Responding to Activist Short Sellers: Allegations, Firm Disclosure Choices, and Outcomes

Janja Brendel*
Humboldt-Universität zu Berlin

James Ryans†
London Business School

November 2019

Acknowledgments: We have received helpful comments from Stanley Baiman, Ulf Brüggemann, Anna Costello, Joachim Gassen, Ilan Guttman, Raffi Indjejikian, Reuven Lehavy, Nico Lehmann, Greg Miller, Gwen Yu, and seminar and conference participants at the Bolzano 2019 ERC Consortium, HU Berlin, the University of Michigan. We would like to thank Francesco Amodeo and Robert Moukabary for research assistance. James Ryans is grateful for the support of the AQR Asset Management Institute and the London Business School RAMD fund.

*Institute of Accounting and Auditing, School of Business and Economics, Humboldt-Universität zu Berlin, Unter den Linden 6, 10099 Berlin; janja.brendel@wiwi.hu-berlin.de

†London Business School, Regent's Park, London, NW1 4SA, United Kingdom; jryans@london.edu

Responding to Activist Short Sellers:
Allegations, Firm Disclosure Choices, and Outcomes

ABSTRACT

Activist short sellers identify and publicize allegations of fraud or overvaluation to induce shareholders to sell and the short seller to profit from the resulting price decline. Prior literature has not examined the information revealed by firms' responses to activist short seller reports, and yet managements' responses, which include public denials of the activist claims, the initiation of lawsuits against the short sellers, and announcements of internal investigations potentially reveal important information about the true state of the firm. Approximately 53 percent of activist reports allege fraud, and managers are more likely to respond publicly to activist short sellers who allege fraud, who release new evidence in their reports, and when there are more negative initial stock price responses to the short sellers' report disclosure events. Firms that respond with simple denials have the least negative outcomes, and firms that initiate internal investigations and threaten or initiate lawsuits against the short seller have the most negative outcomes such as AAERs and to delist.

JEL Codes: G34, D82, D86, M41

Keywords: activist short sellers; fraud; accounting manipulation; voluntary disclosure

1. Introduction

Suppose you are the CEO or a director of a firm for which a prominent short seller has just released a report alleging accounting deficiencies, product issues, and overvaluation to such an extent that they claim your firm is a fraud. Your stock has dropped 10 percent on the release of this report and shareholders and analysts are looking for reassurance that the short seller's allegations are false. How should you respond? The answer likely depends on the credibility and nature of the allegations made by the short seller, as well as the information possessed by you, the CEO or director. If you are certain the allegations are false, you might choose to issue a press release denying the allegations, or to remain silent in order to avoid giving the short seller additional publicity. If you are a director and have suspicions that the allegations may be true, perhaps you worry about your own liability and request an independent investigation to verify the true state of the allegations.

In this study we examine the causes and consequences of firm disclosure responses to activist short seller reports, to understand the competing incentives and the information revealed by management's response choices. Activist short sellers are motivated by the profit that can be generated from taking a short position in advance of a stock price decline. While some short sellers have been accused of market manipulation and securities fraud, activist short sellers wanting to engage in repeated campaigns are restrained by the need to provide credible analysis—that which successfully causes the target's price to drop—and avoid liability for civil and criminal penalties for defamation and securities fraud which could occur if they make false statements. In short, activist short sellers who want to make money over time need to identify overvalued firms and provide factually truthful research that reveals the overvaluation. The last 20 years have seen high-profile public short seller campaigns against a range of companies from large capitalization firms

such as Enron to small capitalization companies such as China Media Express.[1] These activist short sellers, described in Ljungqvist and Qian (2016, hereinafter LQ), publish research about target firm overvaluation, in order to profit from the resulting price declines by having taken short positions in the target's shares in advance of the report publication. Under traditional models, such overvaluation may be rational in the presence of short sale constraints (Harrison and Kreps, 1978) and noise traders (DeLong, Shleifer, Summers, and Waldmann, 1990). LQ show that activist short sellers can overcome significant limits to arbitrage and help improve market efficiency by publishing their research, thereby prompting long-holders to sell.

Prior research has not examined the information revealed by management in response to activist short seller reports. This setting is one in which there is potentially an important role of disclosure in influencing the market response to the report and in influencing other important firm outcomes that may arise in connection with the report, such as delisting, enforcement action, and acquisitions. We consider this research question by examining the factors associated with the target firm's disclosure decision and the information revealed by publicly responding to the activists and by the nature of the response. There is significant investor attention to activist reports, and price movements surrounding the issuance of these reports creates not only intense demand for a firm to respond, but also large risks and rewards as a result of making a public disclosure. Good firms should have a strong incentive to avoid being pooled with bad firms by disclosing their type, but it may be difficult for investors to judge the truthfulness of management disclosures in this setting, especially considering a large number of activist short sellers allege that the target company is committing fraud. Managers may also be hesitant to respond to a short seller report

[1] Enron SEC enforcement actions are available at https://www.sec.gov/spotlight/enron.htm; China MediaExpress SEC fraud judgement AAER 3540 https://www.sec.gov/litigation/litreleases/2014/lr22932.htm

as that serves to signal that the report is important and brings the activist additional publicity and validation.

On one hand, the credibility and ethics of short sellers have long been called into question, as there are numerous counterexamples of short sellers publishing untrue allegations.[2] Illegal market manipulation occurs when a short-seller takes a short position in advance of distributing false or misleading information, with the intention of driving down the stock price and covering the short position at a profit. The SEC cites manipulators as a motivation for short-position disclosure requirements, noting that short selling bear raids were thought by some to have caused the 1929 market crash and the subsequent inability of the market to recover.[3] On the other hand, activist short sellers are recognized to play an important role in correcting mispricing and identifying corporate malfeasance. LQ note that the targets of activist short seller reports are much more likely than the average firm to be delisted or be subject to enforcement actions.

Potential sanctions for managers who make false statements are also acute in this setting, mitigating the potential benefits of issuing false denials in response to an activist campaign. The activist report itself generates heightened regulatory scrutiny, suggesting that firms need to be careful in this setting that any response is truthful, to avoid charges of securities fraud associated with making false statements in connection with a security. This rectitude may discourage managers from making any public response when they might be uncertain about the true state of the firm. Of course, a short seller's allegations could be so negative, if accurate, that a false denial from the firm provides some probability of forestalling a negative outcome, giving managers time

[2] "*The Commission will vigorously investigate and prosecute those who manipulate markets with this witch's brew of damaging rumors and short sales," said SEC Chairman Christopher Cox*. SEC Charges Wall Street Short seller with Spreading False Rumors (April 24, 2008), available at https://www.sec.gov/news/press/2008/2008-64.htm

[3] Proposed Rule: Short Sales, Exch. Act Release No. 34-48709, 68 Fed. Reg. 62,972 (Nov. 6, 2005), available at https://www.sec.gov/rules/proposed/34-48709.htm.

to consume private benefits before the opportunity to do so expires. Even if the short seller's allegations are inaccurate, a firm might also choose to remain publicly silent, since a response serves to validate the short seller's importance and provides additional publicity to the short seller's thesis. Therefore, the information revealed by the lack of a response is an interesting question.

Another interesting aspect of this setting is that the disclosure choice involves a potential conflict of interest between management and the board of directors. Since the directors do not generally have the same level of access to information as management, and therefore about the credibility of the short sellers' claims, directors with greater uncertainty are less likely to authorize public responses likely reflect uncertainty about the true value of the firm. Going a step further, directors who have lost confidence in management may be inclined to publicly exercise their oversight through an announced investigation of the short sellers claims, and this announcement becomes a potentially revealing disclosure.

Activist short seller reports generally propose that the target firm is overvalued, and produce analysis of existing information, and sometimes reveal new information, to support this claim (LQ). To examine the information revealed by management's disclosure choices around short seller reports, we require a comprehensive sample of potentially credible short seller reports. Anyone may disseminate, at virtually no cost, reports about a firm's potential overvaluation on platforms such as Twitter and SeekingAlpha, most of which will not come to the target firm's attention. We therefore limit our study to activist short sellers who have published multiple in-depth reports alleging overvaluation, and which are therefore expected to provide material information and gain investors' attention. We do not however condition on that attention or on a price response, allowing us to study how varying levels of initial market response affect

management's disclosure choices. Our sample expands upon that of LQ (but is limited by the availability of returns and financial variables) and consists of 319 reports made by 24 prominent activist short sellers who publish multiple reports over the period from 1996 to 2017. These short sellers are either individuals or small boutique hedge funds who publish their research. Consistent with LQ we find significant negative returns to the report disclosure event (-4 percent), and a further negative return of -30 percent in the year following the report issuance.

We examine the content of activist reports and find the average short seller report raises 5.6 separate issues, including accounting issues, business and product related issues, and disclosure compliance deficiencies. Fully 53 percent of short seller reports accuse the firm of perpetrating a securities fraud on investors, which we record as a separate issue. LQ also note that reports that merely present opinions of overvaluation are less effective, and we code reports as to whether they produce new information, from sources other than the company's securities filings, often as are result of investigations of target firms' operations or regulatory filings that are not readily available to investors. New information is provided in another 53 percent of the reports in our sample.

We perform both descriptive analysis of the determinants of being targeted by activist short sellers, and we develop predictions based on disclosure theory for firm responses. Since the firm gets to observe both the short seller's information and the initial market response prior to determining the firm's response, we expect that management's response is related to the content of the report, the market's reaction, and the private information possessed by the firm about the accuracy of the short seller's allegations.

Managers respond in a minority of activist short seller campaigns, as only 32 percent of short seller reports generate a public response from management, a rate that increases to 57 percent if one considers the public disclosure of stock purchases and sales, which management may use to

signal without making a textual disclosure. When firms respond, the vast majority of disclosures take the form of press releases, as opposed to securities filings (8-Ks) or conference calls, and these responses are more likely to occur when the return to the short seller's report announcement is significantly negative. When managers choose to respond, we find that these responses follow several stylized themes: denial, hostile, constructive, and providing additional information. These disclosures are usually made via a press release or an 8-K filing, and are not mutually exclusive, since managers can pursue multiple disclosure activities. Denials generally state that the short seller's analysis is incorrect or inaccurate. Hostile responses generally attack the credibility and motives of the activist and may threaten legal action or request that the authorities investigate the short seller. Constructive responses involve the provision of clarifying information intended to blunt or deflect the short seller's thesis. Additional information disclosures provide investors with supplemental information, intended to counter the activist's report. These disclosure-based responses are likely intended to mitigate or reverse the price decline by correcting misperceptions introduced by the short seller and undermining their credibility.

We first examine factors associated with being targeted by activist short sellers in order to gain insight into how activist short sellers identify potentially overvalued targets, and to control for these factors which may also influence disclosure choices. We expect that managers will be more likely to respond, overall, when there is a more negative stock price response to the activist report since this is both more likely to bring the report to the attention if the firm, to reveal that the firm may possess private information (e.g., Dye 1985), and to cause managers to learn about the potential state of their firm and produce information to verify it (e.g., Zuo, 2016). Our predictions on the nature of the response, and what the response indicates about the true state of the firm is more intuitive. The default response is a simple denial of the short seller's allegations. Denials

could be both truthful and false, but we expect that given the amount of investor and regulatory scrutiny, denials will be on balance associated with better firm outcomes. Hostile responses, such as lawsuits against short sellers, are a more aggressive approach, which reflects potentially a more extreme form of a denial, but which may also reflect an intention to silence the current critic (and deter future critics), whatever the merits of the case, through an expensive litigation defense. We do predict that such a response is more likely when there is a significant price impact of the short seller's response, as this may reflect more severe allegations for which silencing the critic is a worthwhile attempt at survival by the firm's managers. We expect that initiating an internal investigation to determine the true state of the firm is a significantly negative signal, as it implies that the firm's directors are not sufficiently confident in management to trust that the existing disclosures and management representations are accurate. Such a response is more likely when there is a large initial stock price drop on the report disclosure, when there are more severe allegations, and assuming that the allegations are on average accurate, such a response is expected to indicate more severe future outcomes.

We find that activist short sellers target firms with traditional indications of overvaluation and fraud risk. Firms are more likely to be targeted if they have lower book-to-market ratios, higher Tobin's Q ratios, are less profitable, are predicted manipulators (Beniesh's (1999) M-score). Targeted firms are also likely to be recent IPO firms, where the incentive for manipulation is high, and foreign firms, where the potential for enforcement penalties are lower.

Controlling for the probability of being targeted, the disclosure choice is also related to the characteristics of the activist short seller report. Firms are more likely to disclose when there are allegations of securities fraud, when there is new evidence presented by the short seller, and when the target firm's stock return is more negative at the disclosure of the report. We also find that the

probability of a management response is related to firm characteristics of size and being a predicted manipulators based on the M-score. High M-score firms have historically been associated with receiving AAERs, and as a result there is an expectation that they are more likely than average to be manipulators. In further analyses we find that these manipulators are more likely to issue denials when they make a response, and in fact that such denials are associated with fewer AAER outcomes. As a result, it appears that disclosure is a decision that is associated with the prediction that firms will issue generally truthful denials to avoid being pooled with lower valued firms who do not make a disclosure.

We find that the worst outcomes from the perspective of stock returns and future negative outcomes is when the board reveals its lack of confidence in management by announcing an internal investigation of the short sellers' claims. This action appears less in keeping with reassuring investors than with protecting directors from liability when they are uncertain about the true state of the firm.

Overall the response to activist short sellers reveals information about the severity of the underlying allegations and therefore is useful to understanding disclosure incentives surrounding activist short sellers and the mechanisms by which potential overvaluation is corrected. In Section 2 we describe the sample, including arbitrageurs, their report contents, and management responses. In Section 3, we examine the determinants of short seller targeting and management response types. In Section 4, we study the association between allegations and management responses with outcomes, reflecting the information revealed about the underlying state of the firm. Section 5 concludes.

2. Conceptual Framework

The analysis presented in this paper is concerned with three branches in the existing literature. First, we speak to the literature on the behavior of short sellers and the credibility of their analyses (e.g., Dechow, Hutton, Meulbroek, and Sloan, 2001; Karpoff and Lou 2010; Engelberg, Reed, and Ringgenberg 2012; Ljungqvist and Qian 2016). Second, we relate to the literature on incomplete voluntary disclosure, specifically where managers possess an unknown information endowment (e.g., Dye 1985; Jung and Kwong, 1988; Dye and Sridhar 1995), where investors may have their own private information (e.g., Dutta and Trueman, 2002), and where managers have incentive to distort their disclosures (e.g., Dye, 1988; Fischer and Verrecchia, 2000; Beyer and Guttman, 2012). In cases where short sellers allege fraud, issues of managerial reputation and disclosure accuracy and completeness (e.g., Stocken 2000; Beyer and Dye, 2012) become acute. Third, this paper relates to the literature on managers' learning from their stock price changes (e.g., Edmans, Goldstein, and Jiang, 2015; Zuo, 2016), in particular how managers' private information and decisions may be augmented by investors' private information, since managers observe the market response to the short seller allegations prior to determining their response action.

Consider three situations created by the public disclosure of an activist short seller's report: first the report may present generally truthful information, but that which is already impounded in prices, resulting in no price impact. Second, the report could provide material new information which has not been impounded in prices, resulting in a significant decline in price. Third, the report could contain false information. False negative information may cause the target's stock price to decline temporarily until the false information is corrected (e.g., Mitts, 2018), or it is possible that the allegations may be difficult to rebut, resulting in a longer-term price decline.

These situations potentially create variation in incentives for management to make disclosures (e.g., Grossman, 1981) in response to the issuance of the short seller's report.

Prior to the short seller's report, the market is unaware that the target firm's management possesses unfavorable information, and so there is limited incentive to disclose (e.g., Dye, 1985; Jung and Kwon, 1988). Following the short seller's report, the market becomes aware of the possibility that managers have private information, and so, on average, we expect that firms will increase their disclosures, either to reveal the private information or to refute that such private information exists.

Since managers have a chance to observe the market response to the report before deciding to respond, the lack of a stock price response can signal to managers either that the report is uninformative or that a high fraction of investors are uninformed (e.g., Dye 1988). Managers adjust disclosures in response to market price signals (e.g., Badertscher, 2011; Sletten, 2012; Li and Zhang, 2015), and such information flows two ways, since managers' private information is not always superior to that of outside investors (e.g., Zuo, 2016).

Managers' responses can be constructive, whereby they reveal private information, to either confirm or refute the short seller allegations, but not directly take action against the short seller. A hostile response involves management attacking the short seller, e.g., their credibility, accusing the short seller of market manipulation, or suing the short seller. Managers' responses to activist short seller reports, and the truthfulness of their response is related to the costs of falsification (e.g., Beyer and Guttman, 2012) which in turn depends on the severity of the allegations made by the short seller. Allegations of fraud may cause significant price declines, inducing managers to respond to such claims. The cost of falsification in this setting, however, is unclear. Admitting the truth of a fraud claim will result in certain enforcement action, whereas

denial of a truthful fraud claim has some probability of forestalling an enforcement action, favoring making a false denial. On the other hand, the attention raised by the activist may make an enforcement investigation likely, and a false denial of a true allegation made by the short seller may open management up to sanctions, favoring a non-response.

The simplest action by the firm involves doing nothing, as a response can legitimize the short seller and the firm's response creates further publicity of the short seller's views. If there is no market response to the short seller's report, there is little reason for management to acknowledge the report with a response, no matter how accurate the report. If the allegations are false, then a non-response serves to signal that the short seller is not worthy of a response and therefore lacks credibility. Management may privately communicate to investors that the allegations are unfounded, but these communications are by their nature not observable. If the allegations are true, then management may benefit from a non-response in order to buy time to resolve the allegations, identify an exit strategy such as an acquisition, or simply to allow management to continue to consume personal benefits for as long as possible. Where the accusations are severe and true, such as those claiming securities fraud, any management disclosure is potentially costly: admitting the fraud invites near-certain enforcement response and termination of management's employment, and untruthful responses risk additional fraud actions stemming from the untruthful response itself. Finally, the lack of a response can also indicate that the directors or management are uncertain about the veracity of the short sellers' claims and are therefore unwilling to make a public response that could later be found false.

Alternatively, making a public response, such as by suing the short seller for defamation, may aim to resolve market uncertainty in favor of the company. Lawsuits may be considered as a means of securing a symbolic victory over a short seller if they are untruthful in their claims. Some

target companies may even consider suing the short seller for defamation even if the allegations are true, with the primary intention being to silence a critic who lacks resources to mount a defense, rather than by establishing the merits of a case. To successfully sue for defamation in a civil action, the target must prove that the short seller published a false statement about the target, which harmed the reputation of the target or the target's executives. The primary defense to such a suit is for the short seller to show that the allegations are substantially true: not every allegation has to be completely accurate to present a successful defense. In order to protect such critical speech in the public interest, many jurisdictions have enacted anti-SLAPP legislation ("strategic lawsuit against public participation") to reduce the costs of defending defamation lawsuits when the subject is of public interest. To further limit the costs of defense when an anti-SLAPP motion is successful, a defendant who prevails is generally awarded reasonable costs of defense, dramatically reducing the ability to silence a truthful critic with litigation. There have been numerous examples of short sellers prevailing in anti-SLAPP actions when sued by a target company, e.g., GTX Global vs. Andrew Left (Citron Research), a case in which the target company could not provide sufficient evidence to demonstrate that the short seller made false statements.[4] As a result, lawsuits against short sellers is relatively rare, as it puts a significant burden on the target company to be able prevail when the short seller has made numerous allegations, and where the allegations involve matters of opinion and contain some elements of truth.

3. Sample and Data

We begin with the sample used in LQ and extend their sample to 421 initial short selling reports by repeat arbitrageurs from 1996 to 2017 for US-listed targets of activist short-sellers. These observations are reduced by 33 by excluding firms trading OTC and another 69 for lack of

[4] GTX Global Corp v. Left, 2007 WL 1300065 (Cal Crt App, 2d Dist., 1997).

availability of required financial data, resulting in a final sample size of 319 reports. Similar to prior literature (e.g., LQ; Chen, 2016; Liu et al., 2015), we capture all reports written by these arbitrageurs, summarized in Table 1, to ensure that there is no selection bias in the report-capture process. We manually verify that we have captured all reports issued by these short sellers using the short sellers web sites, internet archive, and platforms on which the firms' analyses are published such as SeekingAlpha.

[Insert Table 1 about here]

This is believed to be a relatively complete list of arbitrageurs who publicly issue multiple reports over the time period of our study, and for whom we are able to capture a complete record of their reports. This sample construction ensures that the short seller's allegations are observable, and because these short sellers all disclose their short positions, we filter out bloggers and other commentators who post non-professional comments and whose reports are less likely to come to the attention of the firm. We also exclude larger professional hedge funds that do not systematically publish their research, but periodically announce a position through media interviews or conference presentations. Examples of these investors include Jim Chanos of Kynikos Associates, primarily a short seller, and David Einhorn of Greenlight Capital, a long-short hedge fund manager.

The most prolific arbitrageurs include Richard Pearson, GeoInvesting, Spruce Point, and Citron Research, with more than 25 reports each in the sample period. We note whether or not the activist published anonymously. The decision to post anonymously is made based on the short seller's choice to reduce their credibility by going unnamed, but to protect themselves from potential lawsuits and charges of market manipulation. While we find that lawsuits are relatively infrequent, observed for 6 percent of our report sample, the cost of defending such suits may be

high for small arbitrageurs.[5] At least one arbitrageur in this sample, Bleeker Street Research, stopped publishing independent short selling research during the sample period as a direct result of receiving lawsuits from targeted firms. Citron Research noted that, as of 2007, they had been sued five times, but had to that point prevailed in their defense of each lawsuit.[6]

[Insert Table 2 about here]

After collecting all initial reports, we read the short seller reports ourselves to describe the types of allegations that short sellers make. Table 2 illustrates the rate at which various allegations occur in short seller reports. We code indicator variables for what we observe to be the major categories: accounting issues (i.e., issues with revenues, expenses, income, cash flows, assets, liabilities, non-GAAP presentation, auditor issues), disclosure issues (incomplete disclosures, serious errors in disclosures), product and business issues (product quality, Ponzi schemes, inherently unprofitable products, related party transactions, fabricated customers, poor acquisitions or divestitures), management issues (past frauds, management turnover, competence). Finally, we code an indicator variable for short sellers' opinion on the severity of the allegations leading to announcing an opinion that the firm is committing securities fraud, by making an explicit statement to that effect (e.g., "…management of Textura is committing FRAUD on the investing public." [emphasis in the original]). We also code an indicator for new information, related to LQs concept of the short seller presenting information that is more involved than a simple opinion of overvaluation. We code a new evidence indicator when the short seller presents information that has not already been disclosed in securities filings, which is frequently made clear when the short seller provides evidence gathered using private investigators or filings with non-securities

[5] Richard Pearson has published a detailed account of a lawsuit process brought by a short-selling target which illustrates the costs involved in defending such suits. https://moxreports.com/behind-the-scenes-with-vuzix-sichenzia-and-irth/
[6] https://citronresearch.com/so-you-want-to-sue-citron-research/

regulators which are not readily available to investors, such as foreign company registry documents. Appendix A illustrates how a report is coded along these various dimensions.

Table 2, Panel A, illustrates the types of allegations made by short sellers. On average, 1.77 types of accounting issues are raised per short seller report, which at least one accounting issue mentioned in 65 percent of reports. The most common issues reflect audit and internal control issues, revenue concerns, and asset accounting (39, 30, and 28 percent of reports, respectively). An average of 1.35 business-related issues are raised per report, with fundamental business concerns present in 74 percent of reports. Business concerns include a relatively broad range of issues about the fundamental health of the business, such as evidence that the scope of the firm's operations are misrepresented, that the model is inherently unprofitable or a Ponzi scheme, that claimed customers do not exist. In some cases, different allegations are interrelated, for example a business concern involving fabricated customers implies that revenue is misstated. In total we identify an average of 5.62 different issues raised per report, indicating that short sellers target firms with a variety of issues present.

LQ have shown that short seller reports revealing new evidence are more significant predictors of negative returns. Table 2 Panel B confirms this result for the initial announcement returns in our sample, with -9 percent announcement returns for new evidence reports and 0 percent returns for no-new evidence reports. However, when we look to total abnormal returns over the one year period beginning with the announcement (CAR[-1,+252]), we find that the returns are similar for both new evidence and no-new evidence reports (-33 percent and -34 percent respectively). This provides evidence that while new evidence reports are more salient and likely more profitable for short sellers, the allegations of overvaluation appear to be of similar magnitude whether or not new evidence is present.

We also look to see if securities fraud allegations made by short sellers offer credible indications of more severe overvaluation. Securities fraud allegations are associated with similar announcement returns as new evidence reports, with announcement returns of -10 percent for fraud allegations, and a return of 3 percent without fraud allegations. In addition to the initial price response differential, there is significant downward drift for firms with fraud allegations with total abnormal returns for the year being -41 percent for firms with fraud allegations compared to -25 percent for firms without fraud allegations. As a result, fraud allegations appear to distinguish more overvalued firms, and a significant valuation gap persists for fraud- and non-fraud-allegation firms over the subsequent year.

To illustrate how the prevalence of new evidence and fraud allegations vary by short seller, Table 1 also reports the proportion of each activist's reports that make fraud allegations and provide new evidence, by activist. The rate at which these features are present in short seller reports varies significantly. For example, Kerrisdale Capital reports only allege fraud in 25 percent of cases whereas Muddy Watters alleges fraud in 79 percent of reports. Firms also vary in their production of new evidence, with Ascensio & Co. entirely relying entirely on existing evidence (0 percent new evidence), and Muddy Waters presenting new evidence in 93 percent of reports. As a result, allegations of fraud and the provision of new evidence vary by short seller.

[Insert Table 3 about here]

The second area of data collection is to understand management's response to short seller reports. We hand-collect press release and news articles from Factiva, conference call transcripts from Thomson Reuters Eikon, litigation from Audit Analytics, and 8-Ks from EDGAR for evidence of management's response to short-seller reports. We record an indicator and the date of any publicly disclosed response by management if it occurs within two weeks of the short seller

report date and specifically addresses allegations made in the report. Where the firm responded to the short-seller report, we hand code indicator variables for the nature of the responses, which are not mutually exclusive. We identify if the response included a denial of allegations made by the short seller, if the response was hostile to the activist (for example, disparaging the short seller by name, criticizing the motives or quality of the analysis, threating a lawsuit or alleging market manipulation), if the response was constructive (by responding to the allegations in the report without disparaging the short seller), if the firm threatens or files a lawsuit against the short seller, if the firm announces an internal investigation into the short seller's allegations, and if the firm provided additional disclosures. Details and an example of coding a target firm's response can be found in Appendix B.

We also examine the rate at which different activists generate target firm responses, on a univariate basis, in Table 1, where we include a column to tabulate the fraction of reports that result in target firm responses for each activist, which illustrates an overall company response rate of 32 percent. There is significant variation among activist short sellers in achieving a management response, for example with Richard Pearson achieving a response rate of 13 percent, whereas Glaucus Research achieves a response rate of 86 percent.

To measure firm outcomes, we examine abnormal returns over three months and one year following the short seller report event, as well as exchange delisting, being acquired, and enforcement actions (AAERs). Daily price and trading data for target companies are from CRSP, and financial data is from Compustat. Appendix C provides descriptions of all variables. The mean CAR[-1,+60] column of Table 1 illustrates average 3-month abnormal returns, including the announcement effect, are percent for all reports, with significant variation by short seller, although nearly all have at least nominally negative return track records.

4. Target Firm Disclosures in Response to Short Sellers

The results in Table 3 suggest that disclosures in response to activist short seller reports are common, but do not occur in the majority of cases. Denials of the short seller allegations occur for 29 percent of activist campaigns, 13 percent of cases result in additional disclosures, 6 percent involve a hostile response or lawsuit, and 5 percent result in an internal investigation being announced. If we consider insider trades, 24 percent of managers and directors are net sellers of shares in the two weeks following the activist report, and 14 percent are net purchasers.

4.1. Disclosure Choice and Severe Outcomes

Overall, firms that do not respond to the short seller are more likely to avoid a severe outcome, with delisting, AAER, or being acquired outcomes occurring for 46 percent of non-response firms versus 50 percent firms that make some form of response (Table 3). Overall the difference in outcomes between response and non-response firms is not large, revealing relatively little about the accuracy of the underlying allegations. However, significant differences in outcomes become apparent when one considers the information revealed by the type of response.

Considering the effect of returns on disclosure, the announcement return (CAR[-1,1]) for all reports is -5%, and the return associated with disclosure and non-disclosure firms is similar at -3% and -6% respectively (not significantly different). The post-disclosure return reveals similar results, with no significant returns following the initial announcement, and over the disclosure window, with returns of -14% and -12% for responding and non-responding firms, respectively (not significantly different). Overall, the simple act of making a disclosure reveals relatively little information.

4.2. Response Types

When we examine outcomes based on the type of response, a much more nuanced view emerges. Table 3 provides a breakdown of the outcome and returns by response type. We find that different response types have dramatically different implications about firm outcomes. Although they are associated with different short seller report disclosure returns, the long-term returns do not vary significantly based on the disclosure type or outcome, indicating that the short seller reports target similar levels of overvaluation, without regard to the type of outcome we measure.

The overall rate of delisting among target firms is high, at 26 percent, and we find that delisting rates are highest when the response type is a lawsuit and internal investigation (55 percent of either type of discloser). Denials and constructive additional disclosures are associated with relatively average rates of delisting at 28 percent and 32 percent respectively.

Considering enforcement actions, which are indicative of more severe misreporting and fraud, we find that internal investigation responses are dramatically more likely to result in AAERs, at a rate of 27 percent of such disclosure events. Firms that deny the allegations have below average rates of AAERs, at 3 percent, and firms that sue the short seller do not have any AAERs in our sample.

The fact that lawsuit and internal investigation response firms have similar rates of delisting (55 percent), a measure of report accuracy, but vastly different rates of AAER issuance (0 versus 27 percent respectively), another measure of report accuracy, is somewhat puzzling. One explanation is that the firm is of low value in both cases (hence the delisting result), but the internal investigation signals the directors awareness that management fraud is likely. Another explanation is that the SEC and Department of Justice are wary of undertaking enforcement cases against

litigious firms, as the government's litigation resources are limited, and delegate these situations to be resolved by the stock exchanges and civil and bankruptcy courts.

The stock price response indicates that disclosure responses are associated with significant negative returns, while insider trading responses, both purchases and sales are associated with more positive returns (not significant). Internal investigation responses are announced in response to the most severe initial negative responses, having an average of a -27% negative return on the announcement of the short seller report. Denials, hostile, and lawsuit responses occur after average announcement returns of -14 percent, -17 percent, and -18 percent, respectively. Considering a one year window beginning the day prior to the short seller report disclosure, the abnormal returns to the short seller campaign is relatively similar for all disclosure types.

4.3. Identifying target firms

[Insert Table 4 about here]

What are the characteristics of activist short seller targets? We provide descriptive analysis of the types of firms targeted by short sellers to understand potential ways in which firms are targeted. Table 4 presents univariate descriptive statistics of targeted firms in our sample, as well as a comparison to the Compustat universe of listed stocks over the same time period as our short seller reports. The sample includes all listed firms in CRSP and Compustat with the necessary data availability to calculate the covariates, from 1996 to 2017. We find that firms targeted by short sellers are generally smaller than the Compustat average, approximately half the size (1,967 million for targeted firms versus 3,847 million for listed Compustat firms). The firms are also different on many dimensions: they have lower Book-to-Market ratios, lower leverage, higher analyst following, are more likely to be foreign, have higher litigation risk, higher short interest,

higher Tobin's Q, lower dividend yields, are less profitable, and are more likely to be earnings manipulators.

[Insert Table 5 about here]

In addition to the univariate descriptive statistics previously discussed, Table 5 presents a probit regression to investigate the multivariate determinants of targeting, and the partial effects of the covariates. The dependent variable is an indicator equal to 1 if the firm-year observation was subject to an activist short-seller report in our sample, and 0 otherwise. The unconditional probability of being targeted by one of the activists in our sample was 0.22%.

The results in Table 5 are largely consistent with the results in Table 4, although we do not find that size is a determinant of being targeted after controlling for other factors. Compared to non-targeted firms, book to market is lower, Tobin's Q is higher, ROA is lower, leverage is lower, and dividend yields are lower. These results seem sensible in the short selling setting, since they are factors likely to be associated with overvaluation and a lower cost of shorting, since the short seller has to pay cash dividends on borrowed shares. In addition, target firms are significantly more likely to be labeled as manipulators using the M-score, to be recently listed, and to be foreign. These factors are associated with potential for distorted earnings, and in particular foreign firms may have lower ability for enforcement actions to provide a credible deterrent to management. The higher short interest indicates that activist short sellers are attracted to firms that have already been identified by the market as potentially overvalued. Consistent with LQ, high short interest is also associated with higher borrowing costs and greater limits to arbitrage, and therefore the publication of a report is a more attractive way to resolve the overvaluation.

4.4. Management's response decisions following activist short seller reports

[Insert Table 6 about here]

We next examine the decision to respond and the type of response in a multivariate setting, using the inverse Mills ratio from the selection regression in Table 5 to control for the sample selection bias that we only observe response decisions for firms that have been targeted. In Panel A of Table 5, Columns 1 through 4 illustrate the determinants of the decision to provide a public response to the activist short seller based upon firm specific factors and key report-related indicators of importance. Columns 1 to 3 consider the report-related variables for securities fraud claims, new evidence, and the initial stock price response separately, and column 4 includes all three covariates together.

Based on firm fundamentals, we find that large firms are more likely to respond, independent of the report contents. We also find that firms labeled as manipulators by the M-score are more likely to respond. Considered independently, reports with allegations of securities fraud and that present new evidence are associated with a greater likelihood of a response, as does a more negative report announcement return. Considering all three variables together, the securities fraud variable is no longer statistically significantly different from zero, although it retains a positive sign. Overall the results indicate that firms respond to more significant short seller report news, and where the market's initial assessment of overvaluation is more severe. While the fact that the negative return indicator result can be explained by simple management awareness of the report, which is brought to their attention following a sudden decline in the stock price, the fact that the arbitrageurs are well-known and managers are likely aware of their reports independent of the stock price result, indicates that the stock price decline is not the only driver of the response decision. That new evidence reports provide significant association with the disclosure decision,

independent of the stock price response, provides evidence that the disclosure decision is made based upon the information content of the report, beyond what is reflected in the initial price response.

Panel B of Table 6 considers the determinants of different types of responses. We find that firm characteristics are relatively unimportant, except for a few specific cases: large firms are more likely to issue a denial (Column 1), foreign firms are more likely to launch an internal investigation and provide additional disclosures (Columns 4 and 5). This result indicates that directors of foreign firms may be less informed than directors of firms with domestic operations, and hence may be more concerned with their personal liability. Considering report characteristics, activist reports that cause negative returns on the target's stock are significantly associated with denials, lawsuits, internal investigations (Columns 1, 3, and 4), and positive returns are associated with insider sales. After controlling for returns and firm characteristics, there is no statistically significant association between the response type and securities fraud allegations, though reports with new evidence are associated with firms making public denials (Column 1). Overall, the credibility of the report contents, reflected by new evidence, and especially by negative announcement returns, are most associated with firm disclosures, and firm characteristics further help determine the type of response.

4.5. Target firm outcomes

[Insert Table 7 about here]

Lastly, we examine the association among target outcomes, activist short seller allegations, and target firm response types. Table 7 Panel A reports a probit regression of significant firm outcomes on report allegations and firm characteristics. For the three types of outcomes we examine, delisting, SEC enforcement actions (AAERs), and being acquired, both allegations and

firm characteristics can influence the outcomes. We find that 26 percent of target firms are delisted within a year following the activist short seller report disclosure (Table 3). In column 1, which examines the delisting outcome, we find that allegations associated with business issues, such as allegations of poor product quality are less likely to be delisted than firms that are targeted for other reasons. Other firm characteristics are associated with future delisting, such as smaller firms, firms with higher M-scores, foreign firms, and firms with greater short interest at the time the report is released. In column 2 we examine the enforcement outcome, where the target firm is named in an AAER subsequent to the activist report. We observe that 8 percent of our sample receives an AAER (Table 3). Firms with allegations of business issues are less likely to face AAERs, and firm specific factors of the firm having a recent IPO and high short interest at the time of the report issuance as associated with greater AAER incidence. Firms with greater analyst following are associated with a lower incidence of AAERs. In column 3, we examine the outcome of the target firm being acquired in the year following the activist report. Overall 19 percent of the firms in our sample (Table 3) are acquired following the activist event, and we find that activist allegations of securities fraud have a significantly lower probability of being acquired, consistent with such accusations casting considerable uncertainty about the target's true value. The primary firm characteristic associated with being acquired is analyst following, which may provide acquirers with more reassurance of target quality. Overall these findings indicate that report allegation categories and firm characteristics have some predictable associations with firm outcomes. Allegations regarding business issues appear to be less severe than other allegations, and securities fraud allegations, while not significantly associated with delisting and AAERs, do appear to identify firms that are less attractive as acquisition candidates. With regard to firm characteristics, IPO firms appear more likely to have negative outcomes, and firms with greater

analyst followings appear to have a lower rate of AAERs and a greater ability to sell themselves, consistent with analysts playing a monitoring role against misconduct.

We consider the effect of firm responses on outcomes in Table 7 Panel B. In column 1, we examine delisting outcomes, and do not find a statistically significant association between delisting and firm response categories. While the coefficient on lawsuits is positive (with a marginal probability indicating an 88 percentage greater chance of delisting when the target firm sues the short seller), the small number of firms engaging in such lawsuits (6 percent, Table 3) makes it difficult to observe a statistically significant relation. With AAERs, in column 2, we find that the denial response is negatively associated with AAERs, indicating that such denials are at least marginally truthful. Disclosures of internal investigations are associated with a greater chance of receiving an AAER (8 percent greater likelihood) consistent with such investigations revealing that the firm does not necessarily dispute the activist's allegation, and that there is a lack of confidence in management. In column 3, we find a greater probability that the target firm is acquired (13 percent marginal effect) when the firm issues a denial, again illustrating that such denials are on average credible. Firms announcing internal investigations are significantly less likely to be acquired. Firms that sue short sellers appear to be somewhat more likely to be delisted, somewhat less likely to suffer an enforcement action, but are less attractive acquisition targets, thought the small number of lawsuits does not allow for statistically significant inferences. A story consistent with this set of outcomes for firms that sue short sellers is that the short seller allegations may have been accurate (delisting more likely), that the SEC may avoid engaging with targets likely to involve more costly litigation (AAER result), but that this combative approach also repels acquires (being acquired result). Overall these results indicate that firms issuing denials of the activists' allegations are on average credible, with such firms being less likely to be subject to

AAERs and more likely to be viable acquisition targets. Firms announcing internal investigations reveal that the short sellers' allegations are more likely to be true, resulting in a significantly higher rate of AAERs and being less attractive acquisition targets.

5. Conclusion

We contribute to the growing literature on short sellers in general and to the recent literature on activist short sellers in particular by examining the information revealed by voluntary disclosure made by target firms in response to activist short seller reports. We expect and find that managers are more likely to respond to short-sellers when allegations are more severe, and when the initial stock price response to short seller reports is more negative. Our analysis of managements' response is related to the literature on the costs of voluntary disclosure and incentives to withhold information and dissemble, as well as the literature on managers' real actions in response to stock price changes. We find that firms that respond in a constructive manner and that engage in internal investigations do so based upon more severe activist reports, and these firms also have more severe firm outcomes, in particular with high rates of AAERs and delisting, indicating that these firms on average use the disclosure decision to reveal negative information to shareholders in potential conflict with management's interests. Overall the results provide additional insights into factors associated with short sellers and market efficiency, as well as voluntary disclosures in the presence of information asymmetry and significant costs and benefits of disclosure choices.

REFERENCES

Badertscher, B. A. (2011). Overvaluation and the choice of alternative earnings management mechanisms. *The Accounting Review*, 86(5), 1491-1518.

Beneish, M. (1999). The detection of earnings manipulation. *Financial Analysts Journal* 55(5), 24-36.

Beyer, A., & Guttman, I. (2012). Voluntary disclosure, manipulation, and real effects. *Journal of Accounting Research*, 50(5), 1141-1177.

Beyer, Anne, and Ronald A. Dye. "Reputation management and the disclosure of earnings forecasts." *Review of Accounting Studies* 17, no. 4 (2012): 877-912.

Chen, L. (2016). The Informational Role of Short-sellers: The Evidence from Short-sellers' Reports on US-Listed Chinese Firms. *Journal of Business Finance & Accounting*, 43(9-10), 1444-1482.

Dechow, P. M., Hutton, A. P., Meulbroek, L., & Sloan, R. G. (2001). Short-sellers, fundamental analysis, and stock returns. *Journal of Financial Economics*, *61*(1), 77-106.

DeLong, B., Shleifer, A., Summers, L., and Waldman, R. (1990). Noise trader risk in financial markets. *Journal of Political Economy* 98:703-738.

Dutta, S., & Trueman, B. (2002). The interpretation of information and corporate disclosure strategies. *Review of Accounting Studies*, 7(1), 75-96.

Dye, R. A. (1985). Disclosure of nonproprietary information. *Journal of Accounting Research*, 123-145.

Dye, R. A. (1988). Earnings management in an overlapping generations model. *Journal of Accounting research*, 195-235.

Dye, R. A., & Sridhar, S. S. (1995). Industry-wide disclosure dynamics. *Journal of Accounting Research*, 33(1): 157-174.

Edmans, A., Goldstein, I., & Jiang, W. (2015). Feedback effects, asymmetric trading, and the limits to arbitrage. *American Economic Review*, 105(12), 3766-97.

Engelberg, J. E., Reed, A. V., & Ringgenberg, M. C. (2012). How are shorts informed?: Short sellers, news, and information processing. *Journal of Financial Economics*, 105(2), 260-278.

Fischer, P. E., & Verrecchia, R. E. (2000). Reporting bias. *The Accounting Review*, 75(2), 229-245.

Grossman, S. J. (1981). The informational role of warranties and private disclosure about product quality. *The Journal of Law and Economics*, 24(3), 461-483.

Jung, W. O., & Kwon, Y. K. (1988). Disclosure when the market is unsure of information endowment of managers. *Journal of Accounting research*, 146-153.

Karpoff, J. M., & Lou, X. (2010). Short-sellers and financial misconduct. *The Journal of Finance*, 65(5), 1879-1913.

Lamont, O.A., 2012. Go down fighting: Short-sellers vs. firms. *The Review of Asset Pricing Studies*, *2*(1), pp.1-30.

Li, Y., & Zhang, L. (2015). Short selling pressure, stock price behavior, and management forecast precision: Evidence from a natural experiment. *Journal of Accounting Research*, 53(1), 79-117.

Liu, H., Xu, N., & Ye, J. (2015). Short-sellers' accusations against Chinese reverse mergers: Information analytics or guilt by association?. *China Journal of Accounting Research*, 8(2), 111-131.

Ljungqvist, A. and Qian, W., 2016. How constraining are limits to arbitrage?. *The Review of Financial Studies*, *29*(8), pp.1975-2028.

Mitts, J. 2018. Short and distort. Working Paper, Columbia University.

Sletten, E. (2012). The effect of stock price on discretionary disclosure. *Review of accounting studies*, 17(1), 96-133.

Stocken, P. C. (2000). Credibility of voluntary disclosure. *The RAND Journal of Economics*, 359-374.

Zuo, L. (2016). The informational feedback effect of stock prices on management forecasts. *Journal of Accounting and Economics*, 61(2-3), 391-41

Appendix A: Short-seller Allegations Taxonomy

Coding example of a short-seller report

Short-seller report by Muddy Waters, LLC on Orient Paper Inc. (NYSE : ONP), report date June 28, 2010
Available at: https://www.muddywatersresearch.com/research/orient-paper-inc/initiating-coverage-onp/ *(accessed 25.10.2018)*

#	Item	Description	Example	Coding value (0/1)
1	Accounting issues			
1.a	Revenues	*Overstating revenues*	• ONP overstated 2008 revenue by 27x. • ONP overstated 2009 revenue by approximately 40x.	1
1.b	Expenses	*Understating expenses*		0
1.c	Income	*Overstating income, such as operating or net income*		0
1.d	Cash flows	*Misclassifying or overstating cash flows*		0
1.e	Assets	*Overestimation of assets, improper asset recognition, failure to write down the asset, goodwill overestimated*	• ONP overvalues its assets by at least 10x. Despite inflating the value of its inventory by at least several times, ONP's inventory turns are far fewer than it reports. Once armed with knowledge of the poor state of ONP's production equipment and	1
1.f	Liabilities	*Undisclosed liabilities (e.g. off-balance sheet liabilities) or liabilities not accounted for*		0
1.g	Inadequate Non-GAAP measures	*Inadequate Non-GAAP measures (e.g., EBITDA, EBIT, adj. EBITDA, adj. EBIT)*		0
1.h	Auditor & internal controls	*Weak auditor, frequent changes of auditors and internal control issues*	**Our Theory as to Why ONP's Auditors Have Missed the Fraud** We'd be remiss if we didn't address the question of how the auditors could have missed such a large fraud. For one, ONP's 2007 financials were not audited, although they appear to be if one reads the 2007 Form 10-K. After ONP filed the 2007 Form 10-K, the auditor for the shell company into which HBOP "merged" (see *ONP Has a History of Deceiving Shareholders*) clarified that the unqualified opinion in the 2007 Form 10-K *incorrectly* states that it audited HBOP.[45] It is possible that the work of ONP's subsequent auditors has been affected by this error in the unqualified opinion shown in the 2007 10-K.	1
2	Disclosure issues			

2.a	Incomplete disclosures	*Vague or inadequate disclosures*	received is below. Keep in mind that ONP's equipment values were supposed to be as of 2003. (Moreover because we believe that the equipment dates from the mid-1990s at the newest, it was likely well used at the time of contribution. However, the verification report did not specify whether the equipment was new or used.) In contrast, we received quotes on brand new equipment at 2010 prices.	1
2.b	Serious errors in disclosures	*Disclosures that are inconsistent with the law; fraudulent disclosures, missing documents that are demanded by law/regulation*	ONP overstated its 2008 revenue by approximately 27 times. Put another way, ONP's actual revenue of $2.4 million was only 3.7% of the amount it reported in its Form 10-K.[15]	1
3	Product or business issues			
3.a	Product issues	*Bad products, fake products*	The videos and pictures show that ONP's pitch that "Orient Paper will focus on middle and high-end products and brands, stick with 'excellent technology, superior quality and diversified products'"[33] is untrue. ONP's machinery is obviously poor and incapable of producing high quality paper. Most telling though is ONP's indifference to water and steam in the workshops. Once paper is exposed to water, it is	1
3.b	Business issues	*For instance: Ponzi scheme, inherent unprofitability, related party transactions, missing clients and contracts, production facilities non-existing*	ONP's actual revenue grew little – if at all – from $2.4 million. Our January 5, 2010 site visit showed that ONP is operating at roughly the same scale as it was in 2008. It exhibited almost no truck traffic or logistics activity. We saw no sign that ONP's claimed 600 workers exist. Given that ONP claimed ONP claims to have 600 workers.[21] In reality, it either has a one million dollar contingent labor liability, or it does not have nearly the number of workers it claims. We think the latter is the case. During our site visit, we did not see nearly the level of activity that would imply ONP employs 600 workers. The	1
3.c	Acquisitions and divestitures issues	*Poor or improper acquisition and divestitures*		0
4	Management issues	*Past fraud participation, frequent changes of top management (CEO, CFO)*	to enforce such agreements against himself. We feel that this conflict of interest is difficult for Chairman Liu to manage. However, we have found evidence that the PRC financial statements overstate (likely by at least $20 million or two times) the value of ONP's assets. ONP was a tiny company with equity capital of only $512,000 (RMB 3.5 million) until 2003.[30] In 2003, Chairman Liu and his brother, Xiaodong Liu, invested $10.5 million (RMB 71.5 million) in equity capital.[31] The problem is that none of the investment was in the form of cash. Rather, it was in the form of equipment, the values of which value were established by an "independent" appraiser. (In 2009, ONP apparently found an "independent" appraiser that greatly overvalued the Shuang Xing assets by about 40x or $14.5 million – see *Approximately $30 Million Has Been Misappropriated Since October 2009*.)	1
5	Fraud claim			
5.a	Securities fraud	*If short-seller alleges material lie or omission in connection with the purchase or sale of a security, insider trading* *Filings that included false reports (annual report, quarterly reports). Do they use the word "fraud"?*	**We are confident than ONP is a fraud. Its purpose is to raise and misappropriate tens of millions of dollars.**	1
6	New evidence	*If short-seller provides new information not in existing securities filings, or produces*	ONP overstates the values of its assets by at least 10 times. ONP's 2008 audited PRC balance sheet shows total net assets worth less than half of what it claimed in its 2008 Form 10-K. Our further due diligence, which included contacting suppliers of comparable assets, indicates that ONP's PRC financial statements further overstate its fixed asset values by approximately five times. Thus the total This report includes photographs of ONP's production equipment and inventory.	1

		sufficiently novel analysis of filings to present strong evidence of the alleged improper activity (e.g. photos, legal documents, new analysis and interpretations)		

Appendix B: Target Firm Response Taxonomy

Coding example of a target firm's response

Target company's response via press release 30th July 2010 (Source: Factiva) – Orient Paper Inc. (ONP) vs. Muddy Waters, LLC

theflyonthewall

Orient Paper denies allegations made by Muddy Waters, LLC

183 Wörter
30 Juni 2010
Theflyonthewall.com
FLYWAL
Englisch
(c) 2010. Theflyonthewall.com. All Rights Reserved.

Orient Paper announced its response to allegations made via a report issued by Muddy Waters, LLC on June 28. Muddy Waters claims that as of the date of the report it had a short position in Orient Paper's stock. Muddy Waters claims in the report that as a result of its short position on the day the report was issued it stands to realize significant gains in the event that the price of Orient Paper's stock declines. Additionally, Muddy Waters states in the report that they make no representation as to the accuracy, timeliness or completeness of the information they provided.

The report issued by Muddy Waters contains many inaccuracies, omissions, fabrications, and unsubstantiated claims with a purpose of having the reader draw a conclusion that "ONP is a fraud" whose "purpose is to raise and misappropriate tens of millions of dollars." Orient Paper categorically denies these allegations and has instructed its legal counsel to contact Muddy Waters and explore all legal options against it for publishing and distributing such a report.

Dokument FLYWAL0020100630e66u0050m

Indicator Variable	**Explanation Example**	**Indicator Value**
Hostile	*Target company's management provides a hostile answer.*	1
Constructive	*Target company's management provides a constructive answer.*	0
Lawsuit	*Target company's management announces a lawsuit or threatens to sue the short seller.*	1
Internal investigations	*Target company's management announces to conduct internal investigations.*	0
Additional disclosures	*Target company's management provides additional disclosures in response to the short-seller's allegations.*	0
Conference call	*Target company's management also holds a conference call in response to the short-seller's allegations.*	0
Press release	*Target company's management issues a press article in response to the short-seller's allegations.*	1
8-K	*Target company's management files a 8-K in response to the short-seller's allegations.*	0

Appendix C: Variable Definitions

Accounting issues	
Revenue	*Indicator variable of value 1 if the target company overstates its revenues, and 0 otherwise. See Taxonomy of coding the short-seller reports for more details in Appendix A.*
Expense	*Indicator variable of value 1 if the target company understates its expenses, and 0 otherwise. See Taxonomy of coding the short-seller reports for more details in Appendix A.*
Income	*Indicator variable of value 1 if the target company overstates its income (e.g., operating income, net income), and 0 otherwise. See Taxonomy of coding the short-seller reports for more details in Appendix A.*
Cash flow	*Indicator variable of value 1 if the target company overstates or misclassifies its cash flow, and 0 otherwise. See Taxonomy of coding the short-seller reports for more details in Appendix A.*
Assets	*Indicator variable of value 1 if the target company overestimates its assets, and 0 otherwise; or if it conducted improper asset recognition, failure to write down the asset or overestimated goodwill. See Taxonomy of coding the short-seller reports for more details in Appendix A.*
Liabilities	*Indicator variable of value 1 if the target company underestimates its liabilities (e.g. off-balance sheet liabilities), and 0 otherwise. See Taxonomy of coding the short-seller reports for more details in Appendix A.*
Non-GAAP	*Indicator variable of value 1 if the target company inadequately uses/discloses Non-GAAP measures (e.g., EBITDA, EBIT, adj. EBITDA, adj. EBIT), and 0 otherwise. See Taxonomy of coding the short-seller reports for more details in Appendix A.*
Audit and internal controls	*Indicator variable of value 1 if the target has a weak auditor, frequent changes of auditors or other internal control issues, and 0 otherwise. See Taxonomy of coding the short-seller reports for more details in Appendix A.*

Disclosure issues	
Incomplete disclosure	*Indicator variable of value 1 if the target company makes vague or inadequate disclosures, and 0 otherwise. See Taxonomy of coding the short-seller reports for more details in Appendix A.*
Errors in disclosure	*Indicator variable of value 1 if the target company makes disclosures that are inconsistent with the law, e.g. fraudulent disclosures, missing documents that are demanded by law/regulation, and 0 otherwise. See Taxonomy of coding the short-seller reports for more details in Appendix A.*

Product or business issues	
Product	*Indicator variable of value 1 if the target company has bad/fake products, and 0 otherwise. See Taxonomy of coding the short-seller reports for more details in Appendix A.*
Business	*Indicator variable of value 1 if the target company has a flawed business model, e.g., inherent unprofitability due to competitive market, related party transactions, missing clients and contracts, production facilities non-existing, and 0 otherwise. See Taxonomy of coding the short-seller reports for more detail in Appendix A.*

Acquisitions and divestitures	*Indicator variable of value 1 if the target company has made poor or improper acquisitions and divestitures, and 0 otherwise. See Taxonomy of coding the short-seller reports for more details in Appendix A.*
Management	*Indicator variable of value 1 if the target company has issues with the management, incl. past fraud participation, frequent changes of top management (CEO, CFO), and 0 otherwise. See Taxonomy of coding the short-seller reports for more detail in Appendix A.*
Securities fraud	*Indicator variable of value 1 if the short-seller alleges material lie or omission in connection with the purchase or sale of a security, insider trading. Filings that included false reports (annual report, quarterly reports), and 0 otherwise. Do they use the word "fraud"? See Taxonomy of coding the short-seller reports for more details in Appendix A.*
New evidence	*Indicator variable of value 1 if the short-seller provides new information not in existing securities filings, or produces sufficiently novel analysis of filings to present strong evidence of the alleged improper activity (e.g. photos, legal documents, new analysis and interpretations), and 0 otherwise. See Taxonomy of coding the short-seller reports for more details in Appendix A.*

Response variables	
Press release	*Indicator variable of value 1 if the target company issues a press release, and 0 otherwise.*
Form 8-K	*Indicator variable of value 1 if the target company issues 8-K filing, and 0 otherwise.*
Conference call	*Indicator variable of value 1 if the target company issues a conference call, and 0 otherwise.*
Denial	*Indicator variable of value 1 if the target company makes a hostile response, incl. insulting the short-seller, and 0 otherwise.*
Hostile	*Indicator variable of value 1 if the target company makes a hostile response, incl. insulting the short-seller.*
Constructive	*Indicator variable of value 1 if the target company makes a constructive response, and 0 otherwise.*
Lawsuit	*Indicator variable of value 1 if the target company makes or threatens to file a lawsuit, and 0 otherwise.*
Internal investigation	*Indicator variable of value 1 if the target company announces to conduct internal investigations, e.g. setting up a special committee, and 0 otherwise*
Additional disclosure	*Indicator variable of value 1 if the target company discloses additional information, and 0 otherwise.*

Outcome variables	
AAER	*Indicator variable of value 1 if the target company has an increase of Accounting and Auditing Enforcement Releases (AAER) after the EVENT_DATE, and 0 otherwise.*
Delisting	*Indicator variable of value 1 if the target company is delisted after the EVENT_DATE, and 0 otherwise.*
Bankruptcy	*Indicator variable of value 1 if the target company goes bankrupt after the EVENT_DATE, and 0 otherwise.*
Acquired	*Indicator variable of value 1 if the target company is acquired after the EVENT_DATE, and 0 otherwise.*
CAR[-1,+1]	*Is the cumulative abnormal return (CAR) over the window (-1/+1) surrounding the activist short seller report disclosure.*

	cumulative abnormal returns are calculated using the market model: $CAR[a,b]_i = \prod_{d=a}^{b}(1 + AR_{id}) - 1$, *where* $CAR[a,b]_i$ *is the cumulative abnormal return for firm i for day a through day b.* AR_{id} *is calculated as* $AR_{id} = r_{id} - \left[\widehat{\alpha_i} + \widehat{\beta_1}RMRF_d + \widehat{\beta_2}SMB_d + \widehat{\beta_3}HML_d + \widehat{\beta_4}UMD_d\right]$, *where* AR_{id} *is the abnormal return for firm i on day d,* r_{id} *is the excess return of the stock i for day d over the one month Treasury Bill rate,* $RMRF_d$ *is the excess market return for day d using the value weighted CRSP index of all firms traded on the NYSE, NASDAQ, and Amex exchanges,* SMB_d, HML_d, *and* UMD_d *are the portfolio returns on the size, book-to-market, and momentum portfolios on day d, and* $\widehat{\alpha_i}$ *and the* $\hat{\beta}$*s are estimated from the equation:* $r_{id} = \alpha_i + \beta_1 RMRF_d + \beta_2 SMB_d + \beta_3 HML_d + \beta_4 UMD_d + \varepsilon_{id}$, *using a pre-event period from event day -252 trading days to event day -20 trading days. Observations with less than 70 days of returns data in the estimation period are dropped. CRSP.*
CAR[+2,+60]	*Is the cumulative abnormal return (CAR) over the window (+2/+60). Firms that are delisted during the post-event window CAR calculate up through the delisting date. CRSP.*
CAR[+2,+252]	*Is the cumulative abnormal return (CAR) over the window (+2/+252). Firms that are delisted during the post-event window CAR calculate up through the delisting date. CRSP*
Severe outcome	*Is an indicator if AAER, delisting, bankruptcy or acquired equals 1.*

Control variables	
Log market cap	*Is the log of the market value of equity at the beginning of the fiscal year in which the short-seller report is published (Compustat, csho*prcc_f).*
BTM	*Is the ratio of the target company's book value of equity to its market value of equity as of the beginning of the fiscal year in which the short-seller's report was published. Compustat, Book/MktCap, where Book is defined as seq-pstk and MktCap as csho*prcc_f.*
Leverage	*Is the ratio of long-term debt to the sum of debt and market value of equity. Compustat, calculated via as (long term debt (dltt)+debt in current liabilities(dlc))/total assets(at).*
Analysts	*Is the log number of equity analysts issuing earnings forecasts for the fiscal quarter in which the short-seller's report is published. Compustat and calculated as log(numan + 1).*
Institutional ownership	*Is the percentage of the target company's stock held by institutional investors as of the beginning of the quarter in which the short-seller's report is published. Thomson Insider.*
Foreign	*Indicator variable of value 1 if the target company is foreign headquartered. Compustat loc is not "USA".*
Litigation risk	*Kim and Skinner (2011). Indicator equal to 1 if primary SIC-codes is in the set (2833:2836, 3570:3577, 3600:3647, 5200:5961, 7370:7374, 8731:8734). Compustat*
Short interest	*Is the percentage of shares outstanding that are shorted prior to the short seller's report publication date. Compustat short_pre/csho/1,000,000.*
Q	*Tobin's Q. Compustat ((Long term debt (dltt)+ debt in current liabilities (dlc) + price times shares outstanding (prc*shrout))/(Long term debt (dltt) +*

	debt in current liabilities (dlc)+ (shareholders' equity (seq) – preferred stock (pstk)).
Dividend yield	*The dividend yield. Compustat (dvp+dvc)/(MktCap+pstk.*
ROA	*Return on Assets. Compustat ibadj/shift(at,1,NA,"lag")?*
Manipulator	*Indicator variable equal to 1 if the M-score is greater than -1.78, and where the M-score is calculated as -4.84 + .920 * dsri + .528 * gmi + .404 * aqi + .892 * sgi + .115 * depi - .172 * sgai + 4.679 * tata - .327 * lvgi (see Beneish 1999 for the calculation of the underlying ratios.) Compustat.*
IPO	*Indicator variable equal to 1 if the report is filed during the first year the company is listed in Compustat.*
Earnings announcement	*Indicator variable of value 1 if the target company's response is within five days of a quarterly earnings announcement date, and 0 otherwise.*
Avg pre-returns	*Cumulative abnormal returns in the (-5/-1) relative to the event date. CRSP.*
Track record	*Track record is defined as in Ljungqvist and Qian (2016) an indicator equal to 1 if the trailing average of announcement returns for the activist's previous short reports is less than zero.*

TABLE 1: Summary statistics for activist short sellers

The sample contains reports from 24 activist short sellers and 319 initial reports on US-listed target firms from 1996 to 2017. The anonymous column indicates if the activist publishes anonymously (Y) or if the reports can be attributed to an identifiable person or firm (N). Fraud allegations are the proportion of reports that allege securities fraud. Company response is the proportion of target companies that respond to the short seller's allegations via press releases, conference calls, or Form 8-K filings. New evidence is the proportion of firm reports that present new evidence not already available in existing securities filings. See Appendix C for variable definitions.

#	Activist short seller	Anon.	# of reports	Fraud allegations	Any responses	New evidence	Mean CAR [-1, +60]
1	Absaroka Capital Management	Y	4	0.75	0.75	1.00	-0.18
2	Alfred Little	Y	6	0.83	0.50	0.83	-0.18
3	Anonymous Analytics	Y	4	0.50	0.75	0.50	-0.01
4	Asensio & Co.	N	24	0.46	0.50	0.00	-0.33
5	Aurelius Value	N	8	0.75	0.75	0.75	-0.27
6	Bleecker Street Research	Y	17	0.59	0.12	0.59	-0.24
7	Bronte Capital	N	14	0.43	0.14	0.00	-0.10
8	Chimin Sang	N	5	0.40	0.20	0.40	-0.16
9	Chinese Company Analyst	N	4	1.00	0.00	0.00	-0.11
10	Citron Research	N	28	0.39	0.32	0.57	-0.22
11	ForensicFactor	Y	2	0.50	0.50	1.00	-0.31
12	GeoInvesting	N	34	0.47	0.35	0.35	-0.24
13	Glaucus Research	N	7	0.29	0.86	0.57	-0.21
14	Gotham City Research	Y	6	0.67	0.83	1.00	-0.24
15	Kerrisdale Capital	N	20	0.25	0.25	0.30	-0.19
16	Muddy Waters	N	14	0.79	0.79	0.93	-0.13
17	Prescience Investment	N	12	0.67	0.50	0.92	-0.07
18	Pump Stopper	N	17	0.82	0.18	0.88	-0.25
19	Richard Pearson	N	39	0.56	0.13	0.54	-0.19
20	Shareholder Watchdog	Y	9	0.33	0.00	0.11	-0.25
21	Spruce Point	N	30	0.63	0.20	0.90	-0.15
22	The Emperor Has No Clothes	Y	3	0.33	0.00	0.67	2.49
23	Viceroy Research	Y	1	0.00	0.00	1.00	-0.09
24	Xuhua	N	11	0.27	0.09	0.27	-0.12
	Total		319	*0.53*	*0.32*	*0.53*	*-0.17*

TABLE 2: Allegations

Panel A: Types and frequency of allegations made in activist short seller reports

Types of allegations for our sample of 319 short seller reports. Appendix A provides detail regarding each classification and sample passages from a coded short seller report.

Allegation Topic	*Mean (Incidence)*
Accounting issues	1.77 (0.65)
Audit and internal control	0.39
Revenues	0.30
Assets	0.28
Income	0.25
Cash flows	0.16
Expenses	0.15
Liabilities	0.13
Non-GAAP	0.11
Disclosure Issues	0.84 (0.62)
Serious errors in disclosure	0.47
Incomplete disclosures	0.37
Business Issues	1.35 (0.86)
Business	0.74
Product	0.34
Acquisitions and divestures	0.28
Management Issues	0.59
Securities Fraud	0.53
New Evidence	0.53
Total	5.62 (1.00)

Panel B: Abnormal returns for new evidence and fraud allegation reports
Statistical significance on the abnormal returns is based on a t-test of the mean difference from zero. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels respectively.

	New evidence	*No new evidence*	*Mean diff.*
CAR [-1,+1]	-0.09***	0.00	-0.09*
CAR [+2,+60]	-0.10***	-0.16***	0.06
CAR [+2,+252]	-0.27***	-0.35***	0.08
CAR [-1,+252]	-0.33***	-0.35***	0.02
	Fraud allegation	*No fraud allegation*	
CAR [-1,+1]	*-0.10****	*0.03*	-0.13*
CAR [+2,+60]	-0.16***	-0.10***	-0.06
CAR [+2,+252]	-0.34***	-0.27***	-0.07
CAR [-1,+252]	-0.39***	-0.27***	-0.12

TABLE 3: Target firm outcomes by response type

This tables relates the firm response type for our sample of 319 short seller reports to severe firm outcomes and cumulative abnormal returns (CARs) over the report announcement (-1/+1), the subsequent three month (+2/+60), year (+2/+252), and overall (-1,+252) windows. See Appendix C for variable definitions. Statistical significance on the abnormal returns is based on a t-test of the mean difference from zero. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels respectively.

		Target firm outcome				Mean CAR			
Target firm response type	*Incidence*	*AAER*	*Delisting*	*Acquired*	*No Severe Outcome*	[-1,+1]	[+2,+60]	[+2,+252]	[-1,+252]
Denial	0.29	0.03	0.28	0.24	0.47	-0.14***	-0.13***	-0.26***	-0.32***
Hostile	0.06	0.00	0.35	0.15	0.50	-0.17***	-0.10	-0.24	-0.30*
Lawsuit	0.06	0.00	0.55	0.10	0.35	-0.18***	-0.17*	-0.32*	-0.38*
Internal investigation	0.05	0.27	0.55	0.10	0.40	-0.27***	-0.21	-0.30	-0.38***
Additional disclosure	0.13	0.05	0.32	0.67	0.41	-0.12*	-0.07	-0.18*	-0.27***
Sell response	0.24	0.07	0.19	0.21	0.57	0.11	-0.15***	-0.32***	-0.28***
Buy response	0.14	0.07	0.24	0.20	0.56	0.18	-0.16***	-0.36*	-0.28
Any response	0.57	0.07	0.27	0.20	0.46	-0.03	-0.14***	-0.32***	-0.34***
No response	0.43	0.08	0.25	0.18	0.50	-0.06	-0.12***	-0.29***	-0.33***
All Reports	*1.00*	*0.08*	*0.26*	*0.19*	*0.48*	*-0.05****	*-0.13****	*-0.31****	*-0.34****

Panel B: Correlations among allegations and responses

This figure shows the Spearman (upper part) and Pearson (lower part) correlations for the allegations and firms' responses based on the sample of N=319. Figures in bold are statistically significant at 1% level.

Correlations table

Variables		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1)	Accounting issues		**0.45**	**0.25**	**0.38**	**0.23**	**0.37**	**0.19**	0.18	0.04	0.17	0.02	0.05	0.18	0.10
(2)	Disclosure issues	**0.47**		**0.20**	**0.48**	**0.39**	**0.37**	**0.21**	0.13	0.03	0.18	0.07	0.10	0.10	0.15
(3)	Business issues	**0.32**	**0.21**		0.17	0.07	**0.25**	0.08	0.03	-0.02	0.09	-0.05	-0.05	-0.08	0.04
(4)	Management issues	**0.37**	**0.47**	0.16		**0.47**	**0.39**	0.16	0.10	0.05	0.11	0.06	0.06	0.07	0.11
(5)	Securities fraud	**0.25**	**0.38**	0.07	**0.47**		**0.27**	0.15	0.09	-0.01	0.11	0.11	0.14	0.03	0.06
(6)	New evidence	**0.36**	**0.37**	**0.25**	**0.39**	**0.27**		0.18	0.09	0.10	**0.18**	0.11	0.06	0.06	0.06
(7)	Press release	0.17	**0.21**	0.07	0.16	0.15	0.18		**0.33**	**0.28**	**0.91**	**0.35**	**0.35**	**0.33**	**0.55**
(8)	8K	0.18	0.14	0.03	0.10	0.09	0.09	**0.33**		0.07	**0.35**	**0.33**	**0.44**	0.07	0.11
(9)	Conference call	0.03	0.03	-0.03	0.05	-0.01	0.10	**0.28**	0.07		**0.36**	0.18	0.12	0.15	0.47
(10)	Denial	0.15	0.18	0.09	0.11	0.11	**0.18**	**0.91**	**0.35**	**0.36**		**0.41**	**0.41**	**0.25**	**0.54**
(11)	Hostile	0.01	0.07	-0.05	0.06	0.11	0.11	**0.35**	**0.33**	0.18	**0.41**		**0.79**	0.00	-0.02
(12)	Lawsuit	0.04	0.10	-0.05	0.06	0.14	0.06	**0.35**	**0.44**	0.12	**0.41**	**0.79**		0.13	0.06
(13)	Internal investigation	0.15	0.10	-0.08	0.07	0.03	0.06	**0.33**	0.07	0.15	**0.25**	0.00	0.13		0.18
(14)	Additional disclosures	0.07	0.15	0.04	0.11	0.06	0.06	**0.55**	0.11	**0.47**	**0.54**	-0.02	0.06	0.18	

TABLE 4: Descriptive statistics for target firms

This tables provides an overview of the target firm characteristics (N=319) with comparison to the full Compustat universe (N=16,283). See Appendix C for variable definitions.

Firm characteristics	*Mean*	*Std. dev.*	*Lower quartile*	*Median*	*Upper quartile*	*Mean of Compustat/CRSP universe*	*Mean diff. - p-value*
Market cap	1,966.61	5,793.66	190.29	496.29	1,275.27	*3,846.55*	*0.00*
BTM	0.46	0.67	0.15	0.31	0.54	*0.64*	*0.01*
Leverage	0.15	0.19	0.00	0.06	0.26	*0.22*	*0.00*
Analysts (log)	1.42	0.99	0.69	1.61	2.20	*1.23*	*0.00*
Institutional ownership	0.34	0.34	0.01	0.22	0.60	*0.33*	*0.13*
Foreign	0.41	0.49	0.00	0.00	1.00	*0.13*	*0.00*
Litigation risk	0.34	0.48	0.00	0.00	1.00	*0.23*	*0.00*
Short interest	0.07	0.07	0.01	0.04	0.10	*0.02*	*0.00*
Q	4.00	4.17	1.55	2.48	4.39	*2.47*	*0.00*
Dividend yield	0.01	0.02	0.00	0.00	0.00	*0.02*	*0.00*
ROA	-0.08	0.38	-0.13	0.03	0.14	*-0.04*	*0.01*
Manipulator	0.29	0.45	0.00	0.00	1.00	*0.16*	*0.00*
Pre insider purchases	0.11	0.31	0.00	0.00	0.00	-	-
Pre insider sales	0.72	0.45	0.00	1.00	1.00	-	-
Post insider purchases	0.14	0.35	0.00	0.00	0.00	-	-
Post insider sales	0.24	0.42	0.00	0.00	0.00	-	-
Earnings announcement	0.14	0.35	0.00	0.00	0.00	-	-
Avg pre-returns	0.00	0.34	-0.10	-0.04	0.02	-	-
CAR [-1,+1]	-0.04	0.64	-0.15	-0.06	0.00	-	-
CAR [+2,+60]	-0.13	0.32	-0.32	-0.14	0.02	-	-
CAR [+2,+252]	-0.31	0.48	-0.68	-0.41	0.00	-	-

TABLE 5: Probit analysis of being targeted

This table reports a probit regression of the probability of being targeted by an activist short seller in our sample. The dependent variable is an indicator variable equal to one if an activist short seller targets the firm-year observation, based on the prior year end realization of the financial variables. See Appendix C for variable definitions. The marginal probability column indicates the change in probability of targeting induced by a one-standard deviation change in the values of the covariate from their respective sample averages, *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels respectively.

Dependent Variable: Indicator of being targeted	*Coefficient*	*Marg. Prob.*
Log market cap	0.007	*0.3*
BTM	-0.088**	*-3.6*
Q	0.019***	*0.8*
ROA	-0.164**	*-6.7*
Leverage	-0.442***	*-18.1*
Dividend yield	-2.856***	*-117.1*
Analysts	0.021	*0.8*
Institutional ownership	0.080	*3.3*
Manipulator	0.177***	*8.7*
IPO	0.281***	*16.9*
Litigation risk	0.012	*0.5*
Foreign	0.538***	*42.5*
Short interest	3.458***	*141.8*
N	148,776	
Pseudo-R2	0.101	
Percent targeted	0.22%	

TABLE 6: Heckit analysis of response dummy and types
See Appendix C for variable definitions.

Panel A: Heckit Analyses on response yes/no				
	2-step Model - Probit			
Dependent Variables:	*Response Yes/No*	*Response Yes/No*	*Response Yes/No*	*Response Yes/No*
Model:	(1)	(2)	(3)	(4)
Log market cap	0.168**	0.167**	0.187***	0.202***
BTM	0.005	-0.013	0.016	0.017
Analysts	-0.128	-0.120	-0.057	-0.076
Institutional ownership	0.079	-0.098	-0.084	-0.110
Manipulator	0.463**	0.444**	0.459**	0.416**
IPO	0.197	0.171	0.310	0.280
Litigation risk	-0.199	-0.222	-0.189	-0.205
Foreign	0.316	0.257	0.338	0.270
Short interest	2.514	2.447	2.494	2.486
Earnings announcement	-0.142	-0.157	-0.264	-0.236
Avg pre-returns	-1.367**	-1.439**	-0.969	-0.934
Securities fraud	0.294*	-	-	0.162
New evidence	-	0.465***	-	0.382**
CAR[-1,+1]	-	-	-2.459***	-2.333***
IMR	*Yes*	*Yes*	*Yes*	*Yes*
N	319	319	319	319

Panel B: Heckit Analyses on response types							
	2-step Model - Probit						
Dependent Variables:	*Denial Yes/No*	*Hostile Yes/No*	*Lawsuit Yes/No*	*Internal investigation Yes/No*	*Additional disclosures Yes/No*	*Insider Purchases Yes/No*	*Insider Sales Yes/No*
Model:	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Log market cap	0.185**	-0.077	-0.105	0.203	0.107	0.000	0.094
BTM	0.008	-0.225	-0.098	0.422*	-0.199	-0.189	-0.018
Analysts	-0.141	-0.096	-0.093	0.314	-0.061	0.089	-0.036
Institutional ownership	0.047	-0.028	0.121	-0.464	0.321	-1.006**	0.189
Manipulator	0.433**	0.122	0.079	-0.522	0.351	0.137	0.094
IPO	0.090	0.047	0.350	0.901*	-0.234	-0.458	-0.132
Litigation risk	-0.188	-0.012	-0.058	-0.705*	-0.058	0.059	0.241
Foreign	0.198	0.367	0.328	1.210**	0.608**	-0.428*	0.113
Short interest	1.204	3.934*	1.910	3.118	2.247	0.730	-0.976
Earnings announcement	-0.392	-0.731	-0.767	-1.143*	-0.058	-0.437	0.117
Avg pre-returns	-1.104*	-2.522**	-2.648**	-0.342	-1.026	0.276	-0.813
Securities fraud	0.093	0.314	0.433	-0.259	0.130	-0.032	-0.114
New evidence	0.418**	0.461	0.171	0.162	0.045	0.384*	-0.088
CAR[-1,+1]	-1.964***	-1.241	-1.395*	-4.741***	-0.644	0.295	1.760***
IMR	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
N	319	319	319	319	319	319	319

TABLE 7: Association of outcomes with allegations and target firm responses
See Appendix C for variable definitions.

Panel A: Regression analyses - Allegations						
	Probit					
Dependent Variables:	*Delisted*		*AAER*		*Acquired*	
Model:	(1)	*Marg. Prob.*	(2)	*Marg. Prob.*	(3)	*Marg. Prob.*
Accounting issues	0.31	*0.08*	0.16	*0.01*	-0.10	*-0.02*
Disclosure issues	0.06	*0.02*	-0.14	*-0.01*	0.17	*0.03*
Business issues	-0.73**	*-0.24*	-0.68*	*-0.06*	-0.33	*-0.08*
Management issues	-0.27	*-0.08*	0.37	*0.02*	0.02	*0.00*
Securities fraud	0.15	*0.04*	-0.33	*-0.02*	-0.62**	*-0.14*
New evidence	-0.28	*-0.08*	-0.37	*-0.02*	-0.07	*-0.01*
CAR *[-1,+1]*	-0.64	*-0.18*	-1.84*	*-0.10*	-0.18	*-0.04*
Log market cap	-0.28**	*-0.08*	0.18	*0.01*	-0.01	*0.00*
BTM	-0.22	*-0.06*	-0.03	*0.00*	0.13	*0.03*
Analysts	-0.02	*-0.01*	-0.55**	*-0.03*	0.57***	*0.12*
Institutional ownership	-0.58	*-0.16*	0.19	*0.01*	0.05	*0.01*
Manipulator	0.65**	*0.20*	0.09	*0.00*	0.17	*0.04*
IPO	0.67**	*0.21*	1.00**	*0.11*	0.62*	*0.16*
Litigation risk	-0.40*	*-0.10*	0.00	*0.00*	0.32	*0.07*
Foreign	0.73**	*0.21*	0.34	*0.02*	0.46	*0.10*
Short interest	5.24**	*1.43*	8.14**	*0.44*	0.18	*0.04*
Earnings announcement	0.17	*0.05*	0.04	*0.00*	-0.17	*-0.03*
Avg pre-returns	0.09*	*0.03*	-1.47	*-0.08*	0.00	*0.00*
IMR	*Yes*		*Yes*		*Yes*	
N	319		319		319	

Panel B: Regression analyses - Responses						
	Probit					
Dependent Variables:	*Delisted*		*AAER*		*Acquired*	
Model:	(1)	*Marg. Prob.*	(2)	*Marg. Prob.*	(3)	*Marg. Prob.*
Denial	-0.38	*-0.10*	-1.41*	*-0.01*	0.54*	*0.13*
Hostile	-4.99	*-0.30*	-3.54	*-0.01*	0.06	*0.01*
Lawsuit	5.55	*0.88*	-5.23	*-0.01*	-0.74	*-0.11*
Internal investigations	0.47	*0.15*	1.30*	*0.08*	-0.94***	*-0.12*
Additional disclosures	0.29	*0.09*	0.41	*0.01*	-0.08	*-0.02*
Buy response	-0.07	*-0.02*	0.20	*0.00*	0.08	*0.02*
Sell response	-0.14	*-0.04*	-0.04	*0.00*	0.00	*0.00*
CAR *[-1,+1]*	-0.40	*-0.11*	-1.58	*-0.02*	-0.20	*-0.04*
Log market cap	-0.26**	*-0.07*	0.21	*0.00*	-0.04	*-0.01*
BTM	-0.24	*-0.07*	-0.02	*0.00*	0.15	*0.03*
Analysts	-0.06	*-0.02*	-0.76***	*-0.01*	0.55***	*0.12*
Institutional ownership	-0.55	*-0.16*	0.47	*0.01*	0.15	*0.03*
Manipulator	0.61**	*0.19*	0.17	*0.00*	0.04	*0.01*
IPO	0.56*	*0.18*	1.10**	*0.04*	0.65*	*0.18*
Litigation risk	-0.30	*-0.08*	0.05	*0.00*	0.35	*0.08*
Foreign	0.79***	*0.23*	0.36	*0.01*	0.46	*0.11*
Short interest	5.97***	*1.70*	8.76**	*0.11*	0.96	*0.21*
Earnings announcement	0.24	*0.07*	-0.06	*0.00*	-0.08	*-0.02*
Avg pre-returns	0.01	*0.00*	-1.89	*-0.02*	0.10	*0.02*
IMR	*Yes*		*Yes*		*Yes*	
N	319		319		319	