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Corporate governance, stickiness and losses

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Abstract

Purpose – *This paper aims to study the impact of a significant negative shock (the reporting of an initial loss) on the stickiness of corporate governance. This paper examines whether corporate governance changes in response to the reporting of an initial loss and also whether* ex ante *corporate governance weakness impacts on the propensity for change.*

Design/methodology/approach – *The study uses three years of corporate governance information spanning the report of an initial loss for companies listed on the UK Stock Exchange. An industry- and size-matched control sample is used in a difference-in-difference analysis to isolate the impact of the loss from underlying changes in governance.*

Findings – *The results indicate that an initial loss precipitates an improvement in corporate governance and that this improvement is significantly more pronounced in those companies which displayed either weak or extreme governance before the loss. There is also evidence that the improvement in corporate governance begins before the loss is actually reported.*

Research limitations/implications – *This study focuses on a three-year period in the UK only and so is a limitation of the research. Future research could be based on the findings from other jurisdictions or from using other conditioning variables.*

Originality/value – *This study contributes to the stream of research that examines negative shocks, and losses in particular, as an event likely to precipitate firm-level changes in corporate governance and offers insights into the reasons for firm-level corporate governance improvements. It demonstrates that, notwithstanding the recommendations of the Combined Code, firms tend to not make improvements without the impetus and need to do so, i.e. corporate governance is sticky.*

Keywords *Corporate governance, Stickiness, Losses, Principal components, Difference-in-difference*

Paper type *Research paper*

1. Introduction

Extant research has provided evidence of management changes resulting from poor performance and corporate governance changes following accounting misstatements or fraud. There is also evidence that corporate governance influences the relation between management turnover and performance. This current paper is different, in that it examines corporate governance changes associated with unambiguous evidence of underperformance – the reporting of an initial loss.

There is much evidence of corporate governance changes at national level following scandals, frauds and financial collapses. For example, in May 1991, the setting up of the Committee on the Financial Aspects of Corporate Governance was precipitated by the issues that arose at UK companies such as Coloroll and Polly Peck. The Committee's report (the Cadbury Report) which began the transformation of corporate governance in the UK was influenced by the subsequent issues that came to light regarding Robert Maxwell as well as the Bank of Credit and Commerce International (BCCI). The few research studies that have investigated corporate governance changes at firm level pertain mainly to responses in firms' governance to negative shocks including accounting misstatements,

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the discovery of fraud, the reporting of extreme losses or the revelation of an internal control material weakness (ICMW). For example, Farber (2005) points out that firms identified by the Securities and Exchange Commission (SEC) of fraudulently manipulating their financial statements take steps to improve their governance; Mulcahy and Linehan (2014) find that extreme losses precipitate improvements in gender diversity at board level in their study of the glass cliff; ICMWs are often associated with underperformance or the reporting of a loss (Johnstone *et al.*, 2011). In this paper, we argue that the incurrence of a loss because of its very nature and its potential associations as discussed above will provoke changes in corporate governance at the firm level.

Perry and de Fontnouvelle (2005) and Plunus *et al.* (2012) have shown that a firm's reputation is damaged by the announcement of losses. We predict that firms which experience a loss will attempt to mitigate these adverse reputational consequences by improving their corporate governance in response to/anticipation of their underperformance. If losses are allowed to perpetuate, the shareholders of the company will exercise their put option to liquidate the firm (Hayn, 1995). Incurring a loss is not as extreme an event as the discovery of fraud studied by Farber (2005) and Perry and de Fontnouvelle (2005), but it is indicative of a situation that requires remedial action and potentially may evolve to become a crisis (Mulcahy and Linehan, 2014). Even if losses are not expected to perpetuate, they are indicative of a rate of return that is clearly below that required by investors. The signal of unambiguous underperformance provided by a loss will not be tolerated by investors over a prolonged period and needs to be seen to be addressed.

We collect a sample of firms experiencing their first loss in at least three years between 2004 and 2006. We form a control sample matched on industry and size and examine the relative changes in corporate governance in the period surrounding the loss. Using principal components analysis, we formulate three corporate governance factors (Board, Chair and Ownership) for the firms in our samples. We supplement these factors with the individual governance variable board size (BSize) which does not load on any of the above factors. Based on the extant research, BSize has been shown to be an important determinant of its effectiveness (Hermalin and Weisbach, 2003). We find that our loss and control samples are not significantly different from each other with respect to the above four variables before the loss is incurred[1]. We report that loss firms improve their governance with respect to board structure around the time of the loss to such an extent that their governance post-loss is superior in some aspects of governance to the firms which did not incur a loss. Our results also indicate that there is a tendency for governance changes to precede the announcement of the loss. However, the most significant changes in governance occur over a 24-month period beginning at the start of the fiscal year in which the loss is incurred and for firms with pre-existing governance weakness, i.e. governance is sticky without *ex ante* weakness.

2. Background and hypothesis development

There is a paucity of studies that address changes in corporate governance in response to a loss event. Most studies that examine changes in corporate governance argue that when a firm experiences a material negative event (such as the revelation of a financial misstatement or a fraud) its corporate governance equilibrium destabilizes (Larcker *et al.*, 2007). This motivates firms to change their corporate governance mechanisms having due regard to the cost of such changes (Agrawal *et al.*, 1999). Srinivasan (2005) shows that firms that restate earnings downward have greater director turnover than a matched sample of firms that restate earnings upward. Desai *et al.* (2006) and Agrawal and Cooper (2009) detail a positive relation between restatements and top management turnover, but Beneish (1999) reports no association between restatements and management turnover. Johnstone *et al.* (2011) examine changes in corporate governance that stem from the revelation of ICMW. It is one of the provisions of the Sarbanes–Oxley Act of 2002 that firms

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and their auditors must report on the presence of ICMWs. Johnstone *et al.* (2011) predict that such revelations are associated with turnover in the board of directors, audit committee and top management and specifically with subsequent improvements in corporate governance. Their empirical analysis provides evidence that supports their predictions. Of particular relevance to the current study is that one of their control variables, the reporting of a loss, is positively associated with the incidence of an ICMW.

Two studies that specifically examine changes in corporate governance in response to a shock event are Farber (2005) and Mulcahy and Linehan (2014). Farber examines whether an investigation by the SEC precipitates a change in a range of governance metrics and documents whether any of these changes provide economic benefits. His logic is that if firms are to expend scarce resources on governance improvements precipitated by the shock, then evidence that such changes provide economic benefits would strengthen the case being made by regulators in this regard. Farber finds that prior to the announcement of the SEC investigation, fraud firms exhibited weakness, *inter alia*, in the proportion of outside directors on the board. However, at the end of the three years following the fraud detection, fraud firms were indistinguishable from a matched control sample in this variable. This indicates that in response to a shock event, fraud firms wish to report their financial information more credibly and improve their governance mechanisms in an attempt to do so. Contributing to a stream of work exploring the phenomenon known as the glass cliff (Haslam *et al.*, 2010; Ryan and Haslam, 2005, 2009) Mulcahy and Linehan (2014) provide evidence that board gender diversity improves in response to an extreme loss event.

Incurring a loss can be a significant negative event in the life of a firm. Perry and de Fontnouvelle (2005) and Plunus *et al.* (2012) show that firms reporting a loss suffer significant reputational damage (as measured by adverse market reaction). While it is possible even for firms reporting a profit to fail to achieve the required rate of return demanded by its shareholders, there is little doubt that loss firms are a special case of underperformance. As pointed out by Hayn (1995) shareholders will not tolerate indefinite losses and will eventually exercise their put option to liquidate the firm. In terms of put call parity, this can also be seen in terms of the lenders of the company exercising their call option to seize and sell the assets of the firm.

The market perceives losses to be very different to profits when valuing firms (Collins *et al.*, 1999). The latter authors show that losses have limited predictive ability relative to profits for future earnings and so the company's book value becomes much more important for the valuation of loss-making companies both as a proxy for future normal earnings and an indicator of liquidation value. An initial loss may be transitory, but it may also signal the beginning of the end of a company. When the loss is first reported, investors will attempt to assess whether the loss is either a transitory blip or a symptom of terminal decline. The firm's management will generally attempt to signal that the loss is transitory and that remedial action has been taken to return the firm to profitability.

One way of signaling to the market that the initial loss is not terminal is to demonstrate that the company is well governed. Insiders in a company in terminal decline are unlikely to invest in improved governance which will militate against them, expropriating outsiders prior to liquidation. Accordingly, any firm that incurs or is about to incur a loss will ensure that its governance is of a sufficiently high standard to signal its ability and intention to continue as a going concern. Thus, our main hypothesis stated in alternative form is:

H1. The reporting of an initial loss is associated with an improvement in corporate governance.

This hypothesis tests the *average* effect of an initial loss event on corporate governance. That is, there is an assumption that whatever the association between the initial loss event and corporate governance changes that this association is the same for all initial loss firms. This might not be a valid assumption if initial loss firms with different pre-period

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characteristics could be reasonably expected to induce a different corporate governance response to the initial loss event. There is evidence that the market's interpretation of accounting earnings or losses is always conditioned on other non-accounting information available (El-Gazzar, 1998; Freeman, 1987). It is also likely that a firm which can claim to have good standard of corporate governance will not perceive a need to alter it just because an initial loss is imminent. This is similar to the conditioning of board changes in Young (2000) where the pre- and post-impact of Cadbury was an issue. Accordingly, we extend the previous analysis to take account of other information available to investors – the firm's standard of corporate governance before the loss in this instance. Thus, our second hypothesis stated in alternative form is:

H2. *Ex ante* corporate governance quality has an effect on the association between the reporting of an initial loss and corporate governance changes.

The timing of the improvement of in governance is also of interest. There is evidence that firms can anticipate incurring a loss and on occasion can even manage earnings to avoid losses (Burgstahler and Dichev, 1997; Hansen, 2010). It is axiomatic that a sample of loss firms comprises firms that could not avoid incurring losses, but it is likely that they will have anticipated the loss before it is announced. An alternative strategy to earnings management is disclosure and information management. Thus, we predict that as well as improving its governance, a loss firm may make these improvements before announcing a loss.

3. Empirical analysis

3.1 Data sources and sample selection

3.1.1 The initial loss sample. All of those companies which reported a net loss in the years 2004, 2005 and 2006 are potential candidates for inclusion in our loss sample. This yields a total of 730, 826 and 841 candidates for each of 2004, 2005 and 2006, respectively, and these are referred to as loss firms. However, several firms are loss-making prior to these three years or make losses in more than one of the three years considered. If a firm has incurred losses in the immediate past, it is unlikely that another loss will precipitate further change in corporate governance. To isolate the loss event, and to minimize the lagging impact of any previous losses a firm may have had, a restriction that the loss year is preceded by two years of positive net income is imposed. It is these two years of reported profit before the loss event that allows this study to define the loss event as a "shock". Financial institutions (i.e. all those companies with an industry classification benchmark [ICB] code of 8,000) and all firms not directed by the Combined Code on Corporate Governance (foreign firms) as well as 107 firms with insufficient data are eliminated from the sample. Thus, we have a total of 138 initial loss firms for the three-year period (Panel A of Table I) from 56 separate industries (Panel B of Table I).

Prior research and the current study show some clustering by industry among loss firms (e.g. business services, software, heavy construction and publishing). Dechow *et al*. (1996) and Farber (2005) find a similar industry clustering among fraud firms. Therefore, unless controlled for, an examination of governance changes surrounding reported initial losses has the potential to reveal characteristic governance behavior associated with industry-level changes rather than firm-level changes, i.e. those associated with the reporting of an initial loss in this instance. To control for this possibility and to account for any general underlying changes in governance across all industries during the period under study, a matched sample of control (i.e. profit) firms for 2004, 2005 and 2006 is also collected. A control company is defined as any company reporting a profit for three consecutive years ending in the year in question (2004, 2005 or 2006) which also reported a profit in the two years following the event year.

3.1.2 The matched sample. The matching of the control companies to each of the 138 loss firms is a two-stage process. The first stage is that the control firms are sorted by ICB subsector code (DATASTREAM: FTAG5) and the initial loss firms are first matched to the appropriate subsector group. The second stage involves selecting the control firm from the

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Table I Loss sample selection and loss firm characteristics

Panel A: Sample selection of 138 loss firm/years

Number of firm/years classified as loss between 2004 and 2006		2,397
Less		
Firm with preceding Losses	2,142	
Financial firms	10	
Duplicate firms: firms with more than one security type	26	
Firms with a foreign primary listing	36	
Firms with insufficient data/other	45	
Final sample		138

Panel B: Distribution of loss firms by industry classification benchmark (ICB) codes

ICB subsector code	*Industry description*	*No. of firms*	*ICB subsector code*	*Industry description*	*No. of firms*
2713	Aerospace	1	1775	General Mining	1
5751	Airlines	1	1777	Gold Mining	2
5371	Apparel Retailers	2	4533	Healthcare Providers	1
3355	Auto Parts	2	2357	Heavy Construction	6
4573	Biotechnology	2	3728	Home Construction	1
5553	Broadcast & Entertainment	3	5375	Home Improvement Retail	1
2353	Building Materials & Fixtures	3	2757	Industrial Machinery	4
2791	Business Support Services	16	2797	Industrial Suppliers	1
2793	Business Train & Employment	3	5555	Media Agencies	2
3763	Clothing & Accessory	3	4535	Medical Equipment	1
9533	Computer Services	5	4537	Medical Supplies	1
7535	Consumer Electricity	1	573	Oil Equipment & Services	2
2723	Containers & Package	2	1737	Paper	2
2717	Defense	1	3767	Personal Products	2
1773	Diamonds & Gemstones	1	4577	Pharmaceuticals	1
2727	Diversified Industrials	1	5557	Publishing	6
3722	Durable Household Products	1	3745	Recreational Products	2
2733	Electrical Equipment	3	5755	Recreational Services	2
2737	Electronic Equipment	3	5757	Restaurants & Bars	2
9574	Electronic Office Equipment	1	9576	Semiconductors	1
533	Exploration & Production	4	9537	Software	8
3573	Farming & Fishing	1	5377	Specialized Consumer Services	1
6535	Fixed Line Telecom	1	1357	Specialty Chemicals	1
3577	Food Products	2	5379	Specialty Retailers	5
5337	Food Retail, Wholesale	2	9578	Telecom. Equipment	5
3726	Furnishings	2	3747	Toys	3
5752	Gambling	3	2777	Transport Services	2
7573	Gas Distribution	1	5759	Travel & Tourism	1

subsector group with a market value (calculated as at the calendar year end when the initial loss firm was selected) closest to that of the initial loss firm. In some situations, there is no control firm with the same subsector code as the initial loss firm. In these situations, the matching criterion is relaxed to the broader industry code (DATASTREAM: FTAG2) where, as before, the control firm with the closest market value is chosen.

Table II indicates that the null hypothesis that the means of the ICB subsector code and ICB industry codes for initial loss and control firms are equal cannot be rejected. Thus, the industry matching of the initial loss and control sample has been successful.

Specifically, the *t*-statistics for the comparison of means test for the ICB subsector and industry codes are 0.21 and 0.00, respectively, indicating near perfect matching in the case of ICB subsector code and perfect matching in the case of industry-level code (given that the industry-level code is much broader than the subsector code, this is not surprising).

Because ICB code was prioritized over market value as a selection criterion to control for the possibility that changes in governance are associated with industry-level reasons rather than the loss shock, no a priori restriction on the size of the difference in market values between the initial loss and control firms is made. The result is that even though a matched

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Table II Matching statistics for loss and control firms

Variable	*Loss firm mean*	*Control firm mean*	t-*statistic*	*Loss firm median*	*Control firm median*	p-*value*
Subsector code	4,497	4,491	0.21	3,745	3,727	0.49
Industry code	3,876	3,876	0.00	3,000	3,000	1.00
Market value (£m.)	364.73	380.80	−0.32	39.39	57.36	0.20

Note: Losses are matched with control firms on the basis of year, IBC code and market value; the *t*-statistic is for the difference between the means of the matched pairs; the *p*-value is for the Wilcoxon signed-rank test

pair of firms may have identical ICB codes, the difference in market values between the pair could be significant even though the control company with the closest market value was selected. The results outlined in the final row of Table II indicate that the market values of the initial loss and control samples are not significantly different from each other. Accordingly, our industry and size matching of the samples is successful.

3.2 Measures and variables

The next task is to construct variables that represent the quality of a company's corporate governance. All data pertaining to a company's corporate governance are culled from their annual reports. These data include information on the structure of the board of directors, the directors themselves as well as the ownership of the company. The variables, outlined in Table III, combine to form the overall corporate governance architecture of a company. Some are substitutes and others are complements. Using all the above variables, individually will not capture how they combine to form the overall corporate governance system of a company. The variables selected reflect the main internal corporate governance variables which may change as a result of the altered circumstances of the company. The use of several individual governance variables may also lead to the problem of multicollinearity when estimating empirical models. There is no universally accepted

Table III Corporate governance variables

Variable	*Description*
BSize	The size of the board; number of members
% NEDs	The proportion of non-executive directors on the board
% INDs	The proportion of truly independent non-executive directors on the board. Independence is defined in accordance with the UK Corporate Governance code
NED Chair	Whether the Chairman is a non-executive; takes the value of 1 if true, otherwise 0
IND Chair	Whether the Chairman is an independent non-executive; takes the value of 1 if true, otherwise 0
Chair Never Exec	Whether the Chairman was ever a company executive; takes the value of 1 if true, otherwise 0
% IND Excl. Chair	The proportion of the board, excluding the Chairman, comprising of independent non-executive directors
% Tot Dir. Own	The proportion of shares held beneficially by all directors
% Top Dir. Own	The proportion of shares held beneficially by the top director (by number of shares owned)
% Tot. Prof. Own	The proportion of shares held by all professional investors in amounts > 3 per cent
% Top Prof. Own	The proportion of shares held by the top professional investor (by number of shares owned)
Number of Prof. Own	The number of professional investors owning shares
% Tot. Block Own	The proportion of shares held by all outside shareholders in amounts > 3 per cent

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theory that explains how individual governance mechanisms combine to form the overall governance of a company. Therefore, like Larcker *et al.* (2007), we use principal component analysis to combine the variables into general corporate governance constructs. The low correlation (not reported here) between board size (BSize) and the other individual governance variables in Table III indicates that this variable should be excluded prior to the exploratory analysis. This does not mean that BSize is not a relevant corporate governance variable in its own right, just that it does not combine meaningfully with other individual corporate governance variables to form one of the general corporate governance constructs in our study.

The Kaiser–Meyer–Olkin (KMO) test can be used to assess the factorability of the remaining variables. The KMO test is a measure of overall sampling adequacy which tests whether the partial correlations among variables are small. KMO takes values between 0 and 1, with a value less than 0.5, indicating that overall the variables have too little in common to warrant a factor analysis. The overall KMO value for the corporate governance variables in this study is 0.625, indicating moderate factorability. As a general rule, it is recommended that all factors with an eigenvalue greater than 1.0 should be kept because it indicates that the factor explains more of the variance than any of the corporate governance variables does on their own. Doing so results in the retention of three factors with eigenvalues of 4.69, 2.47 and 1.66 which together retain 73.5 per cent of the total variance in the original data. This reduced three-factor solution is then rotated using an oblique (promax) rotation that allows the retained factors to be correlated to enhance interpretability of the pattern matrix (see Table IV).

The three factors are made up from combinations of corporate governance variables that one might expect *ex ante* to be highly correlated. That is, all the variables relating to ownership load on the first factor, all the variables relating to the board load on the second factor and all the variables relating to the chair load on the third factor. Therefore, the three factors are named Ownership, Board and Chair (see Table V). We compute Cronbach's alphas (Table VI) for each of these corporate governance constructs and note that, with a minimum value of 0.862, all of them exceed the minimum reliability range of 0.60-0.70 suggested by Nunnally (1967, 1978).

It is observed that, by construction, each of the three factors (Board, Chair and Ownership) is increasing in the quality of corporate governance, i.e. higher values for each factor signifies better governance. Board and Chair are positively correlated with each other so can be considered complements; both are negatively correlated with Ownership so strong outside (weak inside) ownership is seen as a substitute for strong board-level governance. Overall, our change in governance analysis uses four variables, three of which are derived from the factor analysis (i.e. Board, Chair and Ownership) plus an individual variable (BSize) which is simply the number of members on the firm's board.

Table IV Principal component factor analysis: rotated factor loadings

Variable	*Factor 1*	*Factor 2*	*Factor 3*
% NEDs	−0.045	0.641	0.244
% INDs	−0.078	0.923	0.108
% IND Ex. Chair	−0.079	1.056	−0.294
NED Chair	−0.021	−0.089	0.949
IND Chair	−0.025	0.051	0.818
Chair Never Exec	−0.027	−0.121	0.990
% Tot. Dir. Own	−0.526	−0.331	−0.118
% Top Dir. Own	−0.543	−0.378	−0.119
% Tot. Prof. Own	0.962	−0.036	−0.050
# Prof. Own	0.630	0.179	0.008
% Top Prof. Own	0.799	−0.220	−0.051
% Tot. Block Own	0.955	−0.139	−0.037

Note: Variable definitions are included in Table III

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Table V Principal component factor analysis: named factors

Factor	*Loading*
Ownership	
% Tot. Dir. Own	−0.526
% Top Dir. Own	−0.543
% Tot. Prof. Own	0.630
# Prof. Own	0.799
% Top Prof. Own	0.955
% Block Own	0.962
Board	
% NEDs	0.641
% INDs	0.923
% IND Excl. Chair	1.056
Chair	
NED Chair	0.949
IND Chair	0.818
Chair Never Exec	0.990

Note: Variable definitions are included in Table III

Table VI Cronbach's alphas

Variable	*Sign*	*Alpha*
% Tot. Dir. Own	−	0.843
% Top Dir. Own	−	0.851
% Tot. Prof. Own	+	0.826
# Prof. Own	+	0.812
% Top Prof. Own	+	0.862
% Tot. Block Own	+	0.873
Ownership		*0.868*
% NEDs	+	0.943
% INDs	+	0.701
% IND Ex. Chair	+	0.745
Board		*0.862*
NED Chair	+	0.830
IND Chair	+	0.912
Chair Never Exec	+	0.750
Chair		*0.883*

Note: Variable definitions are included in Table III

The Board factor reflects the independence of the board from management and the Chair factor similarly reflects the independence of the Chair. The Ownership factor is more complex, as it has variables that load both positively and negatively on it. The latter pertain to variables relating to directors' ownership, while the former reflect variables relating to professional or institutional ownership.

There is evidence that the relationship between inside ownership and good governance is not linear across all ownership levels. The US empirical literature (Morck *et al.*, 1988; McConnell and Servaes, 1990 and 1995; Kole, 1995) generally suggests that management is aligned at low and possibly high levels of ownership, and is entrenched at intermediate ownership levels. This being a UK study, the results of Dahya *et al.* (1998) and Short and Keasey (1999) are particularly relevant to indicate where the inflection point between alignment and entrenchment might be. Specifically, Dahya *et al.* (1998) find that that top executives are entrenched when their ownership stakes rise above 1 per cent and Short and Keasey (1999) indicate that management become entrenched if they own more 12 per cent and aligned again at 25 per cent. Given that the average director ownership percentage (% Tot. Dir. Own.) in this study is 15.0 per cent (falling well within the

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entrenchment range), it is reasonable to conclude that, on average, the entrenchment effect is at play for firms in this study such that increased insider ownership can only be seen as detrimental to good corporate governance (i.e. the negative weightings on the inside ownership variables used to construct the Ownership factor make intuitive sense).

The expectation is that loss firms will have greater improvements or increases in Board and Chair governance variables than will their corresponding control firms over the same period. Similarly, Ownership should improve (increase) because, as discussed above, an increase in professional ownership and a decrease in management ownership would be considered an improvement when management ownership is, on average, already relatively high. It is not really possible to determine whether an increase or decrease in board size can be considered an improvement, as it is not possible to be categorical about the optimum size of a board. Thus, all we can predict for BSize is that it is likely to change around the time of the loss.

Descriptive statistics for Board, Chair, Ownership and BSize are outlined in Table VII. The mean of the three composite variables is zero by construction with positive values being preferable to negative values. The average board size is between 6 and 7 individuals.

3.3 The models used

We use a difference-in-difference analysis to establish if governance improves around the time an initial loss is incurred. In particular, the following model is estimated:

$$\Delta GOV = \alpha + \beta D_{LOSSt} + \theta Return + \varepsilon \quad (1)$$

where,

$$D_{LOSSt} = \begin{cases} 1 \text{ for loss sample} \\ 0 \text{ for control sample} \end{cases}$$

ΔGOV represents separately the change in each of the governance variables Board, Chair, Ownership and BSize. We use the company's stock market performance, *Return*, over the period surrounding the loss to control for the wider information environment. Return is the total shareholder return over the relevant period and full details of its calculation are outlined in Table X. There is evidence that the market's interpretation of accounting earnings or losses is always conditioned on other non-accounting information available (El-Gazzar, 1998; Freeman, 1987). It is also likely that a firm which can claim to have good standards of corporate governance will not perceive a need to alter it just because an initial loss is imminent. Accordingly, we extend the analysis above to take account of other

Table VII Descriptive statistics of corporate governance variable levels

All periods combined	*Obs.*	*Mean*	*SD*	*Median*	*Minimum*	*Maximum*	*Skewness*	*Kurtosis*
Combined initial loss and control firms								
Board	1,002	0.000	0.885	0.017	−2.178	2.299	−0.167	2.612
Chair	1,002	0.000	0.900	0.273	−1.094	0.954	0.172	1.279
Ownership	1,002	0.000	0.776	0.056	−2.587	2.086	−0.494	3.251
BSize	1,002	6.663	2.306	6.000	1.000	15.000	0.859	4.078
Initial loss firms								
Board	492	0.053	0.883	0.089	−2.178	2.044	−0.237	2.656
Chair	492	0.092	0.898	0.273	−1.094	0.954	−0.343	1.335
Ownership	492	0.114	0.766	0.218	−2.010	2.086	−0.453	3.046
BSize	492	6.637	2.064	6.000	1.000	13.000	0.365	2.840
Control FIRMS								
Board	510	−0.051	0.885	−0.067	−2.178	2.299	−0.100	2.597
Chair	510	−0.089	0.894	0.273	−1.094	0.954	−0.011	1.267
Ownership	510	−0.110	0.770	−0.046	−2.587	1.776	−0.559	3.402
BSize	510	6.688	2.519	6.000	2.000	15.000	1.093	4.365

information available to investors and a firm's standard of corporate governance before the loss. In particular, the following model is estimated:

$$\Delta GOV = \alpha + \delta_1 D_{LOSSt}{}^{*} D_{LOWGOVt-1} + \delta_2 D_{LOSSt}{}^{*} D_{HIGHGOVt-1} + \theta Return + \varepsilon \qquad (2)$$

where $D_{LOWGOVt-1}$ is a dummy variable which takes the value 1 when *ex ante* governance for Board, Chair or Ownership is of lower quality and 0 otherwise. Given that, by construction, all of these composite governance variables have a mean of 0, this dummy takes the value 1 when the variables are negative and zero otherwise. Similarly, $D_{HIGHGOVt-1}$ takes the value 1 when *ex ante* governance for Board, Chair or Ownership is of superior quality (positive) and zero otherwise. BSize is a little different, as it merely reflects the size of the board. For convenience, $D_{HIGHGOVt-1}$ takes the value 1 if BSize is $>$ its median value (six) at time $t-1$, otherwise 0 and $D_{LOWGOVt-1}$ is equal to 1 if BSize is ≤ 6 in time $t-1$, otherwise 0. All other variables are as previously specified.

Constructed thus, the intercept reflects the underlying change in governance during the test period for the control sample, $D_{LOSSt}{}^{*} D_{LOWGOVt-1}$ reflects the difference in the differences in governance across the test period between loss firms with low quality *ex ante* governance and the control sample, and $D_{LOSSt}{}^{*} D_{HIGHGOVt-1}$ reflects the difference in the differences in governance changes across the test period between loss firms with high-quality *ex ante* governance and the entire control sample.

4. Results

4.1 Calculating corporate governance changes

A fundamental prediction is that an initial loss is an exogenous event that motivates a firm to undertake change. Change may be necessary because if losses perpetuate then the firm will fail. We predict that firms have sufficient knowledge about their performance to anticipate the *reporting* of an initial loss. Accordingly, we predict that the initial loss will motivate changes that appear to predate the loss itself. Figure 1 outlines the time line of surrounding the initial loss event which occurs in fiscal year *t*. GOV_t is the governance as at the financial year end of year *t* but not necessarily that reported in the financial statements of year *t*.

Figure 1 illustrates that the loss is incurred in year *t*, i.e. between $t-1$ and *t*, and is reported between *t* and $t + 1$, i.e. in year $t + 1$. It is clear from Figure 1 that firm has ample opportunity to react to the loss before it is reported. Therefore, our first measure of the governance changes is from the end of year $t-1$ to the end of year *t* (i.e. corresponding to the 12-month period, the loss is incurred and in anticipation of the reporting of the loss event); we label this period $\Delta 1$. The second period over which we measure governance changes is the 24-month period from $t-1$ to $t + 1$, labeled $\Delta 2$.

4.2 Univariate analyses

Table VIII outlines the changes in governance over the periods described above for both the initial loss and control samples and also includes a univariate difference-in-difference analysis. Table outlines the results pertaining to period $\Delta 1$. This table includes the

Figure 1 Calculating corporate governance changes

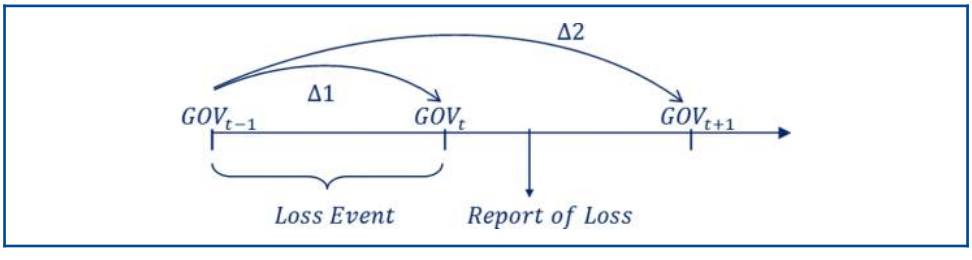

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Table VIII Univariate tests of pre- and post-period differences and difference-in-differences between the initial loss and control samples governance levels and changes for test period Δ1

	Initial loss firms				*Control firms*				p-*value of testing Pre-period differences column (1)-(5) (9) two-tailed* p-*values:* t-*test sign rank*	p-*value of testing Post-period differences column (2)-(6) (10) two-tailed* p-*values:* t-*test sign rank*	p-*value of testing DIDs column (3)-(7) (11) two-tailed* p-*values:* t *sign rank*
	n = *138 Pre-period (1) Mean (Median) [SD]*	n = *138 Post-period (2) Mean (Median) [SD]*	n = *138 Change (3) Mean (Median) [SD]*	*Significance of change (4) two-tailed* p-*values:* t-*test sign rank*	n = *138 Pre-period (5) Mean (Median) [SD]*	n = *138 Post-period (6) Mean (Median) [SD]*	n = *138 Change (7) Mean (Median) [SD]*	*Significance of change (8) two-tailed* p-*values:* t-*test sign rank*			
Board	−0.037	0.051	0.090	0.03	−0.063	−0.078	−0.015	0.70	0.78	0.19	0.07
	(−0.067)	(0.089)	(0.000)	0.04	(0.080)	(−0.067)	(0.000)	0.66	0.57	0.17	0.07
	[0.777]	[0.837]	[0.495]		[0.853]	[0.860]	[0.468]				
Chair	0.060	0.064	0.010	0.77	−0.108	−0.078	0.030	0.29	0.12	0.21	0.68
	(0.273)	(0.273)	(0.000)	0.10	('0.273)	(0.272)	(0.000)	0.20	0.12	0.15	0.75
	[0.891]	[0.901]	[0.413		[0.903]	[0.904]	[0.328]				
Ownership	−0.033	0.114	0.154	<0.01	−0.189	−0.110	0.079	<0.01	0.09	0.02	0.04
	(−0.001)]	(0.221)	(0.091)	<0.01	(−0.178)	(−0.092)	(0.044)	<0.01	0.07	0.02	0.04
	[0.758	[0.791]	[0.346]		[0.785]	[0.768]	[0.232]				
BSize	6.725	6.708	−0.036	0.70	6.623	6.630	0.007	0.93	0.68	0.76	0.73
	(6.000)	(6.000)	(0.000)	0.50	(6.000)	(6.000)	(0.000)	0.82	0.19	0.41	0.94
	[2.177]	[2.122]	[1.127]		[2.594]	[2.494]	[1.001]				

Note: This table provides some summary statistics and includes univariate tests of significance for the governance variables for the initial loss and control samples for time periods from time $t-1$ to $t+1$, as well as tests of the difference in the pre- and post-period values between the initial loss and control samples and tests of the difference-in-difference (DID) between the initial loss and control samples for the test periods D1. Time *t* includes panel data from years 2004, 2005 and 2006. The decrease in the number of firms (initial loss and control) across time is due to firms liquidating or being acquired

corporate governance levels at time $t-1$ and time t as well as the governance changes during this one-year test period ($\Delta 1$). Columns 1, 2 and 3 outline the pre-period corporate governance levels, post-period corporate governance levels and change in corporate governance over the period, respectively, for the initial loss firms. Column 4 includes the significance level of the change in the mean and median of the corporate governance variables for the initial loss firms. Columns 5 through to 8 outline the same statistics for the control sample. Column 9 contains the significance levels for differences in the corporate governance variables between the initial loss and control samples at the beginning of the period; Column 10 contains the same statistics for the end of the period. Finally, and most importantly, Column 11 contains the significance levels for the difference in the changes in governance over the period between initial loss and control firms, i.e. a univariate difference-in-difference analysis.

Table VIII Column 4 indicates that there are significant changes in the corporate governance of initial loss firms in the year of the loss but prior to its announcement. The results also indicate that initial loss firms improve the quality of their corporate governance relative to the control sample with respect to their Board and Ownership (Column 11). An analysis of Columns 3 and 7 shows that, in the case of Board, this is primarily due to the boards of loss companies improving while those of the control companies remain unchanged. For Ownership, initial loss and control firms both display improvements in corporate governance over period $\Delta 1$, but the former improve more.

Table IX includes the corporate governance levels in each of $t-1$ and $t+1$ as well as the governance changes during this two-year test period ($\Delta 2$) and the difference in these changes between the initial loss and control samples. The results indicate (Column 4) that initial loss firms improve the underlying quality of corporate governance for all of the governance variables in this period, i.e. the mean/median p-values for Board, Chair, Ownership and Size are all significant. However, unlike the results in Table VIII, the results from the univariate difference-in-difference analysis are not significant (Column 11). Columns 4 and 8 help throw some light on why this is so – Ownership also improves significantly for the control firms, so there is no relative improvement for initial loss firms. While the initial loss firms have superior Ownership relative to the control firms post the loss, the situation is less clear with respect to Board, Chair and BSize. In all cases, the initial loss firms improve their corporate governance with respect to these variables while there is no significant change in them for the control firms. Furthermore, initial loss firms have superior Chair to control firms post-loss but not pre-loss. Nevertheless, the difference-in-difference analysis proves insignificant for all corporate governance variables. We also examine changes in corporate governance between t and $t+1$ using a difference-in-difference analysis (not tabulated) but do not find any significant results. Overall, Tables VIII and IX reports clear evidence of an improvement in the corporate governance of initial loss firms around the announcement of the loss. Most if not all of the changes are effected before the loss is announced.

4.3 Mutivariate regressions analyses

Accounting earnings or losses are always interpreted within the context provided by alternative information sources (Donnelly and Lynch, 2002). Accordingly, model (1) is estimated to contextualize the results from the univariate analysis in the information environment. The results from this analysis are included in Table X which, like Tables VIII and IX, has Panel A which reports results for the fiscal year of the loss but before the loss is announced (i.e. $\Delta 1$) and Panel B which covers the 24-month period beginning at the start of the financial year in which the loss is incurred (i.e. $\Delta 2$). The results from the univariate analysis are confirmed by the results of the two-tailed test of significance (i.e. a Wald test) included at the end of Panel A. Specifically, the hypothesis that $Intercept + D_{LOSSt} = 0$ is rejected for Board and Ownership with p-values of 0.03 and < 0.01, respectively. These results show that for these variables, corporate governance increases quickly in

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Table IX Univariate tests of pre- and post-period differences and difference-in-differences between the initial loss and control samples governance levels and changes for test period Δ2

	Initial loss firms				*Control firms*						
	n = *138* *Pre-period* *(1)* *Mean (Median)* *[SD]*	n = *114* *Post-period* *(2)* *Mean (Median)* *[SD]*	n = *114* *Change* *(3)* *Mean (Median)* *[SD]*	*Significance of change* *(4)* *Two-tailed* p-*values:* t-*test sign rank*	n = *138* *Pre-period* *(5)* *Mean (Median)* *[SD]*	n = *124* *Post-period* *(6)* *Mean (Median)* *[SD]*	n = *124* *Change* *(7)* *Mean (Median)* *[SD]*	*Significance of change* *(8)* *Two-tailed* p-*values:* t-*test sign rank*	p-*value of testing* *Pre-period differences column* *(1)-(5) (9)* *Two-tailed* p-*values:* t-*test sign rank*	p-*value of testing* *Post-period differences column (2)-(6) (10)* *Two-tailed* p-*values:* t-*test sign rank*	p-*value of testing* *DIDs column* *(3)-(7) (11)* *Two-tailed* p-*values:* t-*test sign rank*
Board	−0.037	0.115	0.178	<0.01	−0.063	−0.054	0.031	0.54	0.78	0.22	0.17
	(−0.067)	(0.200)	(0.038)	<0.01	(0.080)	(−0.102)	(0.000)	0.12	0.57	0.10	
	[0.777]	[0.967]	[0.714]		[0.853]	[0.908]	[0.567]				
Chair	0.060	0.171	0.120	0.09	−0.108	−0.113	0.033	0.46	0.12	<0.01	0.41
	(0.273)	(0.614)	(0.000)	0.05	(0.273)	(0.273)	(0.000)	0.48	0.12	<0.01	0.38
	[0.891]	[0.900]	[0.744]		[0.903]	[0.893]	[0.498]				
Ownership	−0.033	0.161	0.209	<0.01	−0.189	−0.070	0.167	<0.01	0.09	0.03	0.58
	(−0.001)	(0.262)	(0.185)	<0.01	(−0.178)	(0.019)	(0.107)	<0.01	0.07	0.02	0.68
	[0.758]	[0.762]	[0.480]		[0.785]	[0.761]	[0.409]				
BSize	6.725	6.632	−0.246	0.07	6.623	6.653	−0.113	0.31	0.68	0.69	0.67
	(6.000)	(7.000)	(0.000)	0.10	(6.000)	(6.000)	(0.000)	0.47	0.19	0.29	0.93
	[2.177]	[1.979]	[1.449]		[2.594]	[2.541]	[1.238]				

Note: This table provides some summary statistics and includes univariate tests of significance for the governance variables for the initial loss and control samples for time periods from time $t-1$ to $t+1$, as well as tests of the difference in the pre- and post-period values between the initial loss and control samples and tests of the difference-in-difference (DID) between the initial loss and control samples for the test periods Δ2. Time t includes panel data from years 2004, 2005 and 2006. The decrease in the number of firms (initial loss and control) across time is due to firms liquidating or being acquired

Table X Testing the average effect of an initial loss event on corporate governance

$\Delta GOV = \alpha + \beta D_{LOSS\,t} + \theta Return + \varepsilon$

Independent variables	*Board (t-stat)*	*Chair (t-stat)*	*Ownership (t-stat)*	*BSize (t-stat)*
Panel A: Test period Δ1				
Intercept	−0.025 (−0.56)	0.052 (1.54)	0.104 (3.93)***	−0.007 (−0.07)
$D_{LOSS\,t}$	**0.113 (1.90)***	**−0.037 (−0.82)**	**0.054 (1.51)**	**−0.032 (−0.24)**
Return	0.041 (0.58)	−0.010 (−1.83)*	−0.114 (−2.67)***	0.064 (0.41)
n	276	238	238	238
R^2 (%)	1.3	1.0	4.0	1.0
Two-tailed p-*values for tests of significance*				
Intercept + $D_{LOSS\,t} = 0$	0.03	0.64	<0.01	0.66
Panel B: Test period Δ2				
Intercept	0.016 (0.25)	0.054 (0.86)	0.205 (4.68)***	−0.152 (−1.14)
$D_{LOSS\,t}$	**0.157 (1.84)***	**0.074 (0.88)**	**0.017 (0.30)**	**−0.107 (−0.60)**
Return	0.031 (0.55)	−0.043 (−0.78)	−0.079 (−2.03)**	0.082 (0.69)
n	238	238	238	238
R^2 (%)	1.4	1.0	1.9	1.0
Two-tailed p-*values for tests of significance*				
Intercept + $D_{LOSS\,t} = 0$	<0.01	0.03	<0.01	0.04

Notes: This table reports the results of testing the effect of an initial loss on corporate governance. The test (loss sample) consists of 119 firms which reported a loss in year *t* following two years of reporting a profit and the control sample consists of 119 firms matched for industry and market value which reported a profit in each of year $t - 2$ to $t + 2$. Financial information is obtained from Datastream/Worldscope. All continuous variables are winsorized at the 1 and 99% levels to mitigate the influence of outliers. Estimated coefficients are followed by *t*-statistics (). Significance levels at 10, 5 and 1% levels are indicated by *; **; *** respectively; bold value indicates relevant variables

Variable definitions:

- *Δ Gov* = the change in governance during the test period (i.e. Δ1 or Δ2). The method by which the governance variables are calculated is detailed in Chapter 3.
- $D_{LOSS\,t}$ = a dummy variable equal to one for firms that report a loss, and zero otherwise.
- *Return* = the stock market return over the test period calculated for test period Δ1 as:

$$r_t = \left[\frac{P_t - P_{t-1}}{P_{t-1}}\right] + D_t$$

where, D_t is the 12-month forward dividend yield and for test period Δ2 as:

$$r_t = \left[\frac{P_{t+1} - P_{t-1}}{P_{t-1}}\right] + [D_t^*(1 + Capital\ Gain_{t+1})] + \left[D_{t+1}^*\left(\frac{P_t}{P_{t-1}}\right)\right]$$

where

$$Capital\ Gain_{t+1} = \left[\frac{P_{t+1} - P_t}{P_t}\right]$$

and D_t and D_{t+1} are the 12-month forward dividend yields.

anticipation of the reporting of the initial loss. The results over the longer time period included in Panel B are even more compelling. The hypothesis that *Intercept* + D_{LOSSt} = 0 is rejected in each of the four corporate governance specifications with *p*-values < 0.01 for the Board and Ownership specifications and $p = 0.03$ and 0.04 for the Chair and BSize specifications, respectively. That said, however, the primary coefficient of interest in both Panels of Table X is that on D_{LOSSt}, or β. These results indicate that, with the exception of Board (at the 10 per cent level), the results for the initial loss sample are not significantly different from the control sample.

4.4 Conditioned regression analyses

The standard of corporate governance in a firm will determine the scope for improvement. Accordingly, we estimate model (2) which conditions that analysis in Table X by the *ex ante* quality of corporate governance. The results are included in Table XI. The primary coefficient of interest in both Panels of Table XI is that on $D_{LOSSt}{}^*D_{LOWGOVt-1}$, or δ_1. The results

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Table XI Testing the effect of an initial loss event on governance conditioned by *ex ante* corporate governance characteristics

$\Delta GOV = \alpha + \delta_1 D_{LOSS\,t} * D_{LOWGOV\,t-1} + \delta_2 D_{LOSS\,t} * D_{HIGHGOV\,t-1} + \theta Return + \varepsilon$

Independent variables	*Board (t-stat)*	*Chair (t-stat)*	*Ownership (t-stat)*	*BSize (t-stat)*
Panel A: Test period Δ1				
Intercept	−0.026 (−0.59)	0.053 (1.57)	0.105 (3.97)***	−0.005 (−0.06)
$D_{Loss\,t} * D_{Lowgov\,t-1}$	**0.183 (2.56)****	**0.050 (0.85)**	**0.092 (2.14)****	**0.202 (1.32)**
$D_{LOSS\,t} * D_{HIGHGOVt-1}$	0.040 (0.55)	−0.101 (−1.91)*	0.013 (0.30)	−0.319 (−1.94)*
Return	0.046 (0.66)	−0.103 (1.91)*	−0.117 (−2.75)***	0.056 (0.36)
n	276	276	276	276
R^2 (%)	2.4t	3.3	5.0	3.0
Two-tailed p-values for tests of significance of loss firms				
$D_{LOSS\,t} * D_{LOWGOV\,t-1}$ + *Intercept = 0*	<0.01	0.04	<0.01	0.02
$D_{LOSS\,t} * D_{HIGHGOV\,t-1}$ + *Intercept = 0*	0.81	0.25	<0.01	0.11
$D_{LOSS\,t} * D_{LOWGOV\,t-1} = D_{LOSS\,t} * D_{HIGHGOV\,t-1}$	0.08	0.02	0.10	<0.01
Panel B: Test period Δ2				
Intercept	0.016 (0.25)	0.059 (1.01)	0.206 (4.81)***	−0.146 (−1.16)
$D_{Loss\,t} * D_{LOWGOV\,t-1}$	**0.217 (2.13)****	**0.446 (4.38)*****	**0.150 (2.16)****	**0.512 (2.50)****
$D_{LOSS\,t} * D_{HIGHGOV\,t-1}$	0.087 (0.82)	−0.194 (−2.13)**	−0.122 (−1.73)*	−0.757 (−3.64)***
Return	0.032 (0.57)	−0.055 (−1.06)	−0.082 (−2.14)**	0.069 (0.61)
n	238	238	238	238
R^2 (%)	1.9	12.8	6.5	11.2
Two-tailed p-values for tests of significance of loss firms				
$D_{LOSS\,t} * D_{LOWGOV\,t-1}$ + *Intercept = 0*	<0.01	<0.01	<0.01	<0.01
$D_{LOSS\,t} * D_{HIGHGOV\,t-1}$ + *Intercept = 0*	0.25	0.06	0.15	<0.01
$D_{LOSS\,t} * D_{LOWGOV\,t-1} = D_{LOSS\,t} * D_{HIGHGOV\,t-1}$	0.28	<0.01	<0.01	0.03

Notes: The information in this table is the same as the for Table VIII with the addition that:

$D_{LOWGOV\,t-1}$ = a dummy variable equal to 1 if a firm (loss or control) has a *GOV* value below the mean in the year before the loss, and 0 otherwise

$D_{HIGHGOV\,t-1}$ = a dummy variable equal to 1 if a firm (loss or control) has a *GOV* value above the mean in the year before the loss, and 0 otherwise;

Significance levels at 10%, 5% and 1% are indicated by *; **; *** respectively; bold value indicates relevant variables

in Panel A indicate that δ_1 is significantly positive for Board and Ownership. Thus, in keeping with the univariate results from Tables VIII and IX, we infer that the quality of the board and ownership of initial loss firms with prior corporate governance weakness improves relative to the control sample before the loss is announced.

The results in Panel B for the full 24-month period surrounding the initial loss are even more compelling with a significantly positive δ_1 for all governance variables. As before the interpretation of the positive coefficient on Board and Ownership indicates, an improvement in corporate governance and the same is also true for Chair. The interpretation of the δ_1 coefficient when BSize is the dependent variable is slightly different. Because of the way the dummy variables for BSize are constructed, coefficients δ_1 and δ_2 represent changes in the size of the board rather than changes in the quality of the board. The significantly positive δ_1 and the significant negative δ_2 coefficients for BSize indicate that initial loss firms with a relatively small (large) boards increase (decrease) the size of their board relative to the control sample.

Some of the other significant δ_2 coefficients are also worthy of comment. The negative δ_2 coefficient when Chair is the dependent variable (ΔGOV) suggests that firms with independent chairs revert to appointing a non-independent chairman as a response to the initial loss. This could be interpreted as initial loss firms with an independent Chair deciding to replace that Chair with a current/previous insider potentially better equipped to lead the firm back to profitability. When Ownership is the dependent variable, the significantly negative coefficient on $D_{LOSS\,t} * D_{HIGHGOV\,t-1}$ indicates that the underlying improvement in

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Ownership in response to the initial loss event by the sub-sample of initial loss firms with higher quality *ex ante* Ownership is lower than that of the control sample. However, the overall response for this sub-sample is still insignificantly positive, i.e. $\alpha + \delta_2 = 0.206 - 0.122 = 0.084$ ($p = 0.15$). This contrasts with the equivalent test for initial loss firms with lower quality *ex ante* corporate governance, as $\alpha + \delta_1$ is invariably positive and significant (see the pre-penultimate rows of Panels A and B of Table XI). Thus, we infer that the initial loss, generally, has a far more significant effect on the corporate governance of companies where it might be perceived as relatively weak before the loss and that this effect is positive and robust to the information environment of the firm. We also note that some of the changes in corporate governance such as increasing/decreasing board size and replacing of an independent chairman with an executive chairman can be interpreted as rebalancing corporate governance rather than strictly improving it. This is not surprising, as one cannot be definitive about what the optimum governance structure is for a firm.

5. Summary and conclusions

There is ample evidence of major economic events precipitating corporate governance changes at national level; for example, the Sarbanes–Oxley Act followed the Enron and other scandals of 2001 and 2002. While some research has been done relating to changes in management (particularly chide executive officers) following poor performance, there is a paucity of evidence pertaining to what instigates corporate governance changes at the firm level. In this paper, we considered the implications of a firm sliding from profitability into a loss-making scenario as a catalyst for change in a firm's corporate governance.

Our analysis is based on a sample of UK companies which incur their first loss during the years 2004 to 2006. We also form a control sample matched on industry class and size. Using these samples, we use a difference-in-difference analysis to test if incurring an initial loss is associated with corporate governance changes. Our univariate analysis reveals that corporate governance changes are associated with the initial loss and mainly occur before the loss is announced. There are clear differences in the loss sample relative to the control sample for the variables representing the board of directors and ownership.

Our multivariate analyses, which control for other information and the standard of corporate governance before the initial loss, produce stronger results, especially when the longer 24-month period surrounding the loss is considered. There are clear changes in the initial loss sample conditioned by *ex ante* corporate governance quality relative to the control sample with respect to all aspects of corporate governance considered. The evidence, in general, suggests that although corporate governance exhibits stickiness (as evidenced by the lack of improvement in corporate governance for both those initial loss firms with better governance *ex ante* as well as the control sample across the test period), an initial loss does motivate an improvement in corporate governance where a relative governance weakness existed prior to the loss, i.e. firms do not improve corporate governance absent the impetus and need to do so. In addition, board size regresses toward its mean following an initial loss.

Our results contribute to the literature which asserts that although a firm's corporate governance can be sticky and slow to change, it is not entirely fixed and responds to negative shocks.

Note

1. There is a difference in Ownership between the initial loss and control samples, but this is not significant at the 5 per cent level. However, closer investigation reveals that the average of total director ownership is higher for the control sample at the 10 per cent level, indicating that firms with larger management ownership are more successful at avoiding initial losses. This is consistent with inside owners taking steps to mitigate the idiosyncratic risk that they are more exposed to than institutional owners.

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