

Is all publicity good publicity? The impact of direct and indirect media pressure on the adoption of governance practices

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Abstract

Research Summary: Media coverage is known to influence firms' behavior, but it is less known whether coverage of firms' partners also has an effect. In a context of governance practices' diffusion in Canada, we distinguish the effect of direct media coverage of the firm's activities, from indirect coverage, defined as media coverage of the firms' interlock partners. We examine whether the coverage is laden with positive or negative emotions. We find that both direct and indirect media coverage have a strong effect on firms' adoption of practices, either when the tone is positive or negative. The findings indicate that media coverage has broader and deeper effects on firms' actions than previously known.

Managerial Summary: Firms are under pressure from many outside stakeholders who want them to change. This pressure is felt strongly when it is expressed through mass media attention to the firms or their practices, and often persuades management to make changes. We examine the effect of media coverage on changes in governance practices, finding that media influences reach all the way to the board. In addition, we find that both critique and praise can lead a firm to make changes in its governance practices. The media attention does not even have to be directed to the firm itself: when media targets companies that share common directors with the focal firm, the firm's board usually responds by adopting governance practices as if media targeted the firm.

KEY WORDS

board reform, diffusion, governance, media coverage, networks

Firms have multiple stakeholders, with formal and informal authority, and need to respond to these stakeholders' pressures (Henisz, Dorobantu, & Nartey, 2014; Kacperczyk, 2009; Rowley, 1997). It is well known that firms live in the public eye, and attention can be drawn to their behaviors by many sources (Pozner, Mohliver, & Moore, 2018). For example, the tactics of social movements include selection of when to target firms, which firms to target, and when and how to target them (Rowley, Shipilov, & Greve, 2017). Social movements also make use of media to put pressure on firms, including creating rating or ranking systems that evaluate them along dimensions that are of interest to the social movement and newsworthy to media (Abagail & Donald, 2000; Elsbach & Kramer, 1996; Espeland & Sauder, 2007).

The tone of firms' media coverage is important because it influences a wide range of important outcomes. Firm behaviors that media labels as misconduct or inappropriate lead to loss of revenue (Jonsson & Buhr, 2011; Jonsson, Greve, & Fujiwara-Greve, 2009). Board members and executives can experience negative career outcomes after becoming associated with negative events that have potential for media coverage (Cowen & Marcel, 2011; Gomulya & Boeker, 2016; Marcel & Cowen, 2014). Financial markets can assess a firm as being a risky asset as a result of negative media coverage (Kölböl, Busch, & Jancso, 2017). Conversely, positive media coverage has benefits in financial markets (DeFanti & Busch, 2011; Pollock, Rindova, & Maggitti, 2008). These findings suggest that executives should pay close attention to when and how their firm is covered in the media.

Media coverage can be utilized as an external oversight mechanism. In public corporations, governance oversight is necessary for the reduction of agency costs which result from the separation of ownership, in the hands of shareholders, and control, in the hands of managers (Fama & Jensen, 1983). Media coverage of a firm also reduces information asymmetry between management and shareholders and penalizes firms whose actions or performance dynamics run counter to shareholder interests (Bednar, 2012). Thus, media attention and governance practices aimed at increasing transparency and aligning interests of managers with those of the shareholders should be related. There should be a link between media coverage of a firm with the propensity of companies to adopt practices affecting board composition, board processes, or firm ownership that increase transparency and facilitate oversight.

We look at the relationship between firm media coverage and board reform adoption. First, existing research focuses on the impact of a firm's own media coverage on its actions (Bednar, 2012). In general, research predicts that firms dislike governance changes and that they change only due to the exposure to negative coverage while resisting changes when coverage is positive. While we follow the same logic in our hypotheses and replicate the negative coverage results, we find the opposite effects of positive coverage. The stronger is the positive coverage of the firm, the more likely is the firm to adopt new governance practices consistent with increasing the outsiders' oversight of the company's management.

Second, we propose to supplement the focus on the firm's own media coverage with the network view. Indeed, prior research has already shown that network ties such as board interlocks are conduits through which practices and behaviors diffuse (e.g., Davis & Greve, 1997). Assessments of practices and behaviors may diffuse through the same conduits. We propose that the influences of positive or negative media coverage on the firms' adoption of governance practices might come not

only from the firm's own (direct) coverage, but also be spillovers from its network partners' (indirect) media coverage.

Empirically, we examine how the adoption of governance practices is influenced by media coverage of the focal firm and of firms that comprise its board interlock ties in Canada. We build on prior research finding effects of firm performance, board interlocks, and overall level of compliance with governance practice demands (Rowley et al., 2017), and add data on the media coverage of each firm in the sample. We also exploit an exogenous shock of 2007–08 financial crisis, which drew attention to governance of Canadian financial services and securities trading companies. We predict and find that firms respond to both direct and indirect media coverage through adoption of board reform practices. Negative coverage findings confirmed our predictions: the higher the negative coverage of the firm and of its interlocks, the higher is the probability that the firm will adopt board reform practices. However, contrary to the conventional prediction that positive media coverage should shield the firm from the need to change and, consequently, adopt practices, we find that positive direct and indirect coverage is also responsible for adoptions.

We believe that this surprising effect occurs because positive coverage makes decision makers believe more in transparency as a solution to the agency problem and thus prompts more adoption of board reform practices that are consistent with increased transparency. Thus, when they find themselves in a positive spotlight, they react by adopting governance practices that are in sync with societal demands of higher transparency and accountability, consistent with the prediction of research on managerial fads (Abrahamson, 1991; Abrahamson & Eisenman, 2008).

1 | MEDIA INFLUENCE ON BOARD DECISION-MAKING

The starting point of theory on media influences on firms is that the external environment and its view on the firm have important consequences (Oliver, 1991). Firms monitor their reputations, detect threats to their relative standing, and decide how to act in response to these threats. Such firm monitoring and reactions have been documented in research on environmental feedback (Rowley et al., 2017). Negative media responses to actions taken by the firm can lead to correction of these actions (Weber, Rao, & Thomas, 2009; Zhang & Luo, 2013) or to announcement of unrelated prosocial actions as a distraction (McDonnell & King, 2013). Firms change their plans when environmental responses are unfavorable (Ingram, Yue, & Rao, 2010; Yue, Rao, & Ingram, 2013), and make changes in response to trends that can be detected through media (Greve & Yue, 2017; Haveman, Rao, & Paruchuri, 2007).

Prior work on the relationship between media coverage and strategic change focused on the focal firm. Bednar (2012) examined how positive or negative coverage of the firm's governance- and shareholder-related issues affects the likelihood of its CEO change or adoption of board independence practices. Bednar, Boivie, and Prince (2013) explore how negative media coverage influences firms' resource allocations, and argue that media has an impact on firm's actions because it exposes decision makers to views of different external stakeholders and, irrespective of the sizes of the stakeholders' communities, affects public opinion about the firm and acts as an independent investigator for the society.

Governance practices providing greater transparency and independence of the boards are created to alleviate principal-agent problems and subject self-interested management to the external oversight. Media plays an especially important role by reducing information asymmetry between the management and shareholders. Often, media provides negative insights into firms' governance and shareholder-value creation practices, especially when the firms' governance standards are very low,

or when the firms fail to meet shareholder expectations. The latter can happen when the firm experiences losses in its share price due to management inefficiencies or when the firm's governance is not fully aligned with shareholder expectations (Bednar, 2012). Media can also praise the firm for its governance or shareholder value creation. Thus, the firm is surrounded by media chatter related to its ability to create and distribute shareholder value, which contributes to the firm's reputation and to that of its directors.

While firms have a variety of strategic options available to respond to media coverage, reactions through altering governance practices can have important consequences to the firms' future. Governance changes come to the decision makers' radar as possible responses to media coverage because decision makers routinely engage in local search. If media criticism is related to issues of the principal-agent problems, that would include discussions of shareholder value, transparency of financial reporting or the nature of relationships between the management and the board, then decision makers can turn to the adoption of governance practices that would signal the firm's commitment to greater shareholder value creation, alignment of interests between managers and shareholders, or heightened transparency.

Despite the role of media in examining how the principal-agent problem is solved in firms and the plausibility of reactions to such coverage in the form of governance practice adoptions, studies have not yet demonstrated significant effects of media coverage on board reforms. For example, Shipilov, Greve, and Rowley (2010) examined multiwave diffusion of governance practices in Canada and used both positive and negative media coverage as control variables, but did not find significant effects of the relationship between media coverage and adoption of board and director evaluation practices, two specific board reform practices which were actively diffusing within that study's observation window. This "nonfinding" could be because there is a broader set of governance practices than just increasing the number of independent directors or board process evaluations, so research may have examined an overly narrow range of responses. Another explanation could be that when studying firm governance responses to the coverage of governance and shareholder issues, one needs to be very careful with identification. Firms with better shareholder value maximization or better governance might get better media coverage and the other way around. Such patterns of reverse causality can mask the relationships in the data.

1.1 | Direct media coverage

Negative media coverage should have the most immediate or direct effect on firm behavior, as this creates a pressing reputational problem for firm executives or the board of directors to solve. The theory of problemistic search indicates that the firm will respond to negative feedback by searching for solutions in the neighborhood of problems they face (Cyert & March, 1963). The board and its governance practices contribute to the firm's legitimacy, which influences its ability to effectively interact with governments, regulatory bodies, customers, financial markets, and other stakeholders (Zajac & Westphal, 1996). Personal reputations of individual board members are tied to the boards they sit on, so they are also incentivized to respond to negative media attention centered on their firms. When the media negatively discusses issues related to the agency problems (firm performance, shareholder value, management/director alignment), boards might seek solutions to these problems in the form of governance reforms.

It is important to note that negative media coverage is different from the absence of positive coverage. An increase in negative coverage means that the company's name is increasingly surrounded by negative words and phrases that are distinct from neutral or positive descriptions. The greater is

the negative coverage of company-related issues, the more likely will this coverage be brought to the directors' attention and discussed during the board meetings. As directors witness media criticism for poor performance or the lack of transparency, they may worry about their personal and company's reputations. Thus, they may react by adopting board reform practices that enhance transparency and at least rhetorically are aimed at improving firm performance (Rowley et al., 2017). These effects are likely to hold within and across firms. Directors of firms experiencing more negative coverage will adopt more practices than directors of firms experiencing less negative coverage. Likewise, directors of a firm will augment the rate of practice adoption when it receives increased negative coverage and decrease the rate when the negative coverage recedes. Hence, we propose:

Hypothesis 1a: *The more negative is the tone of the company's own media coverage, the more likely is the company to adopt new board reform practices.*

Conversely, media coverage with a positive tone should decrease the likelihood of adopting board reform practices because it suggests that the firm is already viewed positively by the journalists and it has a positive reputation. Positive performance has been associated with a reduction in the likelihood of organizational change. For example, well performing U.S. radio stations had lower likelihood of format change, well-performing Japanese firms reduced R&D expenses, and many similar findings have been reported (Gavetti, Greve, Levinthal, & Ocasio, 2012; Shinkle, 2012). In general, positive issue framing reduces the likelihood of change as positive performance makes decision makers complacent and they follow the proverbial strategy of "don't fix something that is not broken" (Greve, 1998). Specific to governance practices, positive governance coverage can also make the decision makers feel more powerful, and they might believe that they can block the need for adoption of new transparency-enhancing practices that augment further their accountability to shareholders. Again, when analyzing media coverage, positive coverage is different from the absence of negative coverage, because positive coverage is associated with specific words and phrases praising the firms that are distinct from a neutral tone. Directors of firms experiencing more positive coverage will adopt practices more slowly than directors of firms experiencing less positive coverage. Likewise, directors of the same firm will reduce the speed of practice adoption when they experience more positive coverage. Thus, taking the neutral coverage for a specific firm as the baseline, we predict:

Hypothesis 1b: *The more positive is the tone of the company's own media coverage, the less likely is the company to adopt new board reform practices.*

1.2 | Indirect media coverage

While the previous two hypotheses capture how firms adopt practices based on coverage reflecting their own experience, the focal firm can also learn from the experience of the others (Levitt & March, 1988). This may also hold for media effects on the identification of governance and shareholder-related problems and solution in the form of adoptions of board reform practices. In order to model such learning from the experience of others, it is essential to identify which other actors are likely to provide information that the firm acts upon, because failure to identify the influential sources of learning will make the indirect influence difficult to detect (Strang & Soule, 1998). For changes in firm governance and specifically board reform, this task is made easier by the fact that the decisions

are made by the board of directors, so it is the social ties of the board of directors that matter for the diffusion of initiatives.

Board members are obliged to use their experience to help govern the firm. For changes to the firm governance, the most relevant experience is what they have learnt by living through media coverage of other firms in which they serve as directors. If board members discuss the experience with negative media coverage along with the actions taken in response, the effect of negative coverage of the interlocked firms should be the same as that of own-firm coverage. More negative coverage means more knowledge about its effect on the firm and governance actions taken to counteract these, and hence greater likelihood that board reform practices will be offered as a solution across interlocking firms. As the director acquires experience in discussing the changing board regime in one firm, where this discussion was brought about by negative media coverage, this person is either less likely to resist change in other boards or might even be more likely to spearhead it in all their boards before these companies experience negative media attention. These effects are likely to hold within and across firms. Directors of firms connected to the interlocks experiencing more negative coverage will adopt more practices than directors of firms connected to the interlocks experiencing less negative coverage. Likewise, directors of a firm will augment adoption when their interlock partners experience greater negative coverage and decrease adoption when the partners' negative coverage recedes. Hence, we propose:

Hypothesis 2a: *The more negative is the tone of the company's interlock media coverage, the more likely is the company to adopt new board reform practices.*

Positive coverage of a firm's interlock partners can create a sense of complacency in their boardrooms, and shared directors could adopt the same complacent attitude in the boardroom of the focal company. If board members resisted adoption of board reform practices in one company, as a result of response to the positive media coverage, they might resist adoption in the interlocked company. Or it may also be that the board members working for positively covered companies simply did not pay enough attention to governance as a solution to governance and shareholder-related issues, and hence they are unlikely to pay attention to the need for board reform in the other companies that they are directing. In this case, the directors' lack of attention to governance changes (as opposed to active resistance to governance change) would diffuse through the network of interlocking relationships and influence the focal firm. The prediction is that firms connected to interlock partners experiencing more positive coverage will adopt governance practices more slowly than firms connected to interlock partners experiencing less positive coverage. Likewise, directors of the same firm will reduce the speed of practice adoption when the positive coverage of their interlock partners increases. Thus, our final hypothesis:

Hypothesis 2b: *The more positive is the tone of company's interlock media coverage, the less likely is the company to adopt new board reform practices.*

2 | DATA AND METHODS

In the wake of corporate governance scandals of the early 2000s, Canadian banks and institutional investors pushed to create Clarkson Center for Corporate Governance at the University of Toronto. One of the center's tasks was to create a rating—called Board Shareholder Confidence Index—that

would shed light on the governance practices of Canadian companies through public outreach and the annual publication of the index. We were granted access to data collected by the Clarkson Centre's Board Shareholder Confidence Index researchers. This data was gathered from the proxy statements of companies in the Toronto Stock Exchange (TSX) Index that comprises approximately 200 Canadian companies in each year. We also accessed data on director attributes, organization characteristics and performance from Compustat, Thomson One Banker, and Bloomberg Professional Service. We accessed all articles written in *Globe and Mail* and *National Post*, the two premier newspapers in Canada that cover corporate news from 2004 to 2009.

The subprime crisis started in 2007. We used 3 years of data prior to the crisis, (2004–2006) and 3 years following the crisis (2007–2009). Because we lagged our independent variables relative to the dependent variable, we also collected data on the adoption of governance practices in 2010. This data collection evenly splits the data before and after the crisis.

2.1 | Data organization and dependent variable

Following prior work in this area (Rowley et al., 2017), our dependent variable is a binary indicator that reflects firm adoption of governance practices in line with the logic of board reform. Our analysis tracks each practice separately, but then we also pool adoptions for the analysis. There are 11 major practices of interest that exhibit considerable variance in adoption. These practices received extensive coverage in business press and were a key part of the Board Shareholder Confidence Index.

Rowley et al. (2017, pp. 822–823) provide an extensive description of these practices as well as the requirements to meet the practice standards according to the Board Shareholder Confidence Index. In brief, we capture practices that reflect (a) *board independence*, when at least two thirds of its directors did not have any connections to the company's management, and (b) *independence of audit committee*, and (c) *independence of compensation committee* if all committee members were independent directors. Our data included (d) *board CEO/chairman position split*, when the CEO and chair positions were occupied by different individuals, who also did not have kinship relations, (e) *Director evaluation* when the boards did peer-to-peer assessment of each director's performance, and (f) *Board evaluation* when directors systematically assessed the quality of board meetings, board information packages or the board chair's leadership. We also coded (g) *Director stock ownership* when the average value of share ownership by the company's directors exceeded four times their annual retainer, absence of (h) *dual share structure*, meaning that more than 50% of a company's shares controlled more than 50% of the votes. We coded that companies did not do (i) *Share dilution*, which happens when options granted to directors or the top management make up a significant proportion of the outstanding shares. We coded instances when a company did not have share dilution when shares issued to directors and managers constituted no more than a specific proportion – 10% or 5% – of the company's outstanding shares. We coded that a company did not do (i) *option repricing* when it did not lower the options' exercise price within the preceding 3 years. Finally, we coded (j) *alignment between CEO compensation and share price* if CEO compensation did not grow by more than 25% following a year during which a company's share price fell by more than 25%.

Every practice generated an indicator variable, labeled *adopt* and having the value 1 if the focal company adopted a given practice in a particular year and 0 otherwise. Following Rowley et al. (2017) and Shipilov et al. (2010), we pooled our data by “stacking” the matrices of single-practice diffusion regressions into one large matrix (Shipan & Volden, 2006). Our data structure amounts to a series of firm-year-practice observations.

2.2 | Differences-in-differences (DiD) estimation

Any analysis linking a firm's media coverage to organizational change will suffer from endogeneity due to omitted variables, reverse causality or measurement errors. The omitted variables problem arises when a researcher cannot observe certain firm characteristics, such as the general receptivity of its board to agency-theory prescribed suggestions for improving governance. Organizational politics or the strength of internal coalitions that support or resist board reform is another source of variance that can change over time but be unobserved for archival analysis. The inclusion of firm fixed effects will not solve this problem because these unobservables can vary over time. Reverse causality becomes an issue when reporters might praise firms which adopt board reform practices, or the company might adopt board reform in anticipation of this praise. We also could have measurement errors in variables capturing positive or negative coverage which are generated by the automated text extraction and sentiment analysis software.

Differences-in-differences estimation helps address these concerns. This procedure requires separating companies into control and treatment group, where the treatment experiences an exogenous shock. To the extent that the control and treatment groups have similar trends of adoption before the shock, and the shock has a stronger influence on the treatment group than that it does on the control, then the interaction of this shock with the independent variable introduces exogeneity into the relationship between the independent and dependent variable.

Exogeneity can come from the fact that the treatment is outside of the company's control, or, at the very least, the timing of treatment is. The subprime financial crisis of 2007–2008 represents an ideal treatment for our purposes, because it originated outside of Canada (i.e., mostly in the United States) and the timing of its arrival was unexpected. Canadian banks were generally considered to be blameless for the crisis and had already undergone significant changes to their corporate governance in the early 2000s, following the Enron corporate scandal in the United States. In fact, Canadian banks spearheaded a social movement in the early 2000s, called “Canadian Coalition for Good Governance” with an objective to adopt board reform practices, and they adopted many of the practices recommended by the Board Shareholder Confidence Index. At the same time, while Canadian asset management companies, securities brokers, and insurance companies were considered blameless for the U.S. mortgage crisis, they adopted fewer governance practices. Because of this difference, they can be considered as an ideal treatment group for our purposes.

The effect of the 2007–2008 crisis might vary over the years, hence we designate post-treatment effects through year dummies. For example, the effect of the shock in 2007 is captured by a dummy variable that takes the value of 1 for observations in 2007 and zero otherwise. Given that the subprime mortgage crisis drew stronger scrutiny for financial services firms, we coded variable *financial firm* as 1 when the firm was either a bank, asset management firm, insurance company, or financial broker. All other firms were coded as zeros. We estimated our models with and without bank-practice observations, as we explain below.

2.3 | Media coverage

Our key independent variables are built to reflect the companies' media coverage. We identified articles whose meta-data contained tickers of TSX member firms profiled in the Board Shareholder Confidence Index (BSCI). For each article, we identified company name mentions near specific words that could be related to the principal-agent problems in companies, that is, words capturing the concepts of shareholder value, firm performance, or governance. These words are listed in Table 1. We analyze text consisting of each sentence with a keyword (or its part e.g. "board") and a maximum of

two sentences before and after in Factiva. This list is intentionally broad, so that we can pick up all articles that are likely to be discussed in the boardrooms. If there are multiple text segments that mention both the company name and the keywords in an article, we include all of these segments to be analyzed for tone.

We used the LIWC software to code the tone of media coverage, that is, whether the tone was positive or negative. Research on linguistic analysis indicates that positive and negative tone doesn't represent two ends of the same spectrum, rather these are separate dimensions (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001). The higher the *negative own coverage* score, the more negative words and expressions are used in the paragraphs in our media sources that also contain the name of the focal firm. The higher the *positive own coverage* score, the more positive words and expressions are used in the paragraphs that discuss the focal firm. In the DiD framework, an interaction of *negative own coverage* with *financial firm* and with 2007, 2008, and 2009 dummies allows us to test Hypothesis 1a. We expect a positive interaction. An interaction of *positive own coverage* with *financial firm* and with 2007, 2008, and 2009 dummies allows us to test Hypothesis 1b. We expect a negative interaction. This is an example of sentences that generate a high negative press coverage:

"Nortel's 10-K filing will mark the beginning of the end of a process that started last April when Mr. Dunn and chief financial officer Doug Beatty were terminated "for cause." Nortel chairman Lynton Wilson said Mr. Dunn was fired for "accountability for financial accounting." Nortel has been threatening to file restated financial results since last summer. But the company, which has more than 650 people working on its books, has missed three self-imposed deadlines."

Here is an example of sentences that yield a high positive press coverage score:

"I am pleased with our accomplishments in the first full year since we've emerged from CCAA (bankruptcy-court protection)," Mr. Milton said. "While rising fuel costs have made it challenging, our financial results for the full year are among the strongest in

TABLE 1 Keywords list to identify firm media coverage articles

Accountability	Governance	Board committee	Long term
Board independence	Shareholder return	Audit committee	CEO-chairman split
Board renewal	Return on equity	Compensation committee	Share structure
Board tenure	Stock price	Remuneration committee	Share dilution
Board performance	Dividend	Governance committee	
Board evaluation	Transparency	Human resource committee	
Shareholder value	Transparent	Investment committee	
Firm value	Reliability	Strategy committee	
Company value	Shareholder	Family board	
Corporate value	Stakeholder	Ownership	
Compliance	Manager incentive	Diversity	
Oversight	Director		
Monitoring			

the industry and we've made good progress in building shareholder value, reinventing our business and winning over more customers."

To test Hypotheses 2a and 2b, we first identified interlocking relationships between the focal firm and other companies. These relationships exist when the two firms share the same director. For Hypothesis 2a, we summed up the negative coverage scores of the companies to which the focal firm is connected through shared directors. This gave us the variable *negative interlock coverage*. Likewise, for Hypothesis 2b, we summed up the positive coverage scores of the companies to which the focal firm is connected through shared directors. This gave us the variable *positive interlock coverage*.

In the DiD framework, an interaction of *negative interlock coverage* with *financial firm* and with 2007, 2008, and 2009 dummies allows us to test Hypothesis 2a. We expect a positive effect. An interaction of *positive interlock coverage* with *financial firm* and with 2007, 2008, and 2009 dummies allows us to test Hypothesis 2b. We expect a negative effect.

2.4 | Control variables

2.4.1 | Attention to governance

Firms vary in the attention which they pay to corporate governance, and more specifically to the need of board reform. Firms' annual reports represent a great source of information on targets of the firm's attention. If a firm's CEO talks about governance-related matters, then one can conjecture that the company's top leadership cares about governance. We downloaded annual reports of all TSX member firms and examined the letter of the CEO. This is the most publicly visible document that the company issues every year. Although the report will inevitably talk about governance at some length, the appearance of governance-related topics in the letter suggest that these topics are important to the CEO and the top management team. We identified a list of governance-related words. For every firm, we counted whether the CEO letter contained one or more of these words. The governance contents of each report has thus become a vector in which each word represents a binary switch. When a given word (e.g., "governance") is used in the letter, the corresponding indicator in the vector switches from zero to 1. We performed regression scoring of these words using the "predict" command in STATA, which allowed us to convert a vector of keywords into a single value. The higher the resulting predicted value, which we labeled *firm governance attention*, the more attention the top management of the firm pays to governance (Table 2).

TABLE 2 Keywords list to identify attention to corporate governance in the CEO letter

Governance	Evaluation	Board renewal
Transparency	Corporate value	Incentives
Accountability	Alignment	Ownership
Independent director	Compliance	Family
Shareholder	Oversight	Diversity
Stakeholder	Monitor	Committee
Fraud	Scandal	Audit
Accounting practice		Compensation

We added a control variable *no attention to governance* set to 1 if there was no governance talk in the CEO letter at all and zero otherwise.

We also computed other controls which had meaningful effects on the diffusion of practices reported in the prior research (Rowley et al., 2017). Firms exhibited sensitivity to position in the Board Shareholder Confidence Index as well as to their profitability, captured by the firms' return on assets (ROA). This sensitivity was driven by the gaps between firms' actual governance scores or ROA and that of their aspiration levels. Just like Rowley et al. (2017), we aggregated social and historical aspirations for each firm using the following formula:

$$AL_t = G(\text{Social aspirations}_t) + (1 - G)(\text{Historical aspirations}_t), \quad (1)$$

where G is the weight given to social aspirations. When $G = 0$, the firm's aspirations are entirely historical; when $G = 1$, its aspirations are solely social. We set social and historic aspirations in formula (1) as $G_{\text{ROA}} = 0.3$ and $G_{\text{BSCI}} = 1.0$ because organizational performance feedback on governance is based solely on social aspirations, as such scores are not useful without social comparisons. Organizations rely more strongly on historical aspirations than on the social aspirations when they react to performance feedback based on the attainment of financial goals. Following Lant (1992), historic aspirations were defined as:

$$\text{Historical aspirations}_t = (1 - a)(\text{Historical aspirations}_{t-1}) + a(\text{Performance}_{t-1}). \quad (2)$$

Here a firm's Performance_{t-1} is the ROA (or BSCI) at time $t - 1$, and a is a number (between 0 and 1) that represents the weight given to the immediate prior performance. We set a to 0.5, thereby giving equal weight to past performance and aspirations.

We computed social aspirations for each firm as the average ROA and BSCI for all firms in the TSX Index, less the value of the corresponding variable for the firm itself. As organizations are more likely to react to the performance of similar others, so we weighted each firm's performance by $1/[1 + w]$. Here, we set w to 0, if the two firms were in the same industry and set to 1 otherwise (Greve, 2008).

We computed separate AL values based on ROA and BSCI and subtracted them from actual ROA and BSCI scores to yield performance relative to the aspiration level. We computed *BSCI below AL* and *BSCI above AL* using the same principles. Details of these calculations are available in Rowley et al. (2017, 823-824).

We also controlled for other factors that may affect a firm's decision to adopt governance practices. For each year, we calculated how many practices compatible with the board reform logic an organization had already adopted, creating a variable labeled *own practice*. We had fixed effects of individual practices through the inclusion of practice indicator dummies. To control for the susceptibility of firms to adoptions, we constructed an indicator variable—*Low BSCI*—set to 1 if the company had a BSCI score below 25 points, with zero otherwise. Such organizations would be expected to be particularly slow adopters of board reform practices, as they don't seem to believe in them.

Interlock influences might have an impact on a firm's adoption simply because a firm's contacts adopt practices on their own. Thus, we constructed annually updated network matrices. In these matrices, each X_{ij} entry denotes the number of directors in common between firms i and j . We calculated *interlock practice* as a count of the number of practices adopted by the firm's board interlock contacts. *Centrality* of a firm in a network is often associated with its early adoption of innovations,

thus we used the normalized eigenvector centrality to hold constant a firm's network position (Bonacich, 1987). Finally, we computed *firm size* as net revenue of a firm in a given year.

2.5 | Coarsened exact matching and parallel trends assumption

One of the key assumptions of DiD estimation is that members of the control and treatment groups experienced parallel trends of adopting board reform practices prior to the shock. In other words, increases (decreases) in the control group's propensity to adopt board reform happened at the same time as increases (decreases) in the treatment group's propensity to adopt the same practices prior to 2007. While control and treatment groups might have observations on firms that experience different pre-treatment trends, matching helps limiting observations to only those that we should use in DiD estimation. We used coarsened exact matching (CEM) for this purpose. We selected firm observations in 2007 and matched control and treatment groups based on their *ROA*, *BSCI* score, and *firm governance attention*. We included *ROA* and *BSCI* because prior work in this context (e.g., Rowley et al., 2017) has shown that the adoption of board reform practices was heavily driven by the firms' positions on the governance rankings and by their profitability. *Firm governance attention* was included because it captured the propensity of the firm to adopt board reform practices. We did not include other controls in the matching because this would have led to a very small sample, which then would not have allowed estimation using multiple three-way interactions. CEM generated a matching score which we then included for all observations that reflected the same firm. We then evaluated the extent to which control and treatment groups experienced parallel trends in the adoption of practices before the crisis. This test is implemented in STATA as the *dqd* command. It is based on examining precision of interactions involving year dummies and *financial firms* in a model with *adopt* as a dependent variable. Failure to reject this test indicates that the pretreatment trends are indeed parallel. Our postmatching test statistic generated satisfactory *p* values in a subsample that excluded bank practices, which did not allow us to reject the null hypothesis of equality of pretreatment trends.¹ Before matching, we had 152 firms in the control group and 20 firms in the treatment group. After matching, we obtained 62 firms in the control group and 16 firms in the treatment group (Table 3).

3 | ANALYSIS AND RESULTS

Table 4 contains correlations and descriptive statistics of our theoretical and control variables computed using practice-firm-year observations in a matched sample.

Most correlations are acceptable, except a high correlation ($r = 0.84$) between *negative interlock coverage* and *positive interlock coverage*. Although the two constructs are theoretically distinct, they have 71% (0.84×0.84) of shared variance. As we will be estimating our DiD models with different

¹We estimated different versions of this test in a matched sample without bank observations. First, we included only practice and year fixed effects (the resulting test statistic had a *p* value equal to 0.23), then we added firm fixed effects to practice and year fixed effects ($p = 0.41$), and finally all theoretical and control variables plus firm, year, and practice fixed effects ($p = 0.18$). When estimating this test without firm fixed effects, we observed that the statistic's *p* value has been reduced ($p = 0.12$), however, it was increased ($p = 0.24$) if we removed *Low BSCI* from the model. This pattern indicates that we cannot reject the parallel trends hypothesis, however, this test is somewhat sensitive to whether our regression models include control variables capturing susceptibility of firms to adopt board reform. Our regression results reported below are robust to inclusion or exclusion of *Low BSCI* from the models.

TABLE 3 Matching results

	Before matching	After matching
	(1)	(2)
ROA (<i>F</i> -tests on means)	0.42	0.12
BSCI (<i>F</i> -tests on means)	0.37	0.01
Attention to governance (<i>F</i> -tests on means)	2.18	0.08
Joint difference (<i>F</i> -test on means)	3.83	1.71

theoretical variables separately, the correlation between these variables poses less of a concern. However, we will also be estimating models in which we transform *negative interlock coverage* and *positive interlock coverage* as well as *negative own coverage* and *positive own coverage* into differences between positive and negative coverage. This will remove collinearity between variables and will also allow us to estimate these effects not as individual dimensions, but as different ends of a continuum of tone difference. We compute condition numbers for our models and report results from models in which we lowered condition numbers by dropping collinear variables. High condition numbers (15 and above) indicate that collinearity might be a problem: it can either increase or decrease standard errors and lead to incorrect statistical inference. Appendix S1, Supporting information, contains additional details of how we dealt with collinearity in our data by transforming theoretical variables (Kalnins, 2018).² We also reduce condition numbers in some models by dropping selected variables as noted below.

Table 5 presents the results. As we are estimating nonlinear models, we also plot the interaction effects to understand which variable ranges in the model predict differences for firms, the control and treatment group. The precision of estimated coefficient is the correct hypothesis test also in nonlinear models, but these plots show the extent to which the statistical precision is matched with substantive importance (Greene, 2010). These plots are presented on Figure 1 (panels a, b) and Figure 2 (panels a, b) for Hypotheses 1a/b and 2a/b, respectively.

Unless otherwise noted, all models contain the year fixed effects using dummies 2005–2009. We initially attempted to simultaneously estimate three three-way interactions involving 2007, 2008, and 2009 dummies in a single model. However, in the matched sample, there is little variance in the control and treatment group around media coverage and adoptions in 2009 which often lead STATA to drop this interaction (once the 2007 and 2008 interactions are in) or prevent convergence in some fixed effects models. By contrast, interactions with 2007 and 2008 are estimated in all models, which is why we rely on hypothesis testing for these two interactions only. Model 1 is a baseline. In Model 2, we test Hypothesis 1a on the effects of direct media coverage by entering two interactions between 2007 (or 2008) dummy and *Financial firm* × *Negative own coverage*. In addition, we also enter all lower level pairwise interactions of the component variables. We initially estimate our models using logit command in STATA with clustering on the firm, which allows us to assess the extent to which coverage differences across firms affect practice adoptions. By splitting the post-treatment effect into two annual dummies (i.e., 2007 and 2008), we can evaluate whether treated firms react more strongly right at the year of the treatment (i.e., in 2007) or in the next year afterward (i.e., in 2008). The

²We are not concerned with a 0.94 correlation between *positive own coverage* and *own coverage tone* both because the latter variable is a composite construct from positive and negative coverage and also because *positive own coverage* and *own coverage tone* are not entered into the same model. The same applies to a 0.97 correlation between *interlock coverage tone* and *positive interlock coverage*. These high correlations merely show that the overall tone of coverage is primarily determined by positive coverage. *Interlock coverage tone* and *positive interlock coverage* are never entered in the same regression model.

TABLE 4 Descriptive statistics and correlations

Variable		Mean	Std. Dev.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1 <i>Adopt</i>		0.18	0.38	1.00																						
2 <i>Firm governance</i>		-0.13	0.58		-0.01	1.00																				
3 <i>ROA below AL</i>	<i>attention</i>	-1.21	3.15		-0.05	0.06	1.00																			
4 <i>ROA above AL</i>		0.97	2.09		0.01	-0.01	0.18	1.00																		
5 <i>BSCI below AL</i>		-15.60	14.31		0.08	-0.15	-0.14	0.08	1.00																	
6 <i>BSCI above AL</i>		1.86	4.69		0.07	-0.03	-0.24	-0.03	0.43	1.00																
7 <i>Own practice</i>		7.00	1.44		-0.02	-0.14	-0.15	-0.05	0.64	0.53	1.00															
8 <i>Low BSCI</i>		0.01	0.12		-0.01	0.27	-0.01	-0.06	-0.32	-0.05	-0.26	1.00														
9 <i>Interlock practice</i>		41.58	27.40		-0.01	0.10	0.06	-0.10	0.21	0.09	0.34	-0.16	1.00													
10 <i>Centrality</i>		6.35	19.66		-0.10	0.13	0.06	-0.09	-0.10	-0.12	-0.15	-0.04	0.24	1.00												
11 <i>Positive own coverage</i>		1.27	1.50		-0.02	0.12	0.02	0.00	-0.06	0.02	0.06	0.11	0.16	0.16	1.00											
12 <i>Negative own coverage</i>		0.41	0.54		0.00	0.08	-0.05	-0.03	-0.03	0.04	0.06	0.10	0.15	0.00	0.67	1.00										
13 <i>Positive interlock coverage</i>		5.30	5.79		-0.96	0.14	0.14	-0.18	-0.10	-0.09	0.05	-0.09	0.69	0.56	0.17	0.05	1.00									
14 <i>Negative interlock coverage</i>		1.66	1.89		-0.03	0.08	0.13	-0.18	0.03	-0.05	0.17	-0.11	0.71	0.43	0.15	0.04	0.84	1.00								
15 <i>2005</i>		0.17	0.38		0.08	0.05	0.02	0.05	-0.06	0.05	-0.05	0.11	0.00	0.00	0.10	0.02	0.04	-0.03	1.00							
16 <i>2006</i>		0.20	0.40		0.05	-0.11	0.01	0.15	-0.04	-0.01	-0.05	-0.06	-0.06	-0.02	-0.11	-0.04	-0.01	-0.11	-0.23	1.00						
17 <i>2007</i>		0.18	0.39		-0.12	-0.12	0.02	-0.04	0.13	0.02	0.15	-0.06	0.00	-0.01	-0.06	-0.08	-0.05	-0.07	-0.22	-0.23	1.00					
18 <i>2008</i>		0.14	0.35		-0.02	-0.02	-0.05	-0.05	0.11	-0.08	0.14	-0.05	-0.01	0.01	0.01	-0.01	-0.01	0.08	-0.18	-0.20	-0.19	1.00				
19 <i>2009</i>		0.12	0.33		-0.04	-0.07	-0.07	-0.09	0.05	-0.05	0.14	-0.05	-0.01	0.03	0.02	0.14	-0.09	-0.01	-0.17	-0.18	-0.18	-0.15	1.00			
20 <i>Financial firm</i>		0.30	0.46		-0.69	-0.01	0.06	-0.24	-0.37	-0.14	-0.14	0.19	0.05	0.46	-0.05	-0.13	0.35	0.33	0.01	-0.08	-0.02	0.04	0.08	1.00		
21 <i>Own coverage tone</i>		0.86	1.21		-0.02	0.11	0.05	0.01	-0.06	0.01	0.05	0.10	0.13	0.20	0.94	0.38	0.19	0.16	0.12	-0.12	-0.03	0.02	-0.04	-0.01	1.00	
22 <i>Interlock coverage tone</i>		3.64	4.32		-0.96	0.15	0.12	-0.16	-0.15	-0.09	-0.01	-0.07	0.62	0.56	0.16	0.05	0.97	0.69	0.07	0.03	-0.04	-0.05	-0.12	-0.33	0.18	1.00
23 <i>Firm size</i>		6,397,333	8,696,59	-0.04	0.10	0.08	-0.09	-0.11	-0.16	-0.12	-0.08	0.25	0.46	0.27	0.27	0.42	0.37	-0.03	-0.04	0.12	0.06	0.11	0.21	0.40	1.00	
24 <i>No governance keywords</i>		0.32	0.47	-0.02	-0.63	-0.02	-0.01	0.00	-0.07	-0.09	-0.12	-0.21	-0.19	-0.17	-0.09	-0.02	-0.05	0.04	0.02	0.03	0.04	0.17	-0.16	-0.11	-0.24	

interactions of *Financial firm* \times *Negative own coverage* \times 2008 (or \times 2007) are precisely estimated. In Model 3, we remove observations related to the banks, as we suspect that these organizations experienced a treatment earlier. The interactions of *Financial firm* \times *Negative own coverage* \times 2007 ($\beta = 3.55$, $p = 0.002$) and *Financial firm* \times *Negative own coverage* \times 2008 ($\beta = 2.66$, $p = 0.036$) are both positive and precisely estimated.

Figure 1a plots the average marginal effects and confidence intervals based on Model 3. This and all the other plots are built using the observable ranges of x-axis variables, which allows graphical illustration for the sizes of the average marginal effects in our hypothesized relationships.

In Model 4, we report estimates using conditional fixed effects logistic regression (command clogit in STATA) with clustering on the same firm observations. This approach helps us understand the extent to which our results also hold when coverage changes within the firm as this model contains firm, practice, and year fixed effects. Our results are consistent with those in Model 3, except that they are less precise ($\beta = 2.63$, $p = 0.158$ and $\beta = 1.83$, $p = 0.146$ for 2007 and 2008 interactions, respectively). We cannot report margins plots for the fixed effects models because the main effect of *financial firm* is constant for all of the same-firm observations and is dropped from the model. Model 5 repeats the conditional fixed effects estimation, but this time we drop variables that inflate the condition number. To that end, we drop practice fixed effects and the 2009 year dummy along with some other controls. While the condition number in Model 3 is 40.53, which is indicative of high collinearity, Model 5 has a much lower condition number: 9.93. The hypothesized effects are more precisely estimated than those in Model 4: $\beta = 2.83$, $p = 0.095$ and $\beta = 2.04$, $p = 0.069$ for 2007 and 2008 interactions, respectively. This provides support for Hypothesis 1a.

In Model 6, we continue the testing of direct media coverage effects by introducing the following interactions: *Financial firm* \times *Positive own coverage* \times 2007 and *Financial firm* \times *Positive own coverage* \times 2008 as well as lower-level interactions of their components. In the full model, the interaction in 2008 is precisely estimated. When we remove banks from the analysis, as in Model 7, both the 2007 ($\beta = 0.79$, $p = 0.101$) and 2008 ($\beta = 1.46$, $p = 0.002$) interaction for 2008 is more precisely estimated than the interaction for 2007. Plots on Figure 1b show the confidence intervals of effects, and also suggests that the positive effects of media coverage are stronger in 2008. This pattern refutes Hypothesis 1b: as the positive media coverage of the firm increases, so does its propensity to adopt governance practices. We see a similar pattern in Model 8 with all controls plus the firm fixed effects and in a Model 9 where we have removed some controls, practice fixed effects, and the 2009 dummy to obtain a low condition number (9.80, as compared to 40.62 in Model 7). In Model 9, the effect for 2007 is not precisely estimated ($\beta = 0.42$, $p = 0.392$) whereas the effect for 2008 is precisely estimated ($\beta = 1.27$, $p = 0.009$).

The findings are sufficiently strong that we need to consider potential explanations. One prominent alternative is managerial fads. Although the theory and modeling of fads has concentrated on firms imitating each other as a result of being persuaded by the actions of others (Abrahamson, 1991; Abrahamson & Eisenman, 2008), we think that positive media coverage can have a similar role. It instills a belief in the practices and their underlying logic of transparency, which leads to additional adoptions. In other words, the more positive is the coverage, the more the firm may feel the need to confirm to the current fad and board reform was an example of a fad that was diffusing in Canada at the time of our study.

In Model 10, we conduct a post hoc analysis to evaluate how decision makers respond to general tone of direct media coverage. While Models 2–9 treat positive and negative coverage as separate dimensions, we construct a variable *own coverage tone* which is a difference between the value of positive coverage and the value of negative coverage (i.e., *Positive own coverage-negative own*

TABLE 5 Hypotheses tests

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
	Negative	Negative	Negative	Negative	Positive	Negative	Negative	Negative	Positive	Positive	Positive	Positive	Positive						
<i>Baseline H1a</i>																			
<i>H1a</i>																			
<i>H1a: FE</i>																			
<i>H1b</i>																			
<i>H1b: FE</i>																			
<i>H2a</i>																			
<i>H2b</i>																			
<i>H2b: FE</i>																			
<i>Firm governance attention</i>	-0.42	-0.41	-0.40	-0.25	0.10	-0.46	-0.44	-0.29	0.05	-0.44	-0.13	-0.43	-0.37	-0.05	-0.44	-0.41	-0.28	-0.35	
<i>ROA below AL</i>	-0.02	-0.02	-0.02	-0.03	-0.02	-0.02	-0.02	-0.03	-0.01	-0.02	-0.01	-0.01	-0.03	-0.01	-0.01	-0.02	-0.01	-0.01	
<i>ROA above AL</i>	-0.08	-0.08	-0.07	-0.06	-0.02	-0.07	-0.07	-0.04	0.00	-0.07	-0.04	-0.08	-0.04	-0.00	-0.08	-0.08	-0.04	-0.08	
<i>BSCI below AL</i>	0.03	0.03	0.03	-0.01	0.03	0.04	0.04	-0.00	0.03	0.03	0.03	0.03	-0.01	0.03	0.03	-0.01	0.03	0.03	
<i>BSCI above AL</i>	0.02	0.02	0.01	-0.07	-0.11	0.02	0.02	-0.07	0.02	0.04	0.03	-0.07	0.02	0.02	0.02	0.02	-0.07	0.01	
<i>Own practice</i>	-0.32	-0.31	-0.29	-0.67	-0.35	-0.34	-0.72	-0.33	-0.27	-0.33	-0.33	-0.61	-0.32	-0.31	-0.64	-0.25	-0.25	-0.25	
<i>Low BSCI</i>	-0.08	-0.02	-0.23	-1.34	-0.08	-0.20	-1.20	-0.13	-0.13	-0.53	-1.64	-0.72	-0.71	-1.65	-0.56	-0.56	-0.56	-0.56	
<i>Interlock practice</i>	0.00	0.00	-0.02	0.00	0.00	0.00	-0.02	0.00	0.00	0.00	0.00	-0.02	0.00	0.00	-0.02	0.01	-0.02	0.01	
<i>Centrality</i>	-0.04	-0.04	-0.04	0.21	-0.04	-0.05	0.25	-0.05	-0.05	-0.04	0.34	-0.04	-0.04	-0.05	0.38	-0.05	-0.05	-0.05	
<i>Firm size</i>	-0.00	-0.00	0.00	0.00	-0.00	0.00	0.00	-0.00	-0.00	-0.00	0.00	-0.00	-0.00	0.00	0.00	0.00	-0.00	-0.00	
<i>No governance keywords</i>	-0.81	-0.76	-0.76	-0.57	-0.85	-0.85	-0.64	-0.86	-0.84	-0.84	-0.88	-0.76	-0.74	-0.40	-0.61	-0.61	-0.61	-0.61	
<i>Positive own coverage</i>	0.10	0.10	0.09	0.07	0.01	0.17	0.16	0.02	0.01	-0.03	0.07	0.07	-0.01	0.07	0.08	0.09	-0.00	0.10	
<i>Negative own coverage</i>	0.14	0.15	0.15	0.22	0.22	0.17	0.17	0.27	0.19	0.12	0.16	0.19	0.21	0.16	0.17	0.19	0.22	0.16	

TABLE 5 (Continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
	Negative own coverage	Negative own coverage	Negative own coverage	Positive own coverage	Positive own coverage	Positive own coverage	Positive own coverage	Positive own coverage	Positive own coverage	Positive Hib: FE	Positive Hib: FE	Negative interlock coverage	Negative interlock coverage	Negative interlock coverage	Negative interlock coverage	Positive interlock coverage	Positive interlock coverage	Positive interlock coverage	Positive interlock coverage
Baseline H1a	H1a	H1a: FE	H1a: FF	H1b	H1b	H1b: FE	H1b: FF	H2a	H2a: FE	H2a: FF	H2b	H2a	H2a: FE	H2a: FF	H2b	H2b: FE	H2b: FF	H2b: FE	
<i>Positive interlock coverage</i>	-0.02	-0.02	-0.02	0.06	0.01	-0.03	-0.02	0.06	0.06	-0.02	-0.08	-0.03	0.04	-0.04	-0.04	0.01	0.05		
<i>Negative interlock coverage</i>	0.14 (0.11)	0.17 (0.12)	0.15 (0.12)	0.23 (0.20)	0.24 (0.15)	0.19 (0.12)	0.18 (0.12)	0.26 (0.19)	0.17 (0.12)	0.28 (0.12)	0.26 (0.12)	0.28 (0.12)	0.29 (0.12)	0.34 (0.16)	0.27 (0.12)	0.26 (0.12)	0.34 (0.21)		
<i>Financial firm</i>	0.39 (0.39)	0.45 (0.44)	0.48 (0.44)	0.56 (0.46)	0.58 (0.47)	0.56 (0.47)	0.58 (0.47)	0.53 (0.47)	0.53 (0.47)	0.38 (0.40)	0.85 (0.57)	0.38 (0.57)	0.85 (0.57)	1.07 (0.58)	1.04 (0.61)	1.04 (0.61)	1.02 (0.55)		
<i>Financial firm × 2007</i>	0.35 (0.80)	-0.11 (0.88)	-0.25 (1.08)	0.20 (0.98)	0.27 (0.89)	-0.13 (0.97)	0.15 (1.23)	0.73 (1.07)	0.03 (0.92)	-1.39 (1.47)	-4.10 (2.36)	-4.77 (3.27)	1.20 (1.32)	-1.88 (1.23)	-2.77 (1.23)	-2.61 (1.62)	1.11 (1.38)	-1.66 (0.85)	
<i>Financial firm × 2008</i>	-1.71 (1.08)	-1.67 (1.06)	-0.74 (1.03)	-1.19 (0.96)	-2.63 (1.33)	-2.55 (1.28)	-1.73 (1.35)	-2.16 (1.29)	-2.08 (1.01)	-5.48 (3.33)	-5.10 (2.55)	-2.22 (1.61)	-2.72 (1.35)	-4.32 (1.23)	-4.21 (1.23)	-2.61 (1.46)	-2.25 (1.16)	-2.83 (0.89)	
<i>Financial firm × * own coverage</i>	-0.21 (0.62)	0.08 (0.59)	-1.12 (0.89)	-0.42 (0.87)	-0.11 (0.87)	-0.11 (0.87)	-0.11 (0.87)	-0.06 (0.23)	-0.13 (0.23)	-0.25 (0.22)	-0.25 (0.46)	-0.25 (0.47)	-0.25 (0.47)	0.17 (0.19)	0.17 (0.19)	-0.01 (0.04)	-0.01 (0.04)		
<i>* own coverage × 2007</i>	-0.56 (0.74)	-0.57 (0.74)	-0.24 (0.86)	-0.20 (0.99)	-0.01 (0.25)	-0.01 (0.26)	-0.01 (0.36)	0.31 (0.33)	0.31 (0.33)	0.28 (0.33)								-0.01 (0.04)	
<i>Financial firm × * own coverage × 2007</i>	2.14 (1.22)	3.55 (1.14)	2.63 (1.86)	2.83 (1.70)	0.62 (0.47)	0.79 (0.48)	0.24 (0.58)	0.42 (0.49)										-0.07 (0.09)	
<i>* own coverage × 2008</i>	-1.68 (0.72)	-1.67 (0.72)	-1.39 (0.74)	-1.47 (0.75)	-0.77 (0.29)	-0.77 (0.30)	-0.69 (0.35)	-0.66 (0.32)										-0.12 (0.09)	
<i>Financial firm × * own coverage × 2008</i>	2.72 (1.21)	2.66 (1.27)	1.83 (1.26)	2.04 (1.12)	1.47 (0.48)	1.46 (0.48)	1.19 (0.54)	1.27 (0.49)										0.02 (0.13)	
<i>* coverage tone</i>																			
<i>Financial firm × * coverage tone</i>																			
<i>* coverage tone × 2007</i>																			

TABLE 5 (Continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
	Negative	Negative	Negative	Negative	Positive	Negative	Negative	Positive	Positive	Positive	Positive								
own	own	own	own	own	own	own	own	own	own	own	own	own	interlock						
coverage	coverage	coverage	coverage	coverage	coverage	coverage	coverage	coverage	coverage	coverage	coverage	coverage	coverage	coverage	coverage	coverage	coverage	coverage	coverage
Baseline	H1a	H1a	H1a: FE	H1b	H1b	H1a: FE	H1b	H1b	H1b: FE	H1b: FE	H2a	H2a	H2a: FE	H2b	H2b	H2b: FE	H2b: FE	H2b: FE	0.38
<i>Financial firm</i> ×																			0.38
* coverage tone ×																			(0.19)
2007																			-0.21
* coverage tone ×																			(0.12)
2008																			0.57
<i>Financial firm</i> × *																			(0.17)
<i>Coverage tone</i> ×																			(0.54)
<i>Financial firm</i> × *																			-0.01
interlock coverage																			(0.09)
* interlock coverage																			(0.12)
× 2007																			(0.09)
<i>Financial firm</i> ×																			0.04
* interlock coverage																			(0.14)
× 2007																			(0.19)
* interlock coverage																			-0.12
× 2008																			(0.11)
<i>Financial firm</i> × *																			(0.11)
Interlock coverage ×																			0.29
2008																			(0.14)
Constant	0.94	0.84	0.77		1.13	1.05		1.06	0.70	0.88		0.82	0.76						0.40
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	(0.72)												
Observations	944	944	929	872	872	944	929	872	888	929	944	929	872	888	944	929	872	888	929

Note: All models contain a full set of year dummies as main effects (i.e., 2005–2009) except for Models 5, 9, 14, and 18 where we drop some year dummies to reduce condition numbers. When reporting interactions of theoretical variables, we replace a part of a variable name with an asterisk (*) and report the corresponding variable name in the heading of the model. For example, in Model 2, “own coverage” refers to “negative own coverage” in a test for H1a. In Model 6 “*coverage tone” refers to “own coverage tone” while in Model 11 “*coverage tone” refers to “interlock coverage tone.” We do this to save space in reporting the results.

coverage). This variable is interacted with the dummies of DiD estimation. The interactions are positive and precisely estimated for 2008 ($\beta = 1.69, p = 0.002$), but not for 2007 ($\beta = 0.85, p = 0.154$). When we plot these interactions in Figure 3a, we see that the effect primarily is limited to 2008 and that firms adopt practices at a stronger rate when their positive coverage greatly exceeds negative coverage.

In Model 11, we test Hypothesis 2a on the effect of indirect media coverage by entering the interactions *Financial firm* \times *Negative interlock coverage* \times 2007 and *Financial firm* \times *Negative interlock coverage* \times 2008. In Model 12, we remove observations from banks, and observe that these effects remain precisely estimated for the year 2007 ($\beta = 1.72, p = 0.03$) and for the year 2008 ($\beta = 1.87, p = 0.005$). Figure 2a plots the interaction effect. It shows that as negative media coverage of a firm's interlocks increases, so does the propensity of the firm to adopt governance practices in both 2008 and 2007. This provides support for Hypothesis 2a. In Model 13, we estimate Hypothesis 2a using firm fixed effects while in Model 14, we remove some control variables, practice fixed effects, and the 2005 year dummy to reduce the condition number from 41.25 in Model 12 to 10.09 in Model 14. The effect for 2007 is not precisely estimated ($\beta = 0.2, p = 0.729$), while the effect for 2008 is precisely estimated ($\beta = 1.12, p = 0.022$). These findings provide support for Hypothesis 2a.

In Model 15, we show tests of Hypothesis 2b where we enter interactions of *Positive interlock coverage* \times *Financial firm* \times 2007 and *Positive interlock coverage* \times *Financial firm* \times 2008. In the full sample, these effects are precisely estimated. When we remove banks from the analysis, as in Model 16, we also get a precisely estimated effect for the interaction with 2007 ($\beta = 0.36, p = 0.02$) and 2008 dummies ($\beta = 0.56, p = 0.00$). The plot in Figure 2b shows that control and treatment groups are sufficiently different in both time periods. We report results with firm fixed effects in Model 17. In Model 18, we offer fixed effects results with lower condition number: this number is 10.81 versus 41.32 in Model 16. All of these analyses suggest that Hypothesis 2b is not supported—positive interlock coverage makes firms more likely to adopt governance practices. This is again consistent with adoption as a fad, supported by positive media coverage and spread through director interlocks.

In Model 19, we replace interlock coverage variables by their difference (i.e., *Interlock coverage tone* = *Positive interlock coverage* – *Negative interlock coverage*). The interaction effects in the DiD framework are precisely estimated for both 2007 ($\beta = 0.38, p = 0.042$) and 2008 ($\beta = 0.57, p = 0.001$). The plot on Figure 3b shows the marginal effects of the interactions.

To summarize, the results provide support for the hypotheses linking either direct negative coverage (H1a) or indirect negative coverage of interlocked firms (H2a) to the adoption of board reform practices. This effect is stronger in the analysis that excludes banks. While we observed precisely estimated effects of positive coverage on adoptions, these effects were contrary to expectations. Instead of the negative effects as our theory suggested (i.e., H1b and H2b), positive media coverage also increased adoption, suggesting that positive media coverage was feeding a fad. In general, the differences in adoption between control and treatment group are stronger in 2008—after the companies experienced financial crisis for 2 years—than they are in 2007—the onset of the crisis.

There may be heterogeneity in how firms attract media attention: some of them might attract attention because of their strong performance, others due to their strength in an emerging technology area or due to employing high profile executives. Whatever the reason, this attention may lead to both media coverage and board reform, introducing endogeneity due to the omitted variable bias into our regression models. In the supplementary analysis reported in the Appendix S1, we did not find evidence of this endogeneity. The Appendix also reports additional analyses where we evaluate the potential effects of collinearity as well as offer alternative specifications for media coverage variables.

4 | DISCUSSION AND CONCLUSIONS

It is now well documented that firms react to media coverage of their activities, because these represent important elements of firms' reputations (Bednar, 2012; Bednar et al., 2013; Rowley et al., 2017). The media serve as information sources for many stakeholders that are important to firms, such as stockholders, policymakers, and potential social movement organizers. While it is fairly intuitive to show that negative media coverage drives firm change in the form of adoption of board reform practices, our study went beyond demonstrating that this simple and necessary relation holds. This is because we presented two additional findings—one expected and one unexpected.

The expected finding was that indirect coverage in the form of negative media coverage of interlocked firms also influenced the focal firm. This finding is not obvious. After all, media coverage of a focal firm can draw attention to its practices, but negative media coverage of interlocked firms might not be directly relevant for the focal firm's own changes. Interlock coverage has effects only because the board members port their experience with media coverage and reactions to it from one firm to another. Such contagion of problem-solution sequences is a more subtle influence than the usual contagion effect of innovations (Davis & Greve, 1997; Shipilov et al., 2010), but has strong impact on firm behaviors.

The unexpected finding was that positive media coverage also spurred adoptions. Prior work has shown that firms reduce their problematic search when faced with positive feedback (e.g., Greve, 2003). Our specific finding related to the effects of positive media coverage on board reform clearly

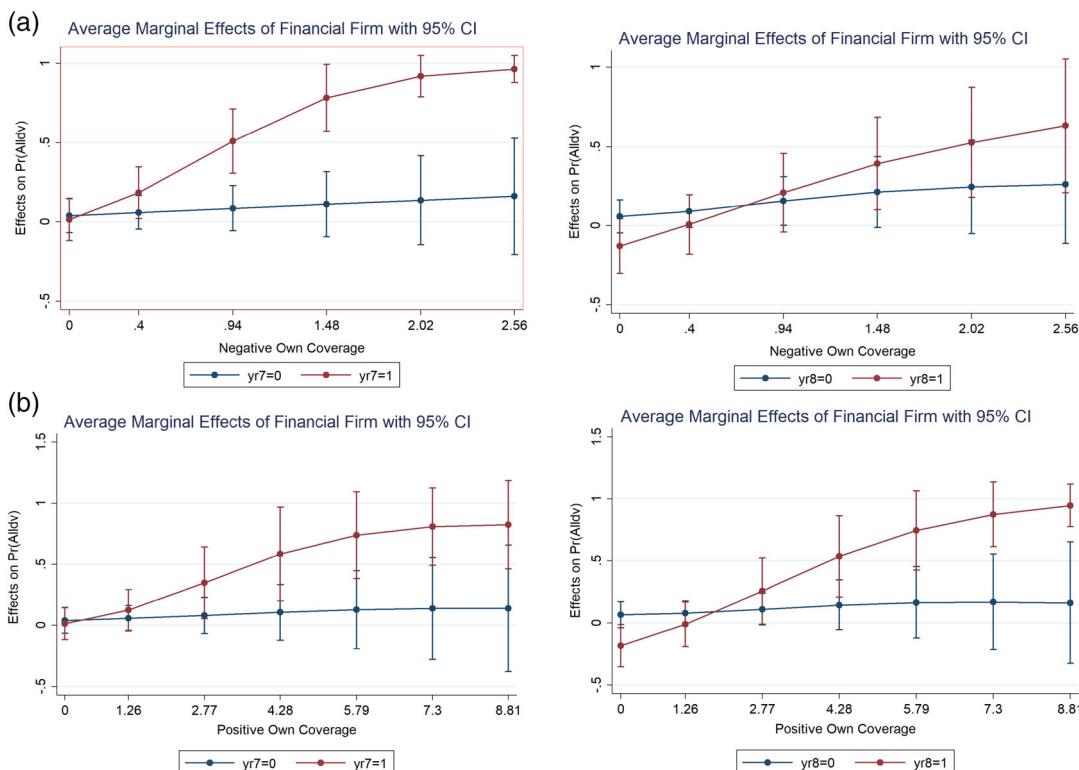


FIGURE 1 (a) Impact of negative own coverage on adoptions (H1a) and (b) impact of positive own coverage on adoptions (H1b)

does not indicate problem solving on the part of the firm, and hence is indicative of nonproblematic stimuli (March, 1981). Such stimuli occur because media coverage has a broad agenda-setting effect. Our results imply that media is influential whenever it expresses an emotionally laden viewpoint about any aspect of a company's principal-agent issues or about these issues experienced by its interlocks. Negative coverage makes the firm change in response to criticism, while the positive coverage makes the firm associate itself with the agenda that the coverage tries to promote, and this also leads to more adoption. The only way that media can fail to influence firms is through the neutral tone of coverage. We also experimented with replacing our direct coverage measures with "affect words" dimension in LIWC, which combines positive and negative emotions in one category. The results were consistent. Hence, this set of results points toward a broader view of organizational goals than the behavioral theory of the firm research has considered so far because it adds an example of how stimuli based on affective language can define goals for the firm.

We also contribute to research on the diffusion of practices through board interlocks (e.g., Davis & Greve, 1997; Haunschild, 1993). To date, this research looked at the diffusion through shared directors: as a director in one board participates in the discussion about adopting a specific practice, she/he is more likely to raise the need for the same practice in the other boards. Hence, diffusion of practices has been characterized as a one-step process: adoption in one board lead to the adoption in the others. Our study shows that even after controlling for such influences, media coverage of interlocks forces directors to pay attention to board reform practices' adoption. This insight is

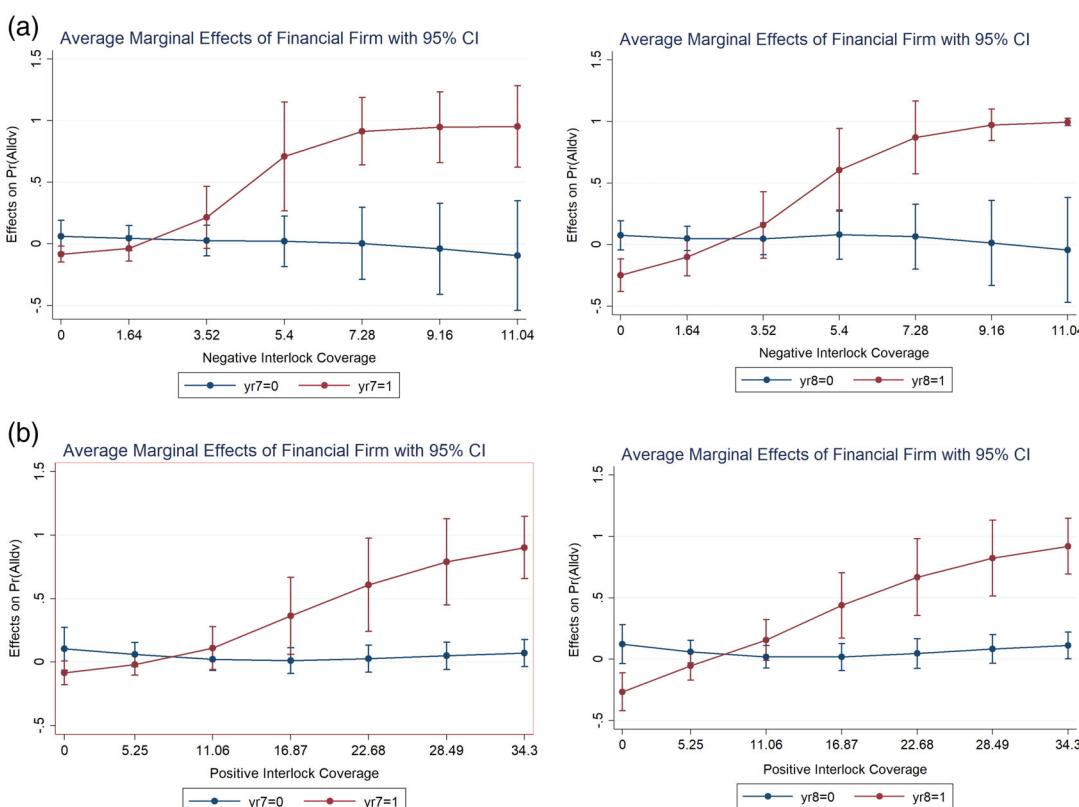


FIGURE 2 (a) Impact of negative interlock coverage on adoptions (H2a) and (b) impact of positive interlock coverage on adoptions (H2b)

new theoretically because interlock researchers have studied the spread of practices (solutions) but not the simultaneous spread of discussions (problems). The diffusion of discussions apparently follows a two-step process: external stakeholders, such as journalists, influence governance discussions in one board, and these influences spill over to the other boards, even though they are boards of firms that are not mentioned in the press.

Our theory and findings also have implications for institutional theory. From the start, institutional theory has been interested in how different sources in the environment pressure organizations to adopt new practices (DiMaggio & Powell, 1983; Meyer & Rowan, 1977). Although this research has identified a broad range of influences, much of it has focused on the organizational field, defined as the set of organizations that constitute a recognized area of institutional life (Scott, 2001). This emphasis is natural given that organizational fields are the most immediate and persistent sources of institutional pressures. As our research shows, media pressure represents an example of institutional influences, that doesn't allow the organizations to hide in the shadows, but its application has to be fairly specific. That is, targeting the firm's industry with media pressure or merely talking about the firm in neutral terms is not enough. To be effective as an institutional influence device, media pressure has to be laden with emotions and targeted either directly at the firm or at its partners.

Prior work on the relationship between media coverage and managerial action has been using negative and positive coverage as separate dimensions. This was based on an argument that people pay more attention to negative coverage (Baumeister et al., 2001). Our post hoc analysis has shown

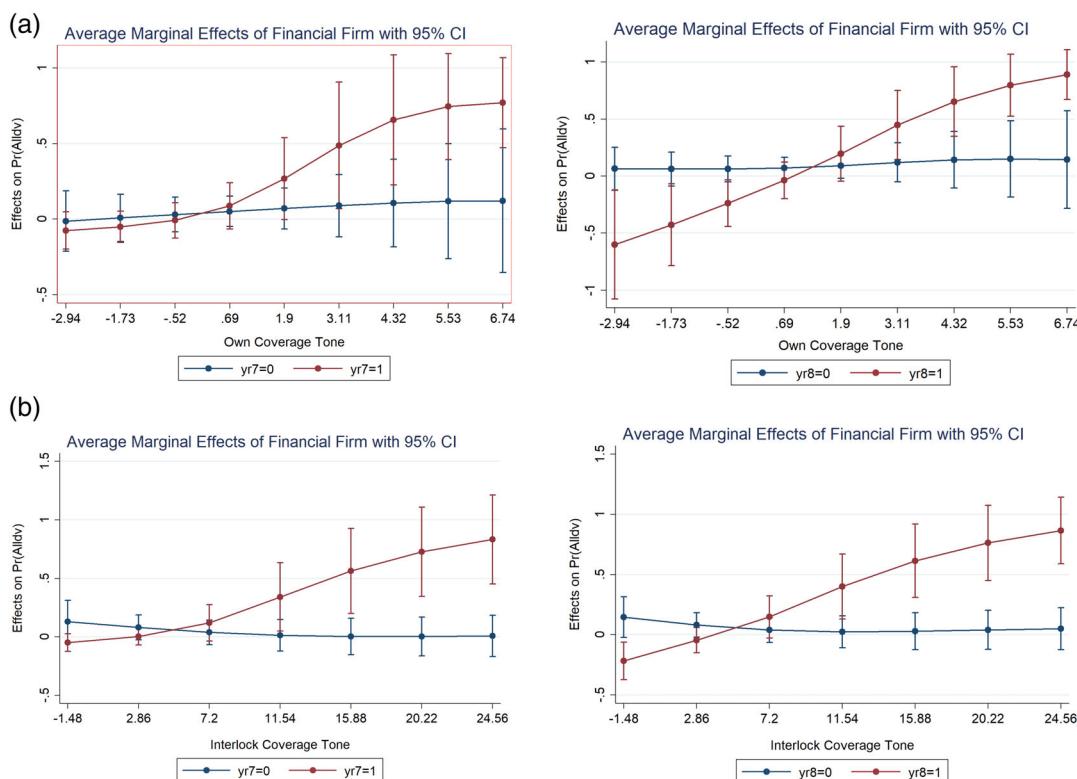


FIGURE 3 (a) Impact of tone difference in own coverage on adoption and (b) impact of tone difference in interlock coverage on adoption

Note: yr7 refers to 2007 and yr8 refers to 2008

that the impact of positive coverage trumps the impact of negative coverage when positive coverage greatly exceeds the negative coverage. This happens even when both lead to the same direction when evaluated independently. In the governance context, decision makers can incorporate positive coverage as a part of their identity. When journalists predominantly say good things about the company (and there is little negative coverage), this will affirm their beliefs about board reform being the right thing to do to continue receiving good coverage. If transparency coming from the media means good news for the company, then transparency coming from the adoption of board reform practices might also be good. Thus, companies which are praised by the media will adopt more board reform practices, even after controlling for the practices which they have already adopted.

We were studying a fairly small set of companies that all get considerable scrutiny from the external stakeholders. TSX member firms are all pillars of the Canadian economy. Media and other stakeholders pay a lot of attention to these companies. Our focus on these firms meant that after matching we had only 78 firms, of which, were 16 treated. Although these firms experienced a total of 179 events during the observation period, it is still a small dataset to derive conclusions from. Our focus also raises a question of generalizability. We believe that our findings are applicable to similar settings in which there is limited heterogeneity in stakeholder attention to companies, but there could be settings that exhibit more heterogeneity. In that case, factors that determine this heterogeneity (e.g., firm size, board member attributes, etc.) could be responsible for omitted variables that correlate both with media attention and practice adoption, and, therefore, such correlations would potentially bias regression results. At a minimum, studies in such contexts would need to examine exogeneity of media attention.

Our study has several limitations, which may also open opportunities for future work. First, we cannot observe the functioning of the boards first hand, hence, we cannot pin down the specific mechanisms through which media coverage affects the focal firm's adoption of practices. Participant observation research design would have been an ideal complement to the archival research design which we followed in this paper.

Second, our analysis is limited to reactions to a crisis in a specific country. The subprime mortgage crisis was a useful lever for identification, especially because it originated in the United States and not in Canada. It also helped us to test a model with multiple interactions without the need of instrumental variables. It would be interesting to see, however, how U.S. firms' adoption of board reform practices was affected by the timing of this same crisis.

In summary, this paper began with a premise that media coverage is known to influence firms' behavior, but what is less known is whether media coverage of firms' partners also has an effect. We distinguished the effect of direct media coverage of the firm's activities, from indirect coverage, defined as media coverage of the firms' interlock partners. We examined whether direct and indirect media coverage was laden with positive or negative emotions. We found that both direct and indirect media coverage had a strong effect on firms' adoption of governance practices, either when the tone of this coverage was positive or negative. This pattern of results shows deep and broad effects of media on the firms' actions, regardless of the tone. Whatever the journalists say about the firm or about its interlocks gets processed at the board level and influences the firms' governance.

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