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The fragile returns to investor relations: evidence from a period of declining market confidence

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The fragile returns to investor relations: evidence from a period of declining market confidence

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This paper assesses the capital market effects of investor relations activities during a period of high-profile corporate scandals. We find no support for the prediction that an established reputation for effective investor relations helped shield US firms from a perceived decline in management credibility and financial reporting integrity associated with Enron and related scandals. On the contrary, tests reveal that firms with an established reputation for superior investor relations activities fared worse on a series of market-related factors. Results suggest that distrust in corporate reporting practices spilled over to investor relations practices, and that best practice investor relations programmes developed during normal market conditions offered little protection from systemic declines in investor confidence arising from the corporate misdeeds of other firms.

Keywords: investor relations; financial reporting credibility; accounting scandals; market reaction

1. Introduction

The process of communication between companies and external audiences has evolved significantly. Amongst these changes, radical development in investor relations has been observed, such that the function has evolved into a full-time professional operation in many firms (Marston and Straker 2001, Marston 2008). High-profile accounting and corporate governance scandals such as Enron, coupled with the legal and regulatory responses to these scandals, raise important questions about the role played by corporate communications generally and investor relations in particular (Allen 2002, Argenti *et al.* 2005). Beginning with Enron, the wave of high-profile accounting and corporate governance scandals that engulfed US financial markets during 2001 and 2002 placed corporate credibility under the microscope and led to both a crisis in investor confidence and increased investor scepticism about capital market valuations (Allen

2002, Bratton 2002, Asthana *et al.* 2008). Against this backdrop, we explore the role of investor relations in helping to maintain the trust and confidence of investors. Our empirical tests contrast a sample of 122 companies recognised for their superior investor relations practices by the US *Investor Relations Magazine* Awards (IRMA) with a matched control sample of non-IRMA firms.

Our tests seek to distinguish empirically between the following two competing views of investor relations. Proponents of investor relations argue that effective investor relations have a positive impact on firm share price because more informative, timely and accurate communication helps improve the reliability of investors' valuation models and build corporate reputation (Brennan and Tamarowski 2000, Metzker 2002, Bushee and Miller 2010, Jong *et al.* 2007, Agarwal *et al.* 2008). If this is the case then firms with high-quality investor relations are expected to have experienced a less pronounced decline in investor confidence between October 2001 and September 2002 (hereinafter referred to as the scandal period) relative to our control sample. The alternative view of investor relations is that such activities merely involve a sophisticated repackaging of available information and therefore have little impact on investor confidence (Farragher *et al.* 1994). Indeed, heightened market scepticism over the perceived lack of management credibility could have led cynical investors to view investor relations as little more than a corporate marketing device designed to exaggerate stocks' prospects and put a positive spin on reported performance. From this viewpoint, firms associated with active investor relations programmes may have fared little better (or even worse) during this scandal period relative to our control sample.

Empirical tests compare a series of market-related variables and outcomes for IRMA and non-IRMA firms during a window spanning the period October 2001 through September 2002. Our first set of tests examines the stock price reaction of IRMA and control firms to Enron-related news of financial reporting failures. The aim of these contagion tests is to assess how market participants viewed firms with active investor relations programmes relative to firms with less established communication records. Results provide no support for the prediction that an established reputation for effective investor relations helped shield firms from the systematic decline in investor confidence experienced during this period. On the contrary, results indicate that firms with active investor relations programmes suffered larger stock price falls relative to firms in the control sample. In our second set of tests we examine relative changes over the pre- to post-scandal period in a series of variables indentified by Bushee and Miller (2010) as being influenced positively by investor relations activity. The variables include press coverage, trading volume and analyst coverage. In so far as a reputation for high-quality investor relations serves to insulate firms against a general decline in investor sentiment, IRMA firms are expected to have experienced less negative shocks to these variables over the scandal period compared with the non-IRMA control sample. However, results of our differences-in-differences tests suggest that IRMA firms experienced a more pronounced decline in press coverage, trading volume and analyst coverage relative to their non-IRMA counterparts. Collectively, these results cast doubt on the positive role that effective investor relations is predicted to play in upholding trust and confidence of investors, at least during turbulent market conditions. Our findings also suggest that the reputation of the investor relations industry may have been tarnished during this period.

Our study contributes to the small body of research investigating the capital market effects of investor relations. Both Bushee and Miller (2010) and Agarwal *et al.* (2008) document capital market benefits arising from increased investor relations activities. On the other hand, Farragher *et al.* (1994) fail to find any significant relation between the quality of investor relations and the accuracy of analysts' forecasts. To the extent that investor relations departments strive to enhance communication in an effort to build trust between firms and the market, one might expect the role and effect of investor relations to be particularly important during a period of deteriorating market confidence in the credibility and integrity of corporate America. While prior research explores the role of investor relations under regular market conditions, ours is the first study to consider the

costs and benefits of investor relations activities when the general standards of corporate honesty are called into question. On balance our results suggest that during periods of heightened market scepticism concerning accounting quality and management credibility, a reputation for superior investor relations performance provides no guarantee that a firm will be insulated from declines in investor confidence arising from the corporate misdeeds of other firms. In fact, there is some evidence that distrust in corporate reporting practices led to heightened scepticism about investor relations practices in general.

The remainder of the paper is organised as follows. The next section reviews the extant literature. Section 3 develops our research question. Section 4 describes the measure of investor relations quality and Section 5 provides details of our research design. Section 6 describes the sample selection process and presents descriptive statistics. Empirical results and additional robustness tests are presented in Section 7. Section 8 concludes.

2.   Prior research

Theoretical support linking investor relations with improved valuation comes predominately from the disclosure literature. In Diamond and Verrecchia (1991), adverse selection costs of trading reduce stock liquidity, thereby depressing stock price. Effective investor relations in the form of superior disclosure is predicted to help reduce adverse selection problems, thereby improving stock liquidity and raising stock price.[1] Theory also suggests that investor relations can help boost stock prices when investors have limited awareness or incomplete information. In Merton (1987), risk-averse investors avoid stocks about which they know nothing. By improving investor awareness of a firm, the investor relations function can help broaden the investor base and hence increase stock price (through improved risk sharing).

Agarwal *et al.* (2008) examine the market value of investor relations activity using *Investor Relations Magazine* Investor Relations Awards nominees as a proxy for investor relations quality. Consistent with effective investor relations reducing risks associated with high information asymmetry, they document that firms in receipt of a nomination earn superior abnormal returns and enjoy increased stock liquidity during the post-award period. In related work, Bushee and Miller (2010) examine 210 small and mid-cap US firms that hired investor relations consultants to develop their communication strategy. Consistent with the predicted benefits of investor relations, significant increases in corporate disclosures, media coverage, analyst following and institutional ownership are detected following the decision to hire an investor relations professional. Their findings are consistent with Lang and Lundholm (1996), Francis *et al.* (1997), Bushee and Noe (2000) and Chang *et al.* (2008). Bushee and Miller (2010) also report statistically significant pricing gains (measured as a decrease in the book-to-price ratio) for firms hiring the services of an investor relations consultant. In an Australian context, Chang *et al.* (2008) use a web-based survey to rate firms' investor relations practices and find that firms engaging in continuous, high-quality disclosure benefit from lower information asymmetry and smaller information asymmetry shocks around earnings announcements.

Survey research conducted by Marston (2008) among the top 500 UK companies finds that although the creation of shareholder value is one of the most important issues discussed at investor relations meetings, investor relations professionals also highlight the importance of ensuring securities are fairly priced. Marston (2004) documents similar results among the top 500 European companies where she finds agreement amongst investor relations professionals that the activity helps reduce share price volatility, improve liquidity and lower the cost of capital. The survey also highlighted the importance investor relations professionals place on investor meetings that provide management with an opportunity to demonstrate the quality of the executive team and to receive feedback from analysts and investors. Argenti *et al.* (2005) conducted 50

interviews with prominent CEOs, CFOs and various investor relations professionals and found consensus that investor relations should be seen as an integral and valuable part of firms' corporate strategy.

Nevertheless, many market participants remain sceptical about the practical value of corporate investor relations programmes. In a survey of over 1000 members of the Association for Investment Management and Research (now the CFA Institute), only 31% of respondents considered investor relations to be a 'very or extremely important' source of information, while 62% thought the quality of information emanating from corporate investor relations departments was average to poor. One explanation for this unfavourable view is that investor relations officers have insufficient access to top management. As Rich Wyler (CFA Institute spokesman) points out, '[M]ost IR officers are middle-level managers, and the 28 percent who are corporate officers are frequently left out of the corporate information flow in a way that general counsel would never be' (Connelly 2005, p. 44). Further, as one analyst commented, '[A]lthough not universally true, most corporate investor relations programs are increasingly focusing on . . . promoting only the positive aspects of the corporate story' (IRMA Report 2002, p. 11).

3. Research question and setting

Prior research suggests that investment in investor relations can generate positive returns for firms during non-crisis periods. We aim to extend existing research in this area by testing whether these returns are preserved when corporate credibility is called into question.[2] In particular, we seek evidence on the link between the perceived quality of firms' investor relations activities and market behaviour during a period of heightened investor scepticism over accounting quality and management credibility. Our decision to focus on a period of increased investor scepticism is motivated by Brennan and Tamarowski's conjecture (2000, p. 37) that the reputation benefits associated with an effective investor relations strategy are likely to be particularly pronounced during periods when corporate credibility is called into question.

Between October 2001 and September 2002, the financial reporting atmosphere in the USA was contaminated with suspicion in response to a series of accounting scandals. In addition to spectacular reporting failures at Enron, Global Crossing, Tyco and WorldCom, this period in US financial reporting history witnessed record numbers of firms restating previously published results following discovery of material reporting errors and irregularities (Gleason *et al.* 2008). Further, as Gleason *et al.* (2008) demonstrate, the costs associated with these accounting failures were not confined to scandal firms: loss of investor confidence in the integrity of financial reporting and in management credibility more generally was widespread. This window therefore provides an interesting experimental setting in which to assess the reputational impact of investor relations when confidence in the honesty of management is subject to close scrutiny.[3]

The precise impact of investor relations during our test period is difficult to predict *ex ante*. If the role of investor relations is to minimise investor risk by providing corporate information that is clear, understandable and credible, and if such information risks are not fully diversifiable then more effective investor relations can lower perceived risk (and ultimately firms' cost of capital). Investor relations proponents, therefore, suggest that a communication strategy based on timely, transparent and unbiased reporting helps build trust and maintain management credibility (Brennan and Tamarowski 2000, Bushee and Miller 2010). According to this view one would expect firms with a reputation for high-quality investor relations to have been viewed with less suspicion by market participants, resulting in superior market performance during our event period relative to firms with less effective investor relations programmes.

An alternative view is that the accounting scandals occurring during this period served to undermine the credibility of corporate communications activities generally, and investor relations

practices in particular (Holmes Report 2002). Survey and anecdotal evidence provide some support for this view (IRMA Report 2002, 2003). For example, 27% (21%) of respondents to the 2003 (2002) IRMA survey indicated that they had formed a more negative view of investor relations during 2002 (2001). As one senior sell-side analyst commented, '[I] am tired of the shameless promotionalism [*sic*] and outright lies – investor disinformation is perhaps a more appropriate term than investor relations' (IRMA Report 2002, p. 11).[4] Under such conditions, cynical investors may be more inclined to view investor relations as a corporate marketing device designed to exaggerate stocks' prospects and put a positive spin on reported performance. Rather than being reassured during this period by the presence of a prominent investor relations programme, increasingly sceptical investors may have associated investor relations activities with excessive corporate spin. Accordingly, firms with high-profile investor relations activities may have suffered similar or even disproportionately greater reputation losses during 2001 and 2002 compared to firms with no track record of investor relations activity.

A third possibility is that investors' perceptions of corporate credibility are independent of investor relations activities, in which case the capital market costs imposed on firms during our test period will be unrelated to investor relations quality. In the absence of clear theoretical and practical guidance on this issue, the link between firms' investor relations activities and the market's assessment of managerial credibility is an empirical issue on which our paper seeks evidence.

4. Measuring investor relations quality

We measure investor relations quality using survey data obtained by the IRMA over the period 1996 through 2001. Beginning in 1996, the IRMA has published an annual report that seeks to 'track changes in the investor relations industry, assess investors' information needs, and draw attention to companies that have distinguished themselves through their investor relations performance' (IRMA Report 2002, p. 3). Each year's report presents results of an extensive survey of investors' perceptions of corporate investor relations practices. Further details of the IRMA reports are summarised in an Appendix.

Previous empirical studies of disclosure quality have typically relied on Association for Investment Management and Research (AIMR) surveys as a basis for scoring firms on their investor relations performance (e.g. Farragher *et al.* 1994, Lang and Lundholm 1996, Bushee and Noe 2000). However, the AIMR discontinued its disclosure rankings in 1997 after ranking fiscal year 1995. The IRMA data used in this study offers several advantages over the AIMR data.[5] First, the IRMA survey respondents are allowed an unrestricted choice of firms from which to select, whereas the AIMR data were tightly restricted to certain industries (as well as to larger firms within a chosen industry). Second, because the IRMA reports classify investor relations effectiveness within size categories, we are able to investigate perceived investor relations quality controlling for size effects. Finally, the IRMA survey polls the views of both investment professionals and retail investors. Given the growth in equity ownership by retail investors in the USA (Investment Company Institute and the Securities Industry Association 2005), effective communication with this group of shareholders is becoming an increasingly important component of firms' investor relations strategy that was overlooked by the AIMR data.

5. Research design

The failure of Enron provides a unique opportunity to investigate whether investor relations reputation affects capital market outcomes. Two complementary approaches are used to investigate the link between investor relations performance and the extent of the capital market costs imposed on US firms during 2001 and 2002. First, we test whether stock market contagion effects associated

with news of financial reporting failures varied as a function of investor relations performance. Second, we test for abnormal changes over the pre- and post-scandal periods in a range of firm-level variables predicted to be associated with investor confidence. Both approaches employ a matched-sample design to control for factors that might otherwise be correlated with investor relations quality. Our control sample consists of firms that do not feature in the 1996–2001 IRMA research reports (referred to as non-IRMA firms). Details of both approaches are outlined below.

5.1   *Contagion tests*

5.1.1   *Univariate analysis*

As a preliminary step we test whether the stock price reaction to news of financial reporting scandals varied as a function of non-scandal firms' perceived investor relations quality, before attempting to control for extraneous factors.

Prior research on stock price contagion documents significant market reactions for non-announcing firms to news of accounting restatements (Xu *et al.* 2006, Gleason *et al.* 2008), bankruptcy filings (Lang and Stulz 1992, Ferris *et al.* 1997) and the Enron collapse (Callen and Morel 2003). If effective investor relations helps preserve management credibility in times of heightened market concerns about financial reporting quality then high-quality investor relations firms are expected to have suffered significantly less negative contagion effects around key event dates compared to less aggressive investor relations firms. Conversely, if the systemic decline in market confidence concerning financial reporting practices and management integrity also tainted investors' perceptions of corporate investor relations generally, then proactive investor relations firms may have experienced similar or even greater contagion effects as investors reassessed the implications of current and past disclosures for firm performance and value.

The period preceding enactment of the Sarbanes–Oxley Act (SOX) in 2002 provides a related setting in which to test the relation between investor relations quality and the capital market. SOX was introduced specifically to address problems associated with Enron and related scandals.[6] However, confidence fluctuated over whether SOX would be enacted, providing an opportunity to assess the faith market participants placed in investor relations (Jain and Rezaee 2006). More specifically, in so far as effective investor relations firms were already perceived to be delivering credible information to the market, lower quality investor relations firms are expected to have been penalised more heavily by the market in response to unfavourable events that decreased the Act's perceived probability of enactment.

Prior research documents a series of events associated with Enron and the development of SOX that resulted in systemic capital market effects. Our primary analysis focuses on eight key event dates in 2001 and 2002 that prior research identifies as having generated the largest market-wide effects.[7] Three-day event windows centred on each of these eight dates are constructed. Further details of our event dates and associated announcement windows are summarised in Table 1.

We examine the average stock price reaction of IRMA and matched (non-IRMA) firms to these eight events. Non-IRMA firms are matched on industry, size and book-to-market to be comparable with IRMA firms in terms of risk. (See Section 6 for further details of the matching procedure employed.) For each event window we compute the average abnormal return (*AAR*) as follows:[8]

$$AAR_i = \frac{1}{n} \sum_{j=1}^{n} \frac{1}{d_i} \sum_{t=1}^{d_i} (R^I_{jti} - R^N_{jti}) \tag{1}$$

Table 1. Details of short window event dates.

Event	News date	Study	Detail	Event window
Event 1	8 November 2001	Chaney and Philipich (2002), Doogar *et al.* (2007)	Enron restates its financial statements for the previous five years and the SEC requested documents from Andersen.	7–11 November 2001
Event 2	12 December 2001	Chaney and Philipich (2002), Rauterkus and Song (2005), Doogar *et al.* (2007)	Andersen's CEO admits at a Congressional testimony Andersen made an error.	11–13 December 2001
Event 3	10 January 2002	Chaney and Philipich (2002), Doogar *et al.* (2007), Asthana *et al.* (2008)	Andersen notified the SEC, the Department of Justice and Congress that it had shredded Enron-related audit-working papers.	9–11 January 2002
Event 4	2–4 February 2002	Chaney and Philipich (2002), Rauterkus and Song (2005), Asthana *et al.* (2008)	Andersen announces creation of an independent oversight board, plus release of the Powers Report detailing extensive problems in the audit of Enron and reveals that the national office of Andersen was aware of these problems.	1–5 February 2002
Event 5	14 March 2002	Rauterkus and Song (2005), Krishnamurthy *et al.* (2006), Doogar *et al.* (2007)	US federal prosecutors charged Andersen with a single count of obstruction of justice.	13–15 March 2002
Event 6	20 June 2002	Jain and Rezaee (2006)	SEC proposed creation of a nine-member Public Company Accounting Oversight Board to oversee the accounting profession.	19–21 June 2002
Event 7	9 July 2002	Jain and Rezaee (2006), Zhang (2007), Li *et al.* (2008)	President's Wall Street speech: President Bush makes proposal for Securities Law Reform calling for new ethic of personal responsibility in the business community. Through 8–12 July 2002, Senate considers S. 2673. On 10 July the Senate passes amendment to strengthen criminal penalties.	8–10 July 2002
Event 8	19 July 2002	Jain and Rezaee (2006), Zhang (2007)	Uncertainties voiced in a Conference Committee meeting regarding the form, content and enactment of SOX.	18–22 July 2002

Notes:
a. The table presents the eight events we have identified from prior literature, related to the Enron and Andersen debacle and legislative events related to the eventual passage of the SOX Act, suggested to have the biggest market reaction.
b. Three-day event windows centred on each of the eight identified dates are constructed.

where n is the number of firms in the sample, t represents an event day, d_i is the number of days in event period i, R_{jti} is firm j's day t stock return in event period i, R^I represents returns for firms in the IRMA sample, and R^N are returns for firms in the non-IRMA sample. We also examine the aggregate average abnormal return (*TAAR*) computed across all eight events:[9]

$$TAAR = \frac{\sum_{i=1}^{8} AAR_i}{8}. \tag{2}$$

AAR and *TAAR* can be viewed as the pay-off from a hedge-return strategy that involves going long in IRMA firms and short in matched non-IRMA firms. If investor relations served to maintain firms' reputation during this period, the mean difference in raw returns between IRMA and non-IRMA firms over the event windows will be positive. Alternatively, differences will be negative if distrust in corporate reporting practices spilled over to firms with active investor relations programmes.

5.1.2   *Multivariate tests*

As a second step, we explore the cross-sectional relation between event-related stock returns and investor relations quality after controlling for other firm-level factors that might influence stock return reactions to these events. One such factor is auditor reputation. While the accounting scandals clearly reduced confidence in the auditing profession, it is possible that firms audited by Andersen were hit harder by the accounting scandals compared to firms audited by other firms (Callen and Morel 2003, Asthana *et al.* 2008). To control for this possibility, we include an indicator variable for Andersen clients. Other potential risk factors that might explain differences in returns include size, book-to-market, firm profitability, sales growth and leverage (Fama and French 1995, Bushee and Noe 2000). Finally, we also control for industry membership in case contagion effects were more pronounced in certain sectors. Accordingly, we estimate the following regression for each event i:

$$\begin{aligned} CR_{ij} = &\alpha_i + \beta_{1i}IR_j + \beta_{2i}AA_j + \beta_{3i}SIZE_j + \beta_{4i}BTM_j + \beta_{5i}ROA_j + \beta_{6i}SG_j + \beta_{7i}LEV_j \\ &+ \beta_{8i}IND\_MANF_j + \beta_{9i}IND\_WHL_j + \beta_{10i}IND\_SERV_j + \varepsilon_{ij}. \end{aligned} \tag{3}$$

The dependent variable (*CR*) is firm j's three-day cumulative return (centred on the announcement day) for event i: $CR_{ij} = \sum_{t=-1}^{t=1} R_{jti}$. Definitions for explanatory variables are as follows: *IR* is an indicator variable taking the value of one if the firm is from the IRMA sample and zero otherwise; *AA* is an indicator variable taking the value of one if the firm is audited by Andersen and zero otherwise; *SIZE* is the natural logarithm of the market value of equity (Lang and Lundholm 1996); *BTM* is the book value to price ratio (Bushee and Noe 2000); *ROA* represents operating income after depreciation (Compustat DATA178) scaled by total assets; *SG* is sales growth (Compustat DATA12) (Bushee and Noe 2000); *LEV* is leverage, defined as the ratio of long-term debt to total assets (Bushee and Noe 2000), and *IND_MANF*, *IND_WHL* and *IND_SERV* are indicator variables representing the Manufacturing, Wholesale and Services industries, respectively.[10] All explanatory variables are measured immediately prior to the start of our event period. Although we use a matched pairs design in the univariate analysis, Equation (3) is estimated on a pooled basis. Failure to control for the matched pairs structure of the data is expected to reduce the power of our multivariate tests.

One limitation of estimating Equation (3) by OLS is the possibility of producing biased standard errors for coefficient estimates when there is cross-sectional correlation and

heteroscedasticity in the residuals. Cross-sectional correlation is particularly likely in our setting since our eight news events were expected to impact all firms in the market at the same time. To address these problems we adopt the estimation procedure proposed by Sefcik and Thompson (1986) which uses portfolios constructed by weighting observations to account for cross-sectional correlation and heteroscedasticity. The method involves constructing P portfolios, where P is the number of intercepts and explanatory variables in Equation (3). Returns for each portfolio on day t are computed as

$$R_t^p = W_p^I R_t \tag{4}$$

where R_t^p is the return for portfolio p on day t, R_t is an $N \times 1$ vector of individual firms' returns on day t (N is the number of firms), and W_p^I is a $1 \times N$ vector of weights for portfolio p. The vector weights are from the following matrix:

$$W = \begin{bmatrix} W_1^I \\ \vdots \\ W_p^I \end{bmatrix} = (X^I(X))^{-1} X^I \tag{5}$$

where X is an $N \times P$ matrix. Each of the rows in matrix W is a unique set of portfolio weights corresponding to an explanatory variable that are then used in Equation (4) to compute portfolio returns. The resulting portfolio daily returns are then regressed on the market return and event variables. Sefcik and Thompson (1986) show that with appropriate selection of portfolio weights, estimates of portfolio abnormal returns are identical to coefficient estimates from cross-sectional regressions. The weighting procedure accounts for potential collinearities among firm characteristics and provides an opportunity to evaluate the relative importance of different firm characteristics in explaining the market reaction to our eight news events.[11]

5.2 *Investment viability and analysts' earnings forecasts tests*

Prior research documents a range of market-related benefits associated with informative disclosure practices including greater press and analyst coverage, more accurate analyst earnings forecasts, lower book-to-price ratios, less dispersion among individual analyst forecasts, lower volatility in forecast revisions and lower volatility in returns (Bushee and Noe 2000, Bushee and Miller 2010). Higher trading volume, press coverage and analyst following are indicative of greater interest in the stock. Improved accuracy of analyst forecasts, lower forecast dispersion and lower return volatility are evidence that analysts are better able to predict and agree on expected earnings performance.[12]

Analysing the association between changes in these variables and corporate investor relations performance provides an alternative means of evaluating the costs and benefits of investor relations activity. In particular, if investor relations served to maintain firms' reputation during the period in question, changes in trading volume, analyst coverage and press coverage should be positively associated with investor relations quality, while changes in forecast dispersion and forecast error, and book-to-price and earnings-to-price should be negatively associated with investor relations quality. Alternatively, no difference (a reversal) in these associations would indicate that investor relations firms fared no better (worse) relative to control firms.

To compute the change in investment viability attributes we measure and compare variables over the pre-scandal (September 2000–August 2001) and post-scandal (September 2002–August

2003) periods. The pre-scandal period end date is 31 August 2001, one month before the start of the first major accounting scandal (Enron). By September 2002, the start of the post-scandal period, the majority of the accounting scandals had come to light. We proxy firms' press coverage by counting the number of articles related to each firm in the *Wall Street Journal* (WSJ) during the pre- and post-scandal periods. The company search is restricted to the citation and abstract to increase the chances of finding articles related to a particular firm.[13] Trading activity is measured as the natural logarithm of annual share volume. We use annual earnings forecast properties for the first year-end preceding 31 August 2000 and 31 August 2003 to compute our analyst forecast variables. We take the number of analysts issuing an annual earnings forecast in the last month prior to the earnings announcement for both years as a proxy for analyst following. We assume zero analyst following for 4 firms in the IRMA sample and 15 firms in the non-IRMA sample that are absent from I/B/E/S. Forecast dispersion for both years is measured as the standard deviation of earnings per share (eps) estimates in the last month prior to the earnings announcement, scaled by the stock price on the last day of the fiscal year-end. Forecast accuracy is measured as the absolute difference between actual eps and median forecasted eps, deflated by stock price on the last day of the fiscal year-end for both years. The last consensus forecast for each firm prior to the earnings announcement is used to compute forecast error.[14] We deflate forecast error by the year-end stock price to address scale problems (Lang and Lundholm 1996).

6.   Sample, data and descriptive statistics

We use the 1996–2001 IRMA reports to construct our sample of firms deemed to have operated effective investor relations programmes. Firms achieving either winner or honourable mention status in a given year are classified as having effective investor relations programmes. We omit financial firms (SIC codes 6000–6999) and firms operating in other regulated industries (SIC codes 4000–4999) as the role of investor relations may differ in these industries. Finally, because the focus of our analysis relates to the period October 2001 through September 2002, we retain only those firms with price data available on CRSP for this entire period. Applying these sampling criteria yields a final sample of 122 firms deemed to have operated an effective investor relations programme in at least one year between 1995 and 2000.[15] Details of the sample selection process are presented in Table 2.

Results reveal considerable industry clustering: the majority of observations in our sample are drawn from the Manufacturing sector (59%), followed by Services (25%), Wholesale and Retail (13%), and Mining and Construction (3%). Reasons for this sample clustering are unclear and beyond the scope of our analysis. Since in subsequent analyses sample firms are matched with an industry control group, we do not expect such concentration to bias our tests to any significant degree. We are nevertheless mindful that industry clustering may reduce the generalisability of our findings to sectors not included in our final sample.

Our control sample of firms that did not feature in the IRMA reports is matched with IRMA firms on the basis of industry, size and book-to-market ratio using the following sequential sort procedure. For each firm-year in the IRMA sample, we identify all non-IRMA sample firms on the CRSP database in the same one-digit SIC category that (a) received no mention of their investor relations practices in any of the 1996–2001 IRMA reports, (b) had at least two years of price data prior to the IRMA award-year, and (c) had price data for our event period. The first criterion helps maximise potential differences in investor relations quality across IRMA and control firm samples. The second criterion guarantees that control firms existed at the time the IRMA award was made and as such were part of the universe of active stocks from which survey respondents made their selection. The third criterion ensures that control firms were active during our test period. Industry-matched non-IRMA firms are then ranked by market capitalisation measured

Table 2. Sample selection.

Total number of firms mentioned in 1996–2003 IRMA reports	947
Less:	
Firms missing from CRSP (including Asia-Pacific IR in the US, European IR in the US, Latin America IR in the US categories)	155
Firms appearing in the 2002 or 2003 reports	217
Book value of shareholders' funds not available on Compustat	5
Firms not achieving 'Winner' or 'Honourable Mention' status	368
Firms in the Most Improved IR, M&A Investor Relations, IR during Friendly Takeover, IR during Contested Takeover and IR for an IPO categories	37
Financial firms (SIC groups 6000–6999)	21
Firms operating in other regulated industries (SIC groups 4000–4999)	18
Market data not available for the event period (August 2001–September 2002)	4
	(825)
Final sample	122

Notes:
a. The IRMA reports include three distinct categories within each award, that is, Winners, Honourable Mentions and Mentions. We exclude firms from the sample that only got a mention to increase the power of the tests.
b. The same firm can appear in more than one award category in each year and can appear in more than one award year. Our sample consists of the number of unique firms from the period 1996–2001.
c. Some of the award categories were 'closed' as they have a restricted potential winners sample due to its nature. These were Most Improved IR, M&A Investor Relations, IR during Friendly Takeover, IR during Contested Takeover and IR for an IPO. Firms in these categories were excluded from the sample due to their contentious nature.
d. We omit financial firms (SIC codes 6000–6999) and firms operating in other regulated industries (SIC codes 4000–4999) because the role of investor relations practices in these industries is likely to differ significantly from the investor relations activities of firms operating in unregulated industries.

at 31 August 2001 and assigned to one of 20 equal-sized portfolios. Finally, the control firm in the same industry-market capitalisation portfolio as our IRMA firm that minimises the difference in book-to-market ratios was selected.[16]

Table 3 presents mean and median characteristics for IRMA and non-IRMA firms immediately prior to the start of our event period.

This comparison provides evidence on company attributes associated with our proxy for investor relations quality. We examine three size measures: log of market value of equity (*SIZE*), total assets (*ASSETS*) and sales (*SALES*).[17] In addition, we report two measures of firm performance: one-year compounded monthly returns (*RET*) and return on assets (*ROA*). We report two measures of growth: the earnings-to-price ratio (*EP*) and book-to-market (*BM*). We also examine leverage (*LEV*), press coverage (*PRESS*) and trading volume (*VOL*). Finally, we compute analyst forecast characteristics including analyst following (*ANAL*), forecast error (*ERROR*) and forecast dispersion (*DISP*).

Material differences between IRMA and non-IRMA firms are apparent for a number of variables examined. Means and median values of *SIZE*, *ASSETS* and *SALES* are significantly larger for IRMA firms compared to their respective control firms, suggesting that our matching procedure did not succeed in eliminating all size differences. (Multivariate tests reported in Table 6 control explicitly for these residual size effects.) IRMA firms also perform worse than their non-IRMA counterparts during the pre-event period in terms of both accounting (*ROA*) and market-based (*RET*) metrics. Consistent with results documented by Bushee and Miller (2010), IRMA firms are associated with significantly higher press coverage and analyst following. IRMA firms also display significantly higher trading activity during the pre-event period. Contrary to Lang and Lundholm (1996) but consistent with Farragher *et al.* (1994), we find no significant difference in forecast error properties between the two samples. Unlike Farragher *et al.* (1994), however, we also fail to find any significant difference in forecast dispersion.

Table 3. Summary statistics of differences between IRMA and non-IRMA samples.

Variable	N	IRMA sample		Control sample		p-value for difference	
		Mean	Median	Mean	Median	Means	Medians
SIZE	122	15.631	15.682	15.221	15.565	0.001	0.001
RET	122	−0.176	−0.100	0.134	0.185	0.001	0.001
BM	121	0.301	0.286	0.316	0.283	0.913	0.467
EP	121	−0.097	0.040	−0.022	0.043	0.357	0.586
PRESS	122	17.795	8.000	5.689	2.000	0.001	0.001
VOL	122	15.443	15.468	14.449	14.556	0.001	0.001
ASSETS	121	14799	4411	7588	2932	0.074	0.045
LEV	121	0.156	0.111	0.190	0.163	0.150	0.064
SALES	121	12451	4198	7440	2565	0.033	0.145
ROA	121	0.097	0.110	0.101	0.131	0.844	0.856
ERROR_Mean	98	0.002	0.000	0.004	0.001	0.467	0.679
ERROR_Med	98	0.002	0.000	0.004	0.001	0.404	0.146
DISP	102	0.002	0.001	0.003	0.000	0.768	0.691
ANAL	122	16.828	17.000	10.959	12.000	0.001	0.001

Note:
a. This table provides means and medians for firm characteristics before the event period. The IRMA sample refers to the sample of effective investor relations firms and the control column refers to the control sample matched on industry, size and *BM*. The last two columns test for differences in the mean and median between samples. *SIZE* is the log of the market value of equity, *RET* is the one-year monthly compounded stock returns, *BM* is the book value–price ratio, *EP* is the earnings–price ratio, *PRESS* is number of articles mentioning the company in the *Wall Street Journal*, *VOL* is the log of annual share volume, *ANAL* is the number of analysts providing an annual earnings forecast, *ERROR* is the absolute value of the analyst forecast error, deflated by the price at fiscal year-end, *DISP* is the standard deviation of forecasts deflated by stock price, *ASSETS* measures Total Assets (Compustat DATA6), *LEV* measures leverage by Long-Term Debt (Compustat DATA9) scaled by Total Assets, *SALES* represents Sales (Compustat DATA12) and *ROA* represents Operating Income After Depreciation (Compustat DATA178) scaled by Total Assets.

Although analyst forecast properties are similar for both samples, results for our other investment viability variables indicate that our measure of investor relations quality is indeed capturing the underlying construct.

7.   Results

7.1   *Contagion tests*

7.1.1   *Univariate results*

Table 4 presents descriptive statistics and results of the raw return analysis for the eight event windows.

Positive differences in the average returns between IRMA and matching non-IRMA firms indicate that IRMA firms' returns are on average higher than their non-IRMA counterparts over the event window. Only for Event 1 is the average raw return difference found to be positive and significant at conventional test levels. Contrary to the prediction that effective investor relations helped insulate firms from the negative contagion effects triggered by Enron and associated scandals, mean and median return differences are negative for six of the eight event windows, three of which are significant using a two-tailed parametric *t*-test (Events 2, 4 and 6) and four of which are significant based on two-tailed non-parametric tests (Events 2, 4, 5 and 6). Moreover, these negative three-day returns appear to be economically significant. For example, −0.009 on the *IR* variable for Event 6 equates to a loss of 66% on a compound annual basis.

Table 4. Testing the difference in average returns between matched IRMA and non-IRMA firms.

Event	N	Mean	Std dev.	Min	Median	Max	Probability values		
							t-test	Sign	Wilcoxon
Event 1	122	0.005	0.047	−0.254	0.003	0.229	0.043	0.075	0.042
Event 2	122	−0.007	0.050	−0.401	−0.003	0.151	0.009	0.158	0.045
Event 3	122	−0.001	0.035	−0.125	−0.002	0.222	0.564	0.321	0.286
Event 4	122	−0.005	0.048	−0.299	−0.004	0.229	0.035	0.005	0.001
Event 5	122	−0.003	0.040	−0.328	−0.004	0.166	0.144	0.040	0.056
Event 6	122	−0.009	0.045	−0.286	−0.005	0.170	0.000	0.001	0.000
Event 7	122	0.000	0.054	−0.210	0.002	0.524	0.904	0.562	0.883
Event 8	122	−0.002	0.051	−0.243	−0.001	0.279	0.379	0.712	0.744
All Events	122	−0.003	0.047	−0.401	−0.002	0.524	0.001	0.002	0.000

Notes:

a. The first column indicates the event window and the third column shows the mean difference in the raw returns between the matched IRMA and non-IRMA firms, over the event window and across the whole sample. We use the following equation:

$$AAR_i = \frac{1}{n} \sum_{j=1}^{n} \left(\frac{1}{d_i} \sum_{t=1}^{d_i} R_{jti}^I - R_{jti}^N \right).$$

b. Refer to Table 1 for definition of events.

Aggregating across all event days also reveals statistically significant negative return differences between IRMA and their non-IMRA matching counterparts. Similar conclusions are apparent for the (untabulated) difference in cumulative raw returns computed over the eight short window event periods. Collectively, findings reported in Table 4 provide little support for the prediction that firms with effective investor relations fared better during this period. Rather, results reveal that firms recognised as having effective investor relations actually fared worse when the market received negative news regarding financial reporting credibility.

Our findings are consistent with the wave of corporate scandals having tarnished the reputation of the investor relations industry. While superior investor relations firms traded at a premium prior to the event period as a consequence of their communication activities, news of systemic accounting failures caused disproportionately large downgrades for such firms due to concerns over the credibility of management generally and corporate communications practices in particular. From this perspective, while superior investor relations fails to provide a truly reliable signal of corporate credibility and integrity, it nevertheless has the power to influence market valuation. During non-crisis periods, effective investor relations may serve to boost investor confidence in management and corporate performance, causing such firms to trade at a premium relative to their peers with less well-developed communication practices. However, when corporate credibility and financial reporting integrity are called into question, we conjecture that such firms have proportionately more to lose as investors systematically revise downwards their perceptions of management quality and financial probity. Paradoxically, therefore, market confidence in firms with well-developed communication practices is dented to a larger degree by the accounting scandals than for firms with little or no track record in investor relations activities. A competing explanation for the return differences reported in Table 4 is due to unmodelled risk differences between treatment and control firms. We explore this issue further in our multivariate tests.

The positive average return difference documented for Event 1 is worthy of further discussion. As this was the earliest event in the test window, we conjecture that the reputation of investor

Table 5.   Cumulative abnormal returns over the long-run event window (October 2001–September 2002).

12-month CAR	IRMA firms		Non-IRMA firms		Portfolio difference		Matched firm difference	
	Mean (median)	N	Mean (median)	N	t-test (p-value)	Wilcoxon Z score (p-value)	t-test (p-value)	Wilcoxon Z score (p-value)
Oct 2001–Sept 2002	0.049	122	0.123***	122	1.16	0.786	−1.170	−497.5
	(0.113)**	122	(0.175)***	122	(0.246)	(0.432)	(0.244)	(0.205)

Notes:
a.   This table shows the market-adjusted cumulative abnormal return for the sample of IRMA firms and non-IRMA firms over the 12-month (October 2001–September 2002) event window using monthly return data. Statistical tests were performed for differences between the IRMA and non-IRMA sample means and between the matched differences between the 122 IRMA and non-IRMA firms. We use the CRSP value-weighted index returns as market index returns.
b.   Significant differences from zero at 10, 5 and 1% are indicated by *, ** and ***, respectively.

relations activities remained intact at this point and as a consequence this is the only event window where IRMA firms experienced fewer market costs relative to their non-IRMA counterparts. Viewed in this way, our findings serve to reinforce the potential benefits of effective investor relations during normal market conditions.

In addition to examining whether there was a differential stock price effect for the two samples over the short news event windows, we also test for differential price effects over the whole 12-month period between October 2001 and September 2002. Market-adjusted cumulative monthly returns for both samples are presented in Table 5.[18]

For both samples, after adjusting for the cumulated monthly CRSP value-weighted market return, cumulative abnormal returns are significantly positive. Hence both samples outperformed the market over the year. However, tests fail to reveal any significant statistical difference between the two samples. Accordingly, these null results again fail to support the view that effective investor relations helped insulate firms from problems during this period.

7.1.2   *Multivariate results*

Table 6 reports results for multivariate tests designed to control for other potential confounding factors.

Findings are consistent with univariate results in so far as they provide no evidence to support claims that an effective investor relations programme protected firms against contagion associated with corporate financial scandals. In particular, the estimated coefficient on the investor relations indicator variable is either indistinguishable from zero (Events 1–5 and 7–8) or significantly negative (Event 6) for the eight event windows examined in Table 6. These findings reveal that IRMA firms were no better insulated than non-IRMA firms from market downgrades resulting from investor concerns over the integrity of management and financial reporting practices. Indeed, although less pronounced than our univariate findings, there is evidence that firms with award-winning investor relations programmes were penalised more heavily by the market during our event windows compared to non-IRMA control firms: six of the coefficient estimates on *IR* are negative, with Event 6 being significant at the 5% level. At best, therefore, our findings suggest that high-quality investor relations practices established during non-crisis periods provide no guarantee that a firm will be insulated from declines in investor confidence arising from the corporate misdeeds of other firms.

Results for the control variables included in Equation (3) are generally insignificant. Only coefficient estimates on the indicator variable for Andersen clients (Event 7), sales growth

Table 6. Multivariate analysis.

Variables	10 Nov Event 1 coefficient (p-value)	12 Dec Event 2 coefficient (p-value)	10 Jan Event 3 coefficient (p-value)	4 Feb Event 4 coefficient (p-value)	14 Mar Event 5 coefficient (p-value)	20 Jun Event 6 coefficient (p-value)	9 Jul Event 7 coefficient (p-value)	19 Jul Event 8 coefficient (p-value)
Intercept	0.011	0.017	0.005	0.004	0.004	0.003	−0.028	−0.023
	(0.670)	(0.505)	(0.842)	(0.879)	(0.883)	(0.892)	(0.265)	(0.357)
IR	0.005	−0.006	−0.002	−0.005	−0.003	−0.009	0.001	−0.002
	(0.196)	(0.149)	(0.714)	(0.269)	(0.404)	(0.035)	(0.843)	(0.633)
DAA	0.004	0.002	0.001	0.000	0.002	0.001	0.008	−0.003
	(0.265)	(0.550)	(0.728)	(0.937)	(0.632)	(0.850)	(0.035)	(0.447)
SIZE	−0.001	−0.001	−0.001	0.000	0.000	−0.001	0.000	−0.001
	(0.692)	(0.389)	(0.705)	(0.797)	(0.861)	(0.671)	(0.883)	(0.440)
BTM	−0.001	−0.001	−0.002	0.001	−0.001	0.001	0.001	−0.001
	(0.441)	(0.458)	(0.244)	(0.509)	(0.578)	(0.645)	(0.627)	(0.529)
ROA	−0.003	−0.021	0.008	−0.012	−0.007	−0.013	0.000	−0.001
	(0.828)	(0.130)	(0.574)	(0.385)	(0.594)	(0.331)	(0.994)	(0.925)
SG	0.002	−0.002	−0.001	−0.003	−0.001	−0.004	−0.002	−0.002
	(0.114)	(0.150)	(0.524)	(0.043)	(0.465)	(0.007)	(0.263)	(0.283)
LEV	0.009	0.002	−0.012	−0.004	0.006	0.020	0.025	−0.001
	(0.501)	(0.848)	(0.351)	(0.777)	(0.620)	(0.112)	(0.050)	(0.968)
IND_MANF	−0.010	0.001	0.000	−0.004	−0.005	−0.008	0.003	0.015
	(0.328)	(0.895)	(0.994)	(0.732)	(0.662)	(0.452)	(0.771)	(0.156)
IND_WHL	−0.011	0.004	−0.008	−0.005	−0.007	−0.001	0.002	0.018
	(0.367)	(0.763)	(0.498)	(0.689)	(0.547)	(0.944)	(0.884)	(0.121)
IND_SERV	0.001	0.005	0.005	−0.014	−0.015	−0.012	0.012	0.017
	(0.894)	(0.679)	(0.655)	(0.206)	(0.165)	(0.270)	(0.263)	(0.124)

Notes:
a.   This table presents coefficient estimates and *p*-values (in parentheses) for the regression models. The cumulative return over each event window acts as our dependent variable and this is regressed on several control variables. *IR* is the dummy indicator for when the firm is from the IRMA sample or not. *DAA* is a dummy indicator for when the firm is audited by Andersen or not. *SIZE* is the log of the market value of equity and *BTM* is the book value−price ratio. *ROA* represents Operating Income after Depreciation (Compustat DATA178) scaled by Total Assets and *SG* is Sales Growth (Compustat DATA12). *LEV* is leverage, defined as the ratio of Long-Term Debt to Total Assets. Three dummies identifying the industry the firm belongs to: *IND_MANF*, *IND_WHL* and *IND_SERV* represent the Manufacturing, Wholesale and Services industry, respectively.
b.   Estimation based on the Sefcik and Thompson method (1986), which uses portfolios constructed by weighting observations to account for cross-sectional correlation and heteroscedasticity.

(Events 4 and 6) and leverage (Event 7) are significantly different from zero at conventional levels. Findings suggest that our inability to detect positive pricing effects for investor relations activities is not due to the omission of potentially confounding factors. The results also indicate that our matching procedure has been relatively successful in identifying non-IRMA firms with similar risk profiles.

7.2   *Investment viability and analysts' earnings forecasts tests*

Table 7 reports mean and median changes in company characteristics between pre-scandal (September 2000–August 2001) and post-scandal (September 2002–August 2003) periods.

If investor relations served to maintain firms' reputation during this period, changes in trading volume, analyst following and press coverage should be positively associated with investor relations quality, whereas changes in forecast dispersion, forecast error, book-to-price and earnings-to-price ratios should be negatively associated with investor relations quality.

Table 7.   Difference-in-difference tests.

Variable		ΔIRMA sample		Δcontrol sample		*p*-value for difference	
		Mean	Median	Mean	Median	Means	Medians
SIZE	112	−0.047	−0.012	−0.079	0.019	0.636	0.637
RET	119	0.553	0.318	0.197	0.005	0.028	0.001
BM	112	−0.096	0.019	0.057	0.020	0.071	0.395
EP	112	−0.008	−0.006	−0.015	0.004	0.852	0.925
PRESS	122	−4.738	−2.000	0.057	−1.000	0.009	0.090
VOL	119	0.010	0.090	0.249	0.237	0.001	0.001
ASSETS	115	2455.247	187.035	744.099	159.527	0.241	0.040
LEV	115	0.022	0.000	0.003	0.000	0.233	0.573
SALES	115	−134.969	16.954	−258.170	52.828	0.827	0.351
ROA	115	−0.147	−0.034	−0.011	0.003	0.197	0.062
ERROR_Mean	94	0.009	0.000	−0.001	0.000	0.252	1.000
ERROR_Med	94	0.010	0.000	−0.002	0.000	0.215	0.606
DISP	94	−0.001	0.000	−0.002	0.000	0.438	0.353
ANAL	122	−1.754	−2.000	−0.066	0.000	0.016	0.004

Note:

a.   This table provides means and medians for changes in firm characteristics during the period of market negativity. The IRMA sample refers to the sample of effective investor relations firms and the control column refers to the control sample matched on industry, size and *BM*. The last two columns test for differences in the mean and median between samples. *SIZE* is the log of the market value of equity, *RET* is the one-year monthly compounded stock returns, *BM* is the book value–price ratio, *EP* is the earnings–price ratio, *PRESS* is number of articles mentioning the company in the *Wall Street Journal*, *VOL* is the log of annual share volume, *ANAL* is the number of analysts providing an annual earnings forecast, *ERROR_Mean* is the absolute value of the analyst forecast error using the mean consensus forecasts, deflated by the price at fiscal year-end, *ERROR_Med* is the absolute value of the analyst forecast error using the median consensus forecasts, deflated by the price at fiscal year end, *DISP* is the standard deviation of forecasts deflated by stock price, *ASSETS* measures Total Assets (Compustat DATA6), *LEV* measures leverage by Long-Term Debt (Compustat DATA9) scaled by Total Assets, *SALES* represents Sales (Compustat DATA12) and *ROA* represents Operating Income After Depreciation (Compustat DATA178) scaled by Total Assets.

Although both samples experience a median fall in press coverage (*PRESS*) over the period, the fall experienced by the IRMA sample firms is twice as large as that of the control sample. Similarly, IRMA firms experience a median drop in analyst following of two analysts (*ANAL*) whereas the median loss of coverage was zero for the control sample. Furthermore, although both samples experience a small increase in trading activity (*VOL*) over the period, the increase for IRMA firms is less than half that of the control sample. These results do not support the view that investor relations insulated firms from the negative market shocks. There again exists some evidence that distrust in corporate reporting practices spilled over to investor relations practices.

Lang and Lundholm (1993, 1996), Farragher *et al.* (1994) and Adrem (1999) report lower dispersion among analyst forecasts for firms with more informative disclosures. We fail to find a significant difference in the change in dispersion between the two samples over this period. Similarly, we find no difference in the change in forecast error for both samples. Again, these results do not support the view that investor relations firms were insulated from the effects of the credibility crisis.

Overall, the picture presented by these results is somewhat mixed. There is some evidence that IRMA firms were viewed more negatively by analysts as a result of the scandals. Other evidence suggests they were treated similarly to control firms. Notably, however, there is no evidence suggesting that analysts exhibited more confidence in (and interest towards) IRMA firms relative to their non-IRMA counterparts during the scandal period. In sum, investors appear to have been unimpressed by previously established investor relations credentials.

7.3   *Robustness tests*

We conduct a number of untabulated sensitivity checks on the robustness of results reported above. In the first set of tests, we use an alternative method of selecting event dates for our study. In the second set of tests, we expand the sample to include other firms recognised in the IRMA reports.

7.3.1   *Events related to other major scandals in 2002*

Instead of relying on event dates identified in prior studies, we construct a sample of critical news event dates relating to the Enron, Global Crossing, Tyco and WorldCom scandals from a keyword search of the WSJ during calendar years 2001 and 2002. We focus on these large scandals to restrict our attention to cases with a potential market-wide effect. All WSJ articles relating to these four scandals were examined. After removing confirmatory and duplicate stories, 119 articles remain. Because our interest lies in examining the contagion effects relating to these events, we exclude articles where the contagion effect is expected to be negligible.[19] This procedure results in a final sample of 75 event dates running from 16 October 2001 to 27 September 2002. The first date in our sample is the announcement by Enron of a third quarter loss of $618 million owing to a $1 billion one-off charge, together with a $1.2 billion reduction in shareholders' equity. The last event date is the announcement that WorldCom's former controller had pleaded guilty to three counts of conspiracy, securities fraud and making false statements to the Securities and Exchange Commission. Three-day event windows centred on each of the 75 WSJ dates are constructed. Where event windows overlap, they are grouped together to form a single extended window, resulting in 30 unique event windows ranging from 3 to 10 days' duration.

Untabulated results reveal that on average across all event days, firms recognised as having effective investor relations suffered larger price falls when the market received negative news regarding accounting scandals. On closer examination, eight event windows have a significantly negative average raw return difference between the IRMA and control samples. In comparison, there are only two event windows where a significant positive average raw return difference is evident. Findings indicate that more often than not, differences in average returns between IRMA and control firms are either non-significant at conventional significance levels or significantly negative. Hence, these results provide no evidence that good investor relations firms were insulated to a greater degree from the credibility crisis.

7.3.2   *Sample refinements*

The final sample of 122 firms was obtained after a rigorous refinement of the IRMA data. However, additional tests were conducted to ensure that results are robust to these refinements. In particular, we reinstated all firms in receipt of at least one positive mention in the IRMA reports, resulting in a larger sample of 321 firms. The number of event windows with a negative and statistically significant difference in average raw return between IRMA and matched control firms is reduced from the four events reported in Table 4 to two events (Events 2 and 6) for the eight events summarised in Table 1. However, aggregating across all event days still yields a significant negative difference in the average raw return between the case and matched control sample. Furthermore, Event 1 continues to be the only window where we observe a significant positive average raw return difference. Although less pronounced, these findings are broadly consistent with our main results.

8.   Conclusion

This paper provides the first investigation into the capital market consequences of investor relations activities during a period of general distrust over corporate credibility. Although previous studies shed light on the specific activities undertaken by the investor relations process

and the associated benefits (Marston 2008), no study to date has empirically tested the capital market implications of investor relations when corporate credibility is called into question. Prior literature suggests that investor relations plays an important role in reducing information risk leading to several capital market benefits but these results are confined to non-crisis trading periods (Bushee and Miller 2010, Agarwal *et al.* 2008). We examine whether investor relations helps uphold investor confidence during difficult market conditions caused by a wave of high-profile accounting scandals. Our empirical tests examine a sample of 122 companies recognised for their superior investor relations practices by the US *Investor Relations Magazine* Awards (IRMA) over the period 1996–2001. Tests compare IRMA firms to a control sample matched on industry, book-to-market ratio and firm size. Two complementary approaches are used to investigate the link between investor relations and the extent of the market-related costs imposed on US firms during this period. We fail to find any support for the view that a reputation for effective investor relations served to insulate firms from the systemic decline in investor confidence that occurred during our sample period. On the contrary, results indicate that firms with established investor relations reputations fared marginally worse on a series of market-related dimensions.

These findings are consistent with the hypothesis that heightened investor scepticism concerning the general credibility of management and financial reporting surrounding Enron and related events damaged the confidence investors had hitherto placed in investor relations. Instead of serving to insulate firms from systematic market downgrades resulting from heightened market scepticism regarding accounting quality and management credibility, Enron and subsequent scandals appear to have undermined established views of what constituted good investor relations. Viewed this way, while investor relations may have the potential to influence market valuations in particular circumstances, the activity may not serve as a truly reliable signal of credibility. Under normal market conditions, firms with well-developed investor relations practices may trade at a premium relative to their peers because effective investor relations helps increase investor confidence. However, when this confidence is dented, as it clearly was around the time of the Enron scandal, firms previously recognised for their investor relations activities may be more negatively affected.

Our findings can be viewed from a costly signalling perspective (Akerlof 1970). According to this theory, a signal is only effective if it can be used to distinguish superior firms (products, services, etc.) from inferior ones. From this perspective, investor relations activities only provide an effective costly signal for high-quality firms if lower quality firms are prevented from mimicking such a strategy (e.g. due to cost). One means through which firms can increase the cost associated with investor relations activities is to credibly commit to releasing bad news (as well as good news) in timely and transparent manner. Whether this can be achieved remains to be seen.

Acknowledgement

Notes

1. Hong and Huang (2005) present a model where management engage in investor relations for reasons unrelated to stock price improvement. In their model, investor relations expenditure is driven by

insiders' incentives to enhance the liquidity of their equity stake in case they are forced to sell stock for liquidity reasons in the future.

2. For an economic analysis of how confidence in business as a whole can wax and wane as a function of the level of news about corporate scandals and wrong-doing, see Akerlof and Shiller (2009).

3. Tighter regulations imposed on companies concerning the disclosure of price-sensitive information occuring immediately before and after our test period including Regulation Fair Disclosure (SEC 2000) and Global Research Analyst Settlement (2005), have heightened the importance placed on corporate communications and the need for timely, transparent and honest financial information. These regulatory demands for corporate transparency were intended to force investor relations professionals to improve relations with cynical investors and regulators.

4. Enron ranked second in the 'Best Overall IR' category by IRM research in both 1999 and 2000.

5. The AIMR and IRMA reports have adopted fundamentally different perspectives on the relation between disclosure policy and investor relations. AIMR viewed investor relations as a component of firms' general disclosure policy, as evidenced by investor relations being one of the three subcategories used to determine firms' overall disclosure level. In contrast, the IRMA reports view investor relations as the underlying construct, of which disclosure policy represents one (important) element.

6. A detailed history of the events leading to the passing of SOX can be found in Li *et al.* (2008). Negative abnormal returns around some congressional events leading up to its enactment have been detected by several studies (Jain and Rezaee 2006, Zhang 2007, Li *et al.* 2008). Several explanations for this result have been proposed. In particular, the negative reaction may have indicated the ineffectiveness of the reform proposed or doubt amongst investors over the eventual passage of the Act (Jain and Rezaee 2006). Many commentators have also criticised the Act for imposing excessive costs on companies with little clear benefit (Jain and Rezaee 2006, Zhang 2007, Li *et al.* 2008).

7. We also conduct tests using an alternative method of selecting event dates. Instead of using dates from prior studies, we identified a sample of critical news events relating to the Enron, Global Crossing, Tyco and WorldCom scandals from a keyword search of the *Wall Street Journal* (WSJ) during calendar years 2001 and 2002 (see Section 7.3.1).

8. Most of the information transfer methods used in previous studies adjust returns for market risk when computing abnormal returns (Lang and Stulz 1992, Callen and Morel 2003, Asthana *et al.* 2008). However, we use raw stock returns since adjusting for market returns is not necessary in this design as the control firms have been matched according to industry, size and book-to-market, which control for systematic risk.

9. In addition, we have also computed the compounded cumulative return as a check on whether the portfolio rebalancing implied in the simple averaging method makes any difference to the results. Results are unchanged.

10. The base case industry is Mining and Construction.

11. See Sefcik and Thompson (1986) and Li *et al.* (2008) for a more detailed explanation of the implementation of this method.

12. In keeping with the literature (Farragher *et al.* 1994, Bushee and Miller 2010, Agarwal *et al.* 2008), we do not consider bias in analyst forecasts because we have no clear prediction what the effect of better investor relations might be on this variable. We also consider bias to be less important than forecast accuracy in the context of our analysis.

13. Searching citations and abstracts involves the following fields in Factiva: Author, Personal Name, Abstract, Product Name, Document Title, Subject, Company, Publication Name (Source) and Geographical Name.

14. As a sensitivity check we also compute forecast error using the average monthly forecast error computed over the first 12-month fiscal period preceding 31 August 2000 and 31 August 2003.

15. Sensitivity tests were conducted to ensure that our results are robust to these refinements. We obtain similar results when we include the firms that featured in the IRMA reports but were not winners or honourable mentions, financial and regulated firms, firms from all award categories and when we extend our sample to include firms that featured in the 2002 and 2003 IRM awards.

16. We conduct three different matching sensitivity checks on our data. First, matching by book-to-market to identify a control firm is a contentious issue as one could argue that higher valuations are one of the proposed consequences of effective investor relations. Therefore, matching on the basis of book-to-market may reduce our ability to detect valuation effects of investor relations and bias against the demand for investor relations in our control firms. Hence, we run our tests again, matching by year, industry and size alone. Instead of matching by the same size portfolio, we match by the smallest absolute difference in market capitalisation. Furthermore, we stipulate that the control firm can be no

more than 50% bigger or smaller than the IRMA firm. Second, we refine the industry match to firms within the same two-digit SIC category. For those cases where a match was unsuccessful ($N = 29$), one-digit SIC codes were used as a secondary matching procedure to ensure maximum sample size. Third, the control sample was found through matching by year, size and firms within the same two-digit SIC category. Again, instead of matching by the same size portfolio, we match by the smallest absolute difference in market capitalisation. Furthermore, the control firm can be no more than 50% bigger or smaller than the IRMA firm. Conclusions based on all three alternative matching procedures are consistent with those reported in the main text.

17. We use both market-based and non-market-based measures of size in case of problems with endogeneity.

18. The CRSP value-weighted market return was used as a proxy for market return.

19. News related to downgrades by debt agencies were excluded, for example, on 29 October 2001 Moody's downgraded Enron's long-term debt. Other news items that were considered largely firm specific were also excluded, for example, on 3 April 2002 WorldCom said it was cutting 3700 jobs in the USA.

20. The method used to compute the scores is deemed proprietary information and is not discussed in the IRMA research reports. Awards are also made for investor relations effectiveness across a further six specialist categories (not decomposed by size): Most Improved IR, M&A Investor Relations, Asia-Pacific IR in the US, European IR in the US, Latin America IR in the US, and IR for an IPO. We exclude these six categories from our analysis due to their limited scope and their focus on foreign firms.

21. Use of the four size categories was first introduced in the 2000 research report. Prior to that, three (two) size groupings were used in the 1998 and 1999 (1997) reports.

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Appendix

Investor Relations Magazine employs a specialist research agency to administer the surveys and write the reports. The basis of each year's survey is a target set of equity market professionals and retail investors. Thomson Financial/Carson supplies the list of investment professionals drawn from their client database. Professional investors are classified into buy-side and sell-side professionals to ensure equitable representation of each category. Buy-side individuals are then further subdivided into three categories: those with a small-cap following; those with assets under management of less than \$5 billion; and those whose assets under management exceed \$5 billion. Finally, individuals in the latter two groups are classified into portfolio managers and analysts using the Thomson Financial/Carson job function indicator. Barron's supplies details of retail investors. The resulting pool of market participants targeted by the survey represents a significant slice of the US investment community. For example, 17,156 (16,647) investment professionals and 2000 (1697) retail investors were invited to participate in the 2001 (2000) survey. Annual survey response rates vary between 10 and 12%.

Pre-selected versions of the main questionnaire, together with a separate small-cap questionnaire, are distributed to buy-side, sell-side and individual investor groups towards the end of January each year and the survey closes in early February. In addition to probing respondents' views of general trends in investor relations activities over the preceding year, the questionnaire asks investors to identify firms that, in their view, exhibited effective investor relations strategies. Firms are scored on their investor relations performance across the following 12 categories:[20]

• Grand Prix	• Conferencing†
• Annual Report†	• Retail Market IR
• CEO	• Investment Community Meetings†
• Financial Media Relations†	• Corporate Governance
• Investor Relations Officer†	• Senior Management Communications†
• Corporate Advertising	• Disclosure Policy†

Each category is divided into four size classifications according to market capitalisation: <\$2.5 billion, \$2.5–10 billion, \$10–30 billion and >\$30 billion.[21] The Grand Prix category is a composite score based on responses to eight questions [Best Overall Investor Relations Program (weighted 2/3 of total score), plus those categories marked †]. Details of all firms with a non-zero score for one or more of the investor relations categories listed above are disclosed in the final IRMA Report. Firms are ranked within each investor relations category–size group according to their score, and firms ranking in outright or joint first place are declared 'winners'. Firms ranking below first place that in IRM's view are also deserving of recognition due to their high score are awarded 'honourable mentions'.

Although we consider this survey to be the best measure of investor relations quality in the market, the IRMA data does have certain shortcomings. One disadvantage is that the IRMA survey results may be subject to greater response bias than the AIMR data. In particular, because respondents self-select to complete the IRMA questionnaire, their motivation for participating in the survey and nominating a particular firm may be driven by factors other than simply identifying the most effective investor relations programme. However, since respondents' views remain anonymous in the published reports, gains to submitting biased evaluations are unclear. Second, because the IRMA rankings rely partly on retail investors' views, they may contain greater noise if these respondents are less knowledgeable about effective investor relations practices. IRMA seeks to address this problem by using a special version of the questionnaire specifically targeted at non-expert investors. Any residual noise in the scores, while reducing the power of the empirical tests, is not expected to cause our results to be biased. Finally, as firms are scored under 12 different categories, the relation between the categories and investor relations quality may not be the same for each.