnings management. Thus, we control for fraud allegation in the cross-sectional tests by using a dummy variable. These independent variables in the regression are defined as follows.

Accounting Accrual Measure (ACCRUAL)

Sloan (1996) has shown that large positive accruals are an indication of earnings manipulation, but investors may be unaware of this and mistakenly believe that profitability is high. We adopt Sloan's measure of accruals,

$$\begin{aligned} \text{Accruals} &= \Delta CA - \Delta CL - \text{Depr'n} \\ &= \left[(\Delta AR + INV + \Delta OCA) - (\Delta AP + \Delta OCL) - \text{Depr'n}\right] / TA \end{aligned} \qquad (1)$$

where ΔCA is the change in noncash current assets, (the change in current assets minus the change in cash), ΔCL is the change in current liabilities excluding short-term debt and taxes

payable, and Depr'n is depreciation and amortization expense. These factors are further defined as: ΔAR, the change in accounts receivable; ΔINV, the change in inventories; ΔOCA,the change in other current assets; ΔAP, the change in accounts payable; ΔOCL, the change in other current liabilities; and TA, total assets. Deferred income taxes are not included. All variables are measured in the last fiscal year before the announcement date. We hypothesize that firms with large accruals will also display large negative CARs in the cross-section, similar to Sloan's results. Thus, we hypothesize a negative sign for the accrual measure.

Firm Governance Structure

Dechow, Sloan and Sweeney (1996) use logit regressions to show that firms with weak corporate governance structures are more likely to manipulate earnings than firms with stronger governance structures. But as we noted above, economic theories of earnings manipulation also suggest that there are cross-sectional differences in CARs that are related to the strength of internal controls. Following Dechow, Sloan and Sweeney, we measure the strength of corporate governance, using several different variables: whether the current CEO is the company founder, the percentage of Board stock holdings held by independent members, and the percentage of the board of directors who are company insiders.

The CEO as founder (CEOFNDR).

The first corporate governance variable (CEOFNDR) is a dummy variable equal to 1 if the current CEO is also the founder of the company. Dechow, Sloan and Sweeney (1996) argue that there is lower oversight of management if the company founder is also the current CEO, implying weaker corporate governance. On the other hand, we argue that a company founder is more likely to take a long-term view of the company's prospects and is less likely to engage in short-term opportunistic behavior than professional managers. This argument is similar to research results found by Fund (2008) in a CEO-founder study of succession in companies.

Thus, having the founder as the current CEO is a sign of strong corporate governance, implying a lower probability that the SEC allegation is true for companies with the CEO as the founder. Thus, the sign on this variable is positive (CEO =1 implies a CAR near zero, and CEO =0 implies a more negative CAR).

Percentage of board holdings held by independent board members (INDBDHLDG).

The second internal governance variable is the percentage of total board stock holdings of company stock held by independent directors. The sign on this variable is ambiguous. On the one hand, large stock holdings by independent board members and mutual funds suggest that their interests should be aligned with shareholders, and thus, they would be less likely to go along with questionable decisions by management. On the other hand, there is evidence that some independent board members and mutual funds actually have conflicts of interest. For example, some large shareholders are financial institutions, such as the Fidelity Funds or T Rowe Price, who may also do business with the company (manage pension and 401(k) plans) and thus may go along with management in order to protect these other arrangements. The Larcker *et al* (2007) study found no significance of block holdings on future stock returns.

Percentage of insiders on the board of directors (PERINSDRBD).

Another measure of internal governance is the percentage of insiders on the board of directors. The greater this percentage, the weaker the internal governance structure, and the more likely the board will vote with management---thus, the greater the percentage of insiders on the Board, the greater the likelihood of earnings manipulation. We hypothesize a negative sign for this variable---high insider percentage implies more negative CARs, similar to the results of the Klein (2002) and the Larcker *et al* (2007) studies of corporate governance.

Percentage of total compensation in the form of stock options (SALPERC).

The greater the percentage of total compensation managers have in the form of stock options, the more likely they are to try to manipulate earnings in order to maintain the value of their

stock options. Data for this variable comes from the Execucomp database of executive compensation. For our sample, stock options were not consistently reported for all companies so we use the percentage of salary plus bonus to total compensation reported in Execucomp. Measured in this manner, lower values of SALPERC imply a larger fraction of total compensation coming in the form of stock options and long-term incentive payment plans. Because very few of our sample companies have long-term incentive plans, SALPERC should be a good proxy for stock options. We hypothesize that this variable has a positive sign---low percentages imply more options, which implies more negative CARs, similar to the Larcker *et al* (2007) study.

Growth in sales. (SGI).

Using a probit model, Beneish (1999a) shows that high growth companies are more likely to manipulate earnings than are low growth firms. As noted above, the economic theories of earnings manipulation also suggest a cross-sectional difference among firms in the CARs that is related to the sales growth rate. Over half of our sample companies were cited by the SEC for manipulating revenues in some manner, possibly in response to Wall Street paying more for growth through higher PE ratios. Thus, we hypothesize that firms with high sales growth rates are more likely to manipulate their earnings. Thus, the sign on this variable is negative---high sales growth rates imply more negative CARs.

Type of SEC Allegation (FRAUD)

Our sample contains firms charged with violating anti-fraud statues as well as those charged with the less serious charge of earnings manipulation. As previously noted, 10 of the firms in this cross-sectional study (24%) were charged with fraud by the SEC. Because a fraud allegation is likely to have a larger negative impact on future firm cash flows than a charge of earnings manipulation, fraud firms should have larger negative CARs than the firms just charged with earnings manipulation. We define a dummy variable, FRAUD, equal to 1 for

fraud firms and 0 for earnings manipulators and, thus, hypothesize that the coefficient of the FRAUD variable is positive.

Table 5 reports the regression results of the cross-sectional tests on the CARs over three different event windows, (-1,+1) , (-5,+5) and (-10,+10), with reasonable adjusted R-squares of 33%, 44% and 44%, respectively. For the (-1,+1) window, SALPERC and SGI have the correct signs and are significant at the 5% and 1% levels, respectively. The accrual variable is not significant nor are the other variables. One explanation for the accrual result is that firms with large positive accruals also tend to be high growth firms (the correlation between these two variables in our sample is 0.35) and the ACCRUAL variable proxies for sales growth.

For the (-5,+5) window, SALPERC, SGI, are again significant at the 5% and 1% levels, respectively, with the correct signs. INDBDHLDG and PERINSDRBD enter the equation and are both weakly significant (p-values of 0.1162 and 0.0977, respectively). PERINSDRBD has the correct sign and INDBDHLDG is negative, indicating that independent board members are acting more like insiders. CEOFNDR is weakly significant (p-value of 0.111) with the correct sign. The ACCRUAL and FRAUD variables are not significant. For the (-10,+10) window, SGI is again significant (p-value of 0.022) with the correct sign but none of the other variables are significant.

In summary, the accrual variable is not significant for any of the event windows and this result is contrary to what one would expect from the Crocker and Slemrod (2007) theory. However, including sales growth in the regression may be picking up some of the accrual variable effects since this sales growth variable has the predicted sign and is significant at the 1% or 2% level for all event windows. The stock option variable has the correct sign for all event windows and is significant at the 5% level for both the (-1, +1) and (-5, +5) day windows. The results for the corporate governance variables are weaker. The CEO as founder variable and the board-insider variable have the predicted signs for the event windows but are weakly

significant for only the (-5,+5) window. The sign on the variable measuring the percentage of insider stockholding is negative and only weakly significant for just the (-5, +5) day window. The fraud variable is not significant in any of the event windows (See Table 5).

Limitations of the Research

An initial limitation of this research was that the search for announcements of fraud or earnings manipulations by companies was limited to Lexis/Nexis. This search omitted internet chat rooms and research reports by financial analysts due to feasibility and cost considerations. A second limitation involved a bias as sometimes there are press reports about earnings manipulations that do not lead to the issuance of an AAER by the SEC. In fact, some may be found to be in error as they do not involve any earnings manipulations, such as unfounded rumors spread by short sellers that are picked up by the financial press. The stock market could react to such announcements and rumors in which case there would be an inefficiency of the information signal. This issue was beyond the scope of this research.

Another limitation of this paper was that estimating betas during the study period may be fraught with problems which we have tried to analyze with different model specifications. However, such specifications were helpful but not conclusive. For example, betas may be skewed by both the dot-com bubble and the subsequent burst which represented atypical stock market returns in both directions.

Discussion of Results and Conclusions

In this study we extend the literature on stock market reaction to SEC allegations of fraud and earnings manipulation in several ways: 1) our sample period from 1985-2005 is longer and covers a more recent time period than those of existing studies; 2) our sample contains some of the largest manipulators like Enron and WorldCom; 3) we adjust our sample for confounding events and apply additional statistical tests for possible bias in our results; and 4) we examine cross-sectional differences in financial and non-financial factors of corporate governance. The

average CAR over the (-1,+1) day event window to SEC allegations is a negative 14.07% and is statistically significant at the 1% level. Our results are consistent with those found in earlier studies (Beneish (1999b), Dechow, Sloan and Sweeney (1996), and Feroz, Park and Pastena (1991)). This pattern of market reaction is observed regardless of the return generating model, and after adjusting the statistical tests for problems associated with using a sample of daily stock returns and small Nasdaq stocks.

Running regressions for cross-sectional analyses of the CARs, we find: (1) high growth companies have more negative CARs, (2) firms paying a larger percentage of total executive compensation in the form of stock options have more negative CARs, (3) firms with more insiders on the board have more negative CARs, (4) firms with the company founder serving as the CEO have less negative CARs and (5) the size of a firm's accounting accruals has no effect on the magnitude of the CAR. These results are consistent with the following arguments: 1) high growth firms and firms with weaker governance structures are more likely to manipulate earnings, 2) managers who have a larger percentage of their compensation in the form of stock option plans are more likely to take a short-term view and manipulate earnings to maintain the value of their options packages, and 3) founders serving as CEOs are more likely to take a longer view of the company as their personal wealth is tied up in the firm they created, and thus, not take short-term, exploitative decisions. Finally, we find no evidence that accounting accruals are associated with the CARs, contrary to the current literature that suggests high accounting accruals are associated with firms that manipulate their earnings. However, firms with high accounting accruals also tend to be high growth firms so one explanation for our result is that accruals and growth are measuring the same factor.

These cross-sectional regressions may be examined by forensic accountants and auditors in searching for red flags relating to earnings manipulation and financial statement fraud. This search may be expanded to include both financial factors, such as an accounting accrual

measure and the growth in sales, and non-financial factors of corporate governance, such as the CEO as founder, the percentage of board holdings held by independent board members, the percentage of insiders on the board of directors, and the percentage of total compensation in the form of stock options. These corporate governance factors may be obtained from firms' proxy statements or various subscription databases, such as Execucomp, Equilar, or Spectrum, to facilitate such searches.

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Table 1: Descriptive Data for Sample Firms

		TA**		Sales**		FCF**		Sales Growth Rat		Net Profit Margin		ROA		Debt/Capital	
No. of Sample Cos in Sector*		Sample Cos	Sector	Sample Cos	Sector	Sample Cos	Sector	Sample Cos	Sector	Sample Cos	Sector	Sample Cos	Sector	Sample Cos	Sector
	1st Quartile		$ 12.6		$ 5.2		(19.4)		-29.0%		-7.5%		-8.5%		0.0%
Energy	Median	$ 12,844.0	200.6	$ 12,498.0	94.4	$ 579.0	0.9	-3.4%	-8.0%	-2.8%	3.3%	-1.8%	2.4%	24.6%	25.4%
4															
	3rd Quartile		1,561.7		698.1		4.4		8.0%		14.0%		7.5%		45.7%
	1st Quartile		16.9		0.9		(6.3)		-59.0%		-3.5%		-13.6%		0.0%
Materials	Median	9,164.0	200.8	5,457.0	320.0	910.0	(0.2)	-46.1%	-26.0%	5.0%	3.3%	4.8%	1.7%	17.0%	19.8%
1															
	3rd Quartile		2,161.0		1,911.0		54.9		4.7%		8.6%		9.3%		44.3%
	1st Quartile		18.1		20.2		(4.2)		-11.2%		-3.6%		-5.8%		1.7%
Industrials	Median	57.4	110.8	88.3	138.2	(0.8)	(0.0)	-5.6%	0.0%	1.0%	2.1%	1.9%	3.7%	31.6%	24.7%
14															
	3rd Quartile		520.5		614.9		8.0		11.1%		5.4%		9.5%		49.6%
	1st Quartile		25.9		31.7		(7.3)		0.0%		-5.4%		-7.0%		0.8%
Consumer Discretionary	Median	703.2	138.1	860.5	168.0	(3.6)	(0.3)	3.0%	1.1%	0.9%	1.8%	0.8%	3.3%	33.8%	26.2%
13															
	3rd Quartile		538.3		596.0		8.7		13.0%		5.4%		10.0%		54.7%
	1st Quartile		27.5		30.4		(3.5)		-7.0%		-1.2%		-1.9%		7.5%
Consumer Staples	Median	2,512.8	226.3	5,289.1	36.9	20.0	0.3	5.0%	2.0%	1.5%	2.0%	6.8%	4.6%	93.5%	31.8%
4															
	3rd Quartile		1,355.6		354.9		21.5		11.0%		5.4%		11.3%		55.9%

Table 1 (cont'd): Descriptive Data for Sample Firms

	1st Quartile		9.2		2.5		(8.5)		0.0%		-126.9%		-46.6%		0.0%
Health Care	Median	325.7	35.7	290.3	18.3	(1.3)	(1.4)	0.0%	10.0%	2.8%	-5.1%	3.9%	-8.1%	22.0%	3.6%
10															
	3rd Quartile		165.1		120.8		1.9		35.0%		5.6%		7.2%		26.7%
	1st Quartile		218.3		22.6		(1.0)		0.0%		4.9%		0.7%		15.1%
Financials	Median	52,549.1	679.0	6,311.7	74.1	1,852.0	6.2	7.0%	3.0%	9.2%	11.4%	1.0%	1.4%	51.2%	50.4%
3															
	3rd Quartile		2,715.0		377.4		66.3		17.0%		17.1%		2.4%		91.6%
	1st Quartile		9.7		9.2		(5.7)		-9.0%		-38.2%		-32.1%		0.0%
Information Technology	Median	388.6	40.7	382.4	37.0	(0.2)	(0.6)	7.0%	7.0%	3.1%	-1.3%	5.8%	-1.9%	5.6%	1.0%
25															
	3rd Quartile		150.1		137.4		2.8		26.0%		6.3%		9.7%		17.2%
	1st Quartile		76.2		47.3		(113.5)		-16.0%		-74.41		-41.8%		1.2%
Telecommuncations Services	Median	25,066.0	828.4	12,675.0	332.6	(177.5)	(3.0)	-6.0%	3.0%	6.8%	-9.49	5.8%	-5.7%	44.2%	36.6%
3															
	3rd Quartile		4,951.6		2,151.0		22.4		24.0%		7.06		5.3%		62.5%
	1st Quartile		823.0		414.2		(69.0)		-25.0%		3.82		3.0%		42.2%
Utilities	Median	18,833.1	2,561.1	15,986.0	1,076.6	(6,111.0)	(4.2)	-68.3%	-7.0%	2.4%	7.22	3.7%	5.1%	48.9%	49.1%
5															
	3rd Quartile		6,733.2		2,991.7		35.9		2.0%		1038.0%		6.8%		57.1%

Notes to Table 1:	
* Six firms could not be classified by Economic Sector. We used Standard and Poor's definition of economic sector in the table. These economic sectors are defined more broadly than the Standard Industrial Code classification system, and in our study reduced the number of firm groupings from 26 to 10. The GIC sectors are defined below:	
Energy	Oil and Gas Drilling, Exploration, Production, Refining, Marketing, Storage, and Transportation.
Materials	Chemicals, Construction Material, Containers & Packaging, Metals & Mining, Paper & Forest Products.
Industrials	Aerospace & Defense, Building Products, Construction & Engineering, Electrical Equipment, Machinery, Trading Companies & Distributors, Comerical Services & Supplies, Air Freight & Logistics, Airlines, Road & Rail.
Consumer Discretionary	Automobiles & componets, Consumer Durables & Apparel, Conseumer Sevices, Meda, and Retailing.
Consumer Staples	Food & Staples, Retailing, Food, Beverage & Tobacco, Household & Personal Products.
Health Care	Health Care equipment & Services, Pharmaceuticals, Biotechnology & Life Science.
Financials	Banks, Diversified Financials,Real Estate Investment Trusts.
Information Technology	Software Services, Techology Hardwae & Equipment, Semiconductors & Semiconductor Equipment.
Telecommuncations Services	Alternative Carriers, Integrated Telecommunications Services, Wieless Telecomunications Services.
Utilities	Electric, Gas, Multi-Utilities, Water utilities, Independent power Producers & Energy Traders.
** All amounts in millions of dollars	

Table 2: Frequency Count of Confounding Events before and after Day 0.
Count is the total number of events for all firms

	Frequency		
Confounding event	Day (-30,-1)	Day 0	Day (+1, +30)
acquisition activity	13	1	9
analysts revisions	3	0	0
bankruptcies	2	0	5
change accounting firm	2	4	6
co puts self up for sale	0	0	0
debt or equity related event	42	0	31
deferral of financial statements	1	4	4
delisting/relisting	0	0	4
dividend/earnings announcements	95	3	23
forecasted changes in earnings or sales	3	1	1
informal SEC investigation	1	0	1
insider trading	2	0	1
joint venture/alliances	4	0	1
litigation	19	5	120
major executive change	15	6	21
postpone annual meeting	0	0	0
reorganization	1	0	1
restatements	3	3	22
restructuring/divestiture	7	0	10
short sellers	0	0	0
trading suspension/restart	2	1	6

Table 3 : Abnormal Returns using the Market Model as the Return Generating Model

		Overall Sample				Fraud Companies				Manipulators		
				Corrado				Corrado				Corrado
		Overall	Positive:	Rank Test			Positive:	Rank Test		Manipulator	Positive:	Rank Test
Day	N	Sample CAR	Negative	Z	N	Fraud CAR	Negative	Z	N	CAR	Negative	Z
-30	88	-0.41%	42:46:00	-0.31	28	-0.99%	12:16	-1.349$	60	-0.14%	30:30:00	-0.743
-29	88	0.00%	51:37>	1.17	28	-1.29%	15:13	-0.304	60	0.60%	36:24>	1.618$
-28	88	0.16%	44:44:00	0.67	28	-1.53%	14:14	0.062	60	0.95%	30:30:00	0.784
-27	88	0.59%	43:45:00	1.03	28	-0.67%	18:10>	1.815*	60	1.17%	25:35:00	0.19
-26	88	0.31%	38:50:00	-0.89	28	-0.33%	13:15	0.283	60	0.61%	25:35:00	-1.341$
-25	88	0.33%	39:49:00	-0.04	28	-0.10%	13:15	0.652	60	0.54%	26:34:00	-0.384
-24	88	0.46%	46:42:00	0.43	28	0.59%	16:12)	1.544$	60	0.40%	30:30:00	-0.555
-23	88	0.59%	49:39>	0.62	28	1.00%	15:13	1.187	60	0.40%	34:26)	-0.358
-22	88	0.65%	43:45:00	0.46	28	0.36%	13:15	-0.292	60	0.79%	30:30:00	0.727
-21	88	1.41%	49:39>	1.880*	28	0.51%	15:13	0.461	60	1.82%	34:26)	2.100*
-20	88	0.88%	39:49:00	-0.8	28	-0.72%	11:17	-1.386$	60	1.62%	28:32:00	0.376
-19	88	0.56%	47:41)	0.49	28	-1.86%	11:17	-1.263	60	1.68%	36:24>	0.47
-18	88	0.47%	33:55<	-0.48	28	-2.23%	7:21<	-0.189	60	1.73%	26:34:00	-0.131
-17	88	-0.49%	30:58<	-2.4	28	-3.16%	8:20<	-1.715*	60	0.75%	22:38(	-1.693*
-16	88	-0.30%	37:51:00	-0.6	28	-3.95%	10:18	-1.764*	60	1.40%	27:33:00	1.044
-15	88	-0.30%	42:46:00	-0.1	28	-3.48%	14:14	1.947*	60	1.19%	28:32:00	-0.85
-14	88	-1.48%	31:57<	-1.97	28	-6.68%	5:23<<	-3.124***	60	0.94%	26:34:00	-0.172
-13	88	-1.89%	39:49:00	-0.59	28	-6.55%	12:16	-0.096	60	0.28%	27:33:00	-0.916
-12	88	-2.63%	37:51:00	-0.97	28	-8.33%	12:16	-2.134*	60	0.03%	25:35:00	-0.769
-11	88	-2.60%	41:47:00	0.22	28	-8.97%	8:20<	-0.462	60	0.37%	33:27:00	0.562
-10	88	-2.92%	41:47:00	-1.03	28	-9.37%	14:14	-0.652	60	0.10%	27:33:00	-0.424
-9	88	-2.90%	40:48:00	0.61	28	-9.78%	12:16	0.379	60	0.31%	28:32:00	0.035
-8	88	-3.70%	44:44:00	-0.06	28	-10.57%	13:15	-0.778	60	-0.49%	31:29:00	-0.935
-7	88	-4.54%	35:53:00	-0.71	28	-12.89%	6:22<<	-2.413**	60	-0.64%	29:31:00	-1.201
-6	88	-5.82%	33:55<	-2.33	28	-14.76%	7:21<	-1.950*	60	-1.64%	26:34:00	-1.544$
-5	88	-5.51%	46:42:00	0.87	28	-13.55%	18:10>	1.901*	60	-1.75%	28:32:00	-0.138
-4	88	-5.99%	38:50:00	-0.56	28	-13.33%	13:15	0.43	60	-2.56%	25:35:00	-1.689*
-3	88	-6.24%	35:53:00	-0.54	28	-14.77%	9:19(	-1.865*	60	-2.26%	26:34:00	0.014
-2	88	-7.73%	32:56<	-2.32	28	-17.97%	7:21<	-4.330***	60	-2.95%	25:35:00	-1.431$
-1	88	-10.53%	28:60<<	-2.84	28	-19.97%	11:17	-1.979*	60	-6.12%	17:43<<	-4.644***
0	88	-17.97%	23:65<<<	-5.82	28	-24.94%	12:16	-10.395***	60	-14.73%	11:49<<<	-20.126***
1	87	-21.84%	35:52:00	-2.11	28	-26.55%	15:13	-4.500***	59	-19.66%	20:39<	-10.156***
2	87	-22.38%	39:48:00	-0.08	28	-27.98%	11:17	-2.164*	59	-19.78%	28:31:00	-0.36
3	87	-21.57%	41:46:00	-0.35	28	-25.42%	16:12)	1.359$	59	-19.79%	25:34:00	0.132
4	87	-24.20%	35:52:00	-1.22	28	-28.27%	9:19(	-5.682***	59	-22.32%	26:33:00	-5.557***
5	87	-25.09%	31:56<	-2.01	28	-28.75%	8:20<	-0.047	59	-23.41%	23:36	-2.018*
6	87	-23.24%	42:45:00	0.64	28	-25.71%	11:17	5.231***	59	-22.13%	31:28:00	2.172*
7	87	-22.88%	38:49:00	-0.23	28	-27.56%	7:21<	-2.781**	59	-20.71%	31:28:00	2.956**
8	87	-22.22%	47:40)	0.93	28	-26.63%	16:12)	1.478$	59	-20.17%	31:28:00	1.330$
9	87	-18.73%	44:43:00	0.77	28	-26.25%	16:12)	1.509$	59	-15.22%	28:31:00	11.245***
10	87	-19.34%	40:47:00	-0.75	28	-27.86%	10:18	-2.100*	59	-15.35%	30:29:00	0.243
11	87	-20.23%	38:49:00	-0.89	28	-28.64%	8:20<	-0.617	59	-16.30%	30:29:00	-2.833**
12	87	-21.86%	42:45:00	-0.44	28	-31.23%	13:15	-3.283***	59	-17.47%	29:30:00	-1.259
13	87	-22.54%	33:54(	-1.86	28	-32.68%	10:18	-3.113***	59	-17.79%	23:36	-0.497
14	87	-22.56%	43:44:00	0.38	28	-32.49%	13:15	-0.644	59	-17.91%	30:29:00	0.092
15	87	-23.58%	37:50:00	-1.81	28	-35.02%	8:20<	-4.005***	59	-18.21%	29:30:00	-1.162
16	87	-24.98%	35:52:00	-2.06	28	-37.43%	9:19(	-3.298***	59	-19.12%	26:33:00	-2.670**
17	87	-24.61%	42:45:00	0.05	28	-37.33%	14:14	-0.204	59	-18.63%	28:31:00	0.002
18	87	-24.13%	44:43:00	0.38	28	-35.25%	14:14	2.271*	59	-18.90%	30:29:00	-0.523
19	87	-24.28%	37:50:00	-0.69	28	-35.17%	17:11>	0.072	59	-19.17%	20:39<	-0.189
20	87	-26.06%	40:47:00	-1.28	28	-34.95%	16:12)	1.857*	59	-21.89%	24:35:00	-4.456***
21	87	-25.70%	48:39)	0.19	28	-35.84%	13:15	-2.198*	59	-20.94%	35:24>	1.354$
22	87	-24.63%	42:45:00	0.88	28	-32.42%	13:15	3.547***	59	-20.99%	29:30:00	0.024
23	87	-24.69%	43:44:00	0.33	28	-30.34%	15:13	3.284***	59	-22.07%	28:31:00	-2.344**
24	87	-25.05%	33:54(	-0.68	28	-30.00%	14:14	1.103	59	-22.75%	19:40<	-1.844*
25	87	-26.42%	34:53(	-1.19	28	-32.97%	8:20<	-4.947***	59	-23.37%	26:33:00	-1.078
26	87	-27.62%	31:56<	-1.83	28	-36.12%	9:19(	-5.363***	59	-23.63%	22:37(	-0.662
27	87	-28.12%	42:45:00	-0.12	28	-37.48%	13:15	-2.253*	59	-23.73%	29:30:00	-0.665
28	87	-28.53%	36:51:00	-0.24	28	-36.99%	12:16	0.61	59	-24.58%	24:35:00	-1.793*
29	87	-29.09%	41:46:00	0.05	28	-39.42%	14:14	-0.818	59	-24.24%	27:32:00	-0.073
30	87	-29.45%	38:49:00	-0.6	28	-38.64%	12:16	0.907	59	-25.14%	26:33:00	-1.505$

The symbols $,*,**, and *** denote statistical significance at the 0.10, 0.05, 0.01 and 0.001 levels, respectively, using a 1-tail test. The symbols (,< or),> correspond to $,* and show the significance and direction of the generalized sign test. Eventus (R) Software from Cowan Research, LLC.

Figure 1: Cumulative Average Abnormal Returns for Firms Accused of Fraudulent Reporting and Firms Accused of Earnings Manipulation

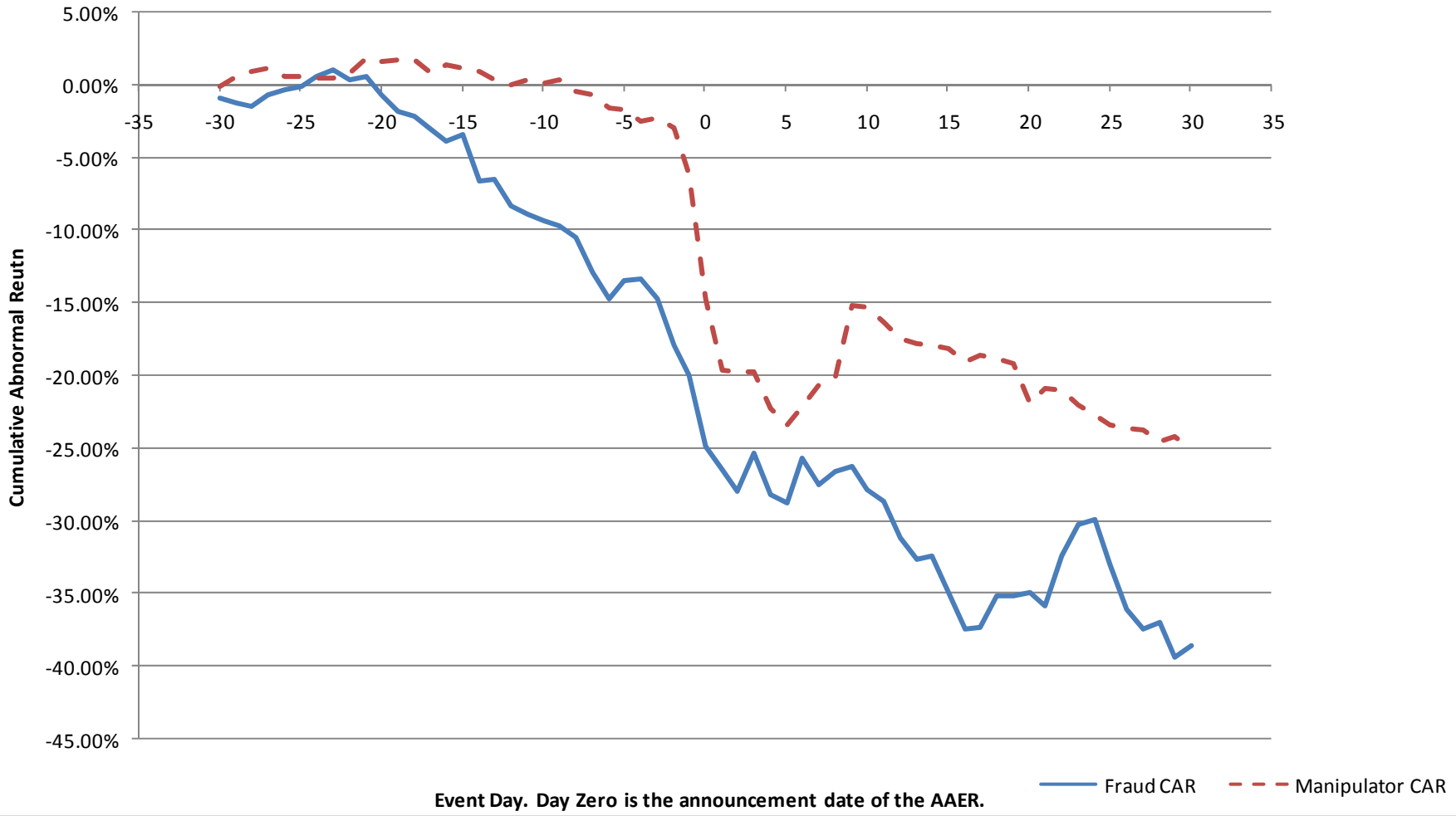

Table 4: A Comparison of CARs by Subsample for Different Event Windows				
Event Window		Overall Sample	Frauds	Manipulators
(-1, +1)		-14.075 ***	-16.64% ***	-8.51% ***
(-5,+5)		-19.20% ***	-21.62% ***	-13.99% ***
(-10, +10)		-16.72% ***	-18.89% ***	-15.71% ***
(+2, +30)		-7.60% ***	-12.09% ***	-5.48% *
*** = significant at the 0.001 level.				
* = significant at the 0.10 level.				

Table 5: Regression Results for the Cross-Section Tests on Cumulative Abnormal Returns from the Market Model.

Variable	Predicted Sign	CAR(-1,+1)	(p-value)	CAR(-5,+5)	(p-value)	CAR(-10,+10)	(p-value)
ACCRUAL[1]	-	1.1299	0.460	0.0319	0.971	0.9994	0.290
CEOFNDR[2]	+	0.8665	0.449	1.0541	0.111	0.9798	0.169
INDBDHLDG[3]	?	-2.0294	0.325	-1.8640	0.116	0.0048	0.997
PERINSDRBD[4]	-	-5.966	0.163	-4.0412	0.098	2.4093	0.354
SALPERC[5]	+	3.575	0.039	1.8860	0.054	1.0606	0.306
SGI[6]	-	-4.5115	0.0065	-2.7800	0.003	-2.2842	0.022
FRAUD[7]	+	1.0264	0.452	-0.1034	0.893	-0.4783	0.567
Adjusted R^2		0.326		0.438		0.438	

Notes:

1. Sloan's (1996) accrual variable
2. Dummy variable =1 if current CEO is company founder, 0 otherwise.
3. Percentage of total stockholdings by board of directors held by independent board members.
4. Percentage of board of directors who are company insiders.
5. Percentage of total compensation of top five executives that is in the form of salary and bonus.
6. Annual growth rate in sales calculated one year prior to the announcement date.
7. A dummy variable equal to 1.0 for fraud allegations and 0 otherwise.