Journal of Financial Economics 140 (2021) 621–643

Contents lists available at ScienceDirect

Journal of Financial Economics

journal homepage: www.elsevier.com/locate/jfec

Does personal liability deter individuals from serving as independent directors? ☆

S. Lakshmi Naaraayanan [a,*], Kasper Meisner Nielsen [b]

[a] London Business School, United Kingdom
[b] Copenhagen Business School, Denmark

ARTICLE INFO

Article history:
Received 18 September 2019
Revised 11 March 2020
Accepted 5 April 2020
Available online 9 January 2021

JEL classifications:
G30
G34
J33
M41

Keywords:
Independent directors
Reputation
Accountability
Personal liability
Director incentives

ABSTRACT

This study examines whether personal liability for corporate malfeasance deters individuals from serving as independent directors. After the introduction of personal liability in India, we find that individuals are deterred from serving on corporate boards. We find stronger deterrence among firms with greater litigation and regulatory risk, higher monitoring costs, and weak monetary incentives. Expert directors are more likely to exit, resulting in 1.16% lower firm value. We further evaluate whether contemporaneous corporate governance reforms and market developments contribute to this deterrence. Overall, our results suggest that personal liability deters individuals with high reputational costs from serving as independent directors.

1. Introduction

In the wake of corporate governance scandals in recent years, policymakers have called for increasing the independence of directors as well as their accountability to shareholders. Theoretically, increasing accountability by imposing personal liability for corporate malfeasance should improve directors' incentive to monitor management and reduce agency problems (Coffee, 1986; Jensen, 1993). On the other hand, it is argued that fear of personal liability could deter individuals from serving as directors (Romano, 1991; Sahlman, 1990) and thereby reduce board effectiveness. Despite a rich literature on corporate directors, direct evidence of whether personal liability deters individuals from serving on corporate boards is scant.

Prior literature on directors' accountability has focused on whether directors face litigation risk (Black et al.,

☆ For helpful comments and suggestions, we thank Lindsay Baran (discussant), Ran Duchin (discussant), Arpita Ghosh (discussant), Larry Harris, Stan Hoi (discussant), Poonam Mehra (discussant), Shivaram Rajgopal, Pablo Slutzky, Daniel Wolfenzon, Haibin Wu (discussant) as well as conference participants at 2019 FMA Annual Meetings in New Orleans, USC Marshall PhD Finance Conference, Fordham PhD Colloquium, 29th Asian Finance Association Meetings in Seoul, FMA Asia Meetings in Taipei 2017, 3rd Financial Research Workshop 2016, 7th Emerging Markets Finance Conference 2016, and India Finance Conference 2016. We also gratefully acknowledge financial support from the HKUST Institute for Emerging Market Studies. Nielsen thanks the Danish Finance Institute for financial support. Corresponding author: S. Lakshmi Naaraayanan, Department of Finance, London Business School, London, UK. Email: lnaaraayanan@london.edu; Kasper Meisner Nielsen, Department of Finance, Copenhagen Business School, Copenhagen, Denmark.

* Corresponding author.
E-mail addresses: lnaaraayanan@london.edu (S.L. Naaraayanan), kmn.fi@cbs.dk (K.M. Nielsen).

https://doi.org/10.1016/j.jfineco.2021.01.003
0304-405X/

2006; Armour et al., 2009; Brochet and Srinivasan, 2014), whether directors are held accountable through shareholder voting in director elections (Del Guercio, Seery, and Woidtke, 2008; Cai et al., 2009; Fischer et al., 2009), or whether they resign after shareholder dissent (Aggarwal et al., 2018). While these studies show that directors are held accountable for corporate misfortunes either through lawsuits or in the labor market for directors, we know relatively little about whether personal liability deters individuals from serving as directors.

In this study, we exploit a quasi-natural experiment from India in the form of a recent corporate governance reform, which introduced personal liability for independent directors. We hypothesize that the new law will result in an increased turnover of independent directors if personal liability deters individuals from serving on corporate boards. Because personal liability increases the cost of serving as independent directors, we expect to find stronger deterrence among firms subject to litigation and regulatory risk and high monitoring costs.

We analyze firms listed on the National Stock Exchange, the leading stock exchange in India, and find an economically and statistically significant increase in turnover rates for independent directors after the introduction of personal liability. In terms of magnitude, the annual turnover rate of independent directors increases from 10.2% to 13.9% around the reform. The increase in turnover is driven by resignations, that is directors leaving the board before their term expiration. We find no significant increase in turnover or resignation rates of inside directors, who are unaffected by the reform.

If accountability is undesirable for directors, firms might respond to the passage of the law by offering directors liability insurance (DOI), increasing director remuneration, or both. However, the ability to shield independent directors from personal liability is limited because a) DOI typically does not cover criminal or regulatory liabilities and b) director remuneration in India is subject to regulatory caps. Consistently, we find higher turnover rates in firms subject to litigation risk, regulatory risk, and high monitoring costs. We also show that after the reform, individuals are more likely to quit all their independent directorships and are less likely to accept subsequent appointments as independent directors. These findings suggest that personal liability increases the cost of serving as independent directors and directors consider reputational concerns when evaluating the desirability to serve on boards as independent directors (Yermack, 2004; Adams and Ferreira, 2008; Masulis and Mobbs, 2014).

A priori, it is unclear whether the reform, which increases the costs of serving as independent directors, will have a differential impact for high- and low-quality directors. The reform might induce high-quality directors to quit due to reputational concerns (Fama and Jensen, 1983), or the reform might induce low-quality directors to quit because they now incur the cost of their poor oversight. We find support for both arguments. Specifically, we show that the reform leads to higher turnover for expert directors as well as higher turnover for directors with attendance problems. Shareholders react negatively to the enactment of the law, and stock price reactions to director replacements result in a 1.16% lower firm value after the reform. These results are consistent with the view that the introduction of personal liability is costly.

Although our results are consistent with the view that personal liability deters individuals from serving as independent directors, the main caveat with our analysis is that our empirical specification solely attributes changes in turnover rates to the personal liability reform. Personal liability is introduced at an active time for corporate governance changes brought about by both regulatory requirements and market developments. The increase in turnover rates might alternatively be driven by contemporaneous corporate governance reforms (Varottil, 2014) or by an increased focus on corporate governance due to the emergence of proxy advisors in India (Subramanian, 2016). To ensure that we consider all contemporaneous corporate governance reforms that affect independent directors, we solicit a memorandum from a prominent legal firm. We show that these contemporaneous corporate governance reforms do not drive our results. Using data from a leading proxy advisory firm, we further show that even though proxy advisors begin to issue recommendations to vote against independent directors frequently, few of these lead to director turnover. We conclude that none of the confounding regulatory initiatives or shareholder dissent can explain our results.

Our study contributes to the existing literature on corporate boards along several dimensions. To the best of our knowledge, this study is the first to show that personal liability deters individuals from serving as independent directors. Prior literature on director accountability has focused on director accountability conditional on wrongdoing. The main takeaway from this literature is that litigation risk and the risk of electoral challenges by shareholders are overstated (Black et al., 2006). Incidences of directors' electoral challenges are infrequent, indicating that shareholders rarely hold directors accountable by proposing alternative candidates for vacant directorship (Bebchuk, 2007). Although directors rarely are challenged on the voting ballot, they are more likely to leave boards after shareholder dissent in director elections (Aggarwal et al., 2018). Other studies find that directors are replaced following lawsuits and SEC enforcement action (Romano, 1991; Farber, 2005; Ferris et al., 2007), financial irregularities (Gilson, 1990; Srinivasan, 2005; Fich and Shivdasani, 2007; Ertimur et al., 2012), or departure from value-maximizing decisions (Coles and Hoi, 2003; Harford, 2003; Jiang et al., 2014). In summary, prior literature has examined ex-post consequences of director's and firm's actions rather than the ex-ante effect of personal liability on the desirability to serve as a corporate director.

The closest studies to ours are Donelson and Yust (2014) and Chakrabarti and Subramanian (2016). Donelson and Yust (2014) study the passage of a new corporate law in Nevada in 2001, which decreased officers' and directors' personal liability. They find that after the passage of the law firm value decreases, CEO pay-for-performance sensitivity decreases, while accounting restatements increases. While these results emphasize that officer and director liability is an important governance

mechanism, Donelson and Yust (2014) cannot identify whether this effect is driven by officers, directors, or both. In contrast, the corporate governance reform in India that we consider only affects independent directors. Chakrabarti and Subramanian (2016) find that after the Satyam accounting scandal in 2009, independent directors resign from corporate boards due to perceived personal liability. In contrast, we study the effect of introducing personal liability of independent directors through corporate law. Our study provides cross-sectional evidence that independent directors respond to the introduction of personal liability by resigning from firms that have exposure to litigation and regulatory risk, high monitoring costs, and low monetary incentives.

A central thesis in this study is that the introduction of personal liability increases the accountability of independent directors to shareholders. Prior to the reform, the Companies Act of 1956 specified personal liability only for an "officer in default," a term that covers managing directors or persons with responsibility for the day-to-day management of the company. As independent directors, by definition, are not responsible for daily operations, they could not be held personally liable before the reform. In contrast, the Companies Act of 2013 introduces personal liability of independent directors by specifying that "an independent director shall be held liable, only in respect of such acts of omission or commission by a company which had occurred with his knowledge, attributable through Board processes, and with his consent or connivance or where he had not acted diligently."

In spirit, the reform imposes unlimited personal liability for fraud, supplemented with civil and criminal penalties. Following the reform, decisions in landmark cases reveal that the judicial system in India has implemented a stringent definition of personal liability. Independent directors are held personally liable for the oversight of operations, resulting in the freezing of independent directors' personal assets. Moreover, appeals arguing that independent directors have no role in day-to-day operations have been rejected. Thus, India's new regulation provides a setting that allows us to examine whether personal liability deters individuals from serving as independent directors.[1]

In the context of the US, all states except Delaware and Nevada hold independent directors liable in the case of corporate malfeasance.[2] The effect of personal liability in the United States is in many cases muted by the widespread use of DOI. In contrast, the Indian Companies Act of 2013 prohibits indemnification of an independent director for corporate malfeasance, which reduces the protective features of DOI. In addition, the market for DOI in India has historically been nonexistent (Varottil, 2010).[3] Together these features make the Indian experience particularly useful for answering the question of whether personal liability deters individuals from serving on corporate boards.

Our findings have important policy implications for the ongoing discussion on improving the effectiveness of corporate boards. Prior literature evaluates the role of independent directors as either monitors or advisors. Adams and Ferreira (2007) argue that increasing board independence may not necessarily benefit shareholders, as CEO's may be less inclined to share information with the board. On the other hand, Raheja (2005) argues that the optimal board structure is a tradeoff between reducing agency problems through increased board monitoring and ensuring that the most capable individuals are employed on the board and that those directors take the right amount of risk. Our study primarily shows the existence of costs for directors associated with introducing personal liability, leading to director replacements and lower firm value. At the same time, our results show that personal liability improves meeting attendance among incumbent directors. Collectively, these results highlight that the potential benefit of introducing personal liability to strengthen directors' incentives is counteracted by an increased cost of serving as a director.

Additionally, prior literature on DOI in the United States shows that decreased managerial liability is associated with lower firm value, higher incidence of accounting restatements (Chung and Wynn, 2008; Donelson and Yust, 2014; Gillian and Panasian, 2015), and higher cost of debt (Bradley and Chen, 2011; Lin et al., 2013). As these studies mainly focus on managerial liability, our study is the first step toward understanding whether personal liability of independent directors can improve the effectiveness of corporate boards.

The remainder of the paper is organized as follows: Section 2 provides an overview of the recent corporate governance reforms in India. Section 3 describes the data and provides summary statistics. In Section 4, we report our main empirical findings on the impact of introducing personal liability on independent director turnover rates. Section 5 focuses on how litigation risk, monitoring costs, and monetary incentives affect turnover. In Section 6, we examine the effect of personal liability on board quality and monitoring. Section 7 focuses on shareholder wealth effects. Section 8 addresses concerns about contemporaneous corporate governance reforms and market developments as alternative explanations for our findings. Section 9 offers concluding remarks. The Internet Appendix provides many supporting details.

[1] Media coverage provides corroborating anecdotes confirming our findings that independent directors being held liable personally affects their decision to stay on boards (see, "Independent directors in a fix after SC order on asset transfer in Jaiprakash Associates case," The Economic Times, Nov. 20, 2017; "Why independent directors are rushing for the exit door," Mint, Dec. 19, 2018.)

[2] Specifically, in 1986 Delaware limited a director's personal liability for breach of his or her fiduciary duties. In 2001, Nevada followed suit by limiting independent directors' liability if their behavior involved both a breach in the duty of loyalty and intentional misconduct, fraud, or a knowing violation of the law (Barzuza, 2012).

[3] In recent years, the directors and officers liability insurance (DOI) market in India has been growing, especially among larger firms (Varottil, 2014). The most popular DOI policy in India is the so-called Excess Side A cover, which limits directors' personal liability. However, these policies typically do not cover fraud, willful misconduct, and other forms of intentional misconduct.

2. Corporate governance reforms in India

Following the major corporate governance scandals in the United States and Europe in the early 2000s, there has been a renewed focus on corporate governance around the world. The regulatory efforts in shaping governance that swept the world also resulted in changes in India, where the Ministry of Corporate Affairs and the market regulator Securities and Exchange Board of India (SEBI) have taken initiatives to reform the corporate governance standards.

Starting in 1999, the SEBI appointed the Birla Committee to promote and raise the standards of corporate governance. The SEBI introduced recommendations made by the committee through Clause 49 of the Listing Agreement in 2000. Clause 49 focuses on the structure of boards and internal controls (e.g., audit committee and disclosure to shareholders) and became effective for all firms on January 1, 2006.[4] Alongside these regulatory initiatives, the government proposed three bills to amend the corporate governance sections of the Companies Act of 1956 but failed to gain support in Parliament.

In 2009 the Satyam scandal, which is the Indian equivalent of the Enron scandal in the United States, led to mass resignations of independent directors due to a higher perceived risk of personal liability (Chakrabarti and Subramanian, 2016). Following the mass resignations, the Ministry of Corporate Affairs issued a circular, which clarified that independent directors could not be "held liable for any act of omission or commission by the company or any officers of the company which constitute a breach or violation of any provision of the Companies Act, 1956."[5] The Ministry's view that independent directors were not personally liable for corporate actions under the Companies Act of 1956 was upheld in two Supreme Court cases.[6] This led to the introduction of personal liability for independent directors in the Company Bill of 2011, which was enacted in August 2013.[7] All companies were given one year from April 1, 2014 to comply with the act.

Following the passing of the Companies Act in 2013, the SEBI aligned the new law's corporate governance provisions in Clause 49. In addition to addressing issues related to liability of independent directors, the revised Clause 49 mandated at least one woman director and introduced restrictions on director eligibility and remuneration as well as a mandatory annual performance reviews for independent directors. These changes became effective from October 1, 2014.[8]

Alongside the regulatory initiatives focusing on improving board efficiency, the regulation introduced by the SEBI in 2010 required mutual funds to be transparent about their policies regarding voting on the resolutions of shareholder meetings (see Subramanian, 2016). This new regulation fueled the growth of the proxy advising industry in India, catering to the mutual funds' need for external advice on corporate governance issues.

In summary, personal liability is introduced at an active time for corporate governance changes brought about by regulation and market developments. In Section 8, we therefore address whether our findings capture everything happening in the arena of corporate governance during this time.

3. Data and summary statistics

To analyze whether the introduction of personal liability deters individuals from serving as independent directors, we obtain data on board composition and financial information for firms listed on the National Stock Exchange (NSE) in India for the period from April 1, 2009 to March 31, 2016.[9]

Data on board composition are from Indian Boards, a database maintained by Prime Database Group. This data set is equivalent to BoardEx for the United States. The data contain information on director characteristics such as age, gender, nationality, education, experience, director classification, date of appointment, cessation date, the reason for cessations, and director remuneration.

For each director, we extract information on educational qualifications and occupation based on their work profile. We then classify the expertise for each director in two ways. Under *Specialization*, we classify each director based on their educational qualification as well as their occupation. We create an indicator for directors who possess an *accounting, finance & law degree. Business & MBA* is an indicator for general business degrees and MBAs. *Academics* is an indicator for professors. Under *Highest degree,* for each director, we classify their educational qualification into *"Graduate or below,"* "*Postgraduate,*" and "*Doctorate.*"

Accounting data and financial information are from Prowess, which is the Indian equivalent of CRSP/Compustat. Prowess is maintained by the Center for Monitoring Indian Economy (CMIE) and has been used in a number of prior studies on Indian firms, including Bertrand et al. (2002), Gopalan et al. (2007, 2014), Siegel and Choudhary (2012), and Chakrabarti and Subramanian (2016). We use the latest version of Prowess, free from survivorship bias, as highlighted by Siegel and Choudhary (2012). The data set contains information from

[4] Internet Appendix Fig. A1 shows the timeline of corporate governance reforms in India. Studies such as Black and Khanna (2007) and Dharmapala and Khanna (2013) discuss the valuation consequences of Clause 49's introduction.

[5] See Circular No. 8/2011 No. 2/13/2003/CL-V, dated March 25, 2011.

[6] See KK Ahuja v. VK Vora [(2005) SCC 89)] and SMS Pharmaceuticals Ltd. v. Neeta Bhalla and Another [(2009 (3) CC (NI) 194].

[7] Section 149 of the Companies Act, 2013 states that "notwithstanding anything contained in this Act, (i) an independent director; (ii) a non-executive director not being promoter or key managerial personnel, shall be held liable, only in respect of such acts of omission or commission by a company which had occurred with his knowledge, attributable through Board processes, and with his consent or connivance or where he had not acted diligently."

[8] Clause 49 was enacted in 2000 and amended in 2001, 2006, 2008, and 2014. Internet Appendix Table A1 details the major changes to Clause 49 in 2014.

[9] The NSE is India's leading stock exchange. It is the world's 11th largest stock exchange with a market capitalization of more than US$ 2.27 trillion (as of April 2018).

Table 1
Firm, board, and turnover characteristics.
We report descriptive statistics: mean and standard deviation for our sample of NSE-listed firms from April 1, 2009 to March 31, 2016. Panel A reports the following firm characteristics: *Firm age* (measured in years), *Market capitalization* (INR billions), *Market-to-book value* of assets, *Ownership* of the controlling shareholder, *Stock return* (annualized return), and *Stock return volatility* (annualized standard deviation of the firm's daily stock returns during the year). All variables in panel A are winsorized at 1% tails. Panel B reports board characteristics: *Board size*, number of *insider & nominee directors*, number of *independent directors*, number of *unclassified directors*, and number of *female directors*. Panel C reports the *number of directorships, number of turnovers*, turnover characteristics based on reason of cessation, and *number of firms* in each financial year.

	Financial year							
	All	2009–10	2010–11	2011–12	2012–13	2013–14	2014–15	2015–16
Panel A: Firm characteristics								
Firm age (years)	36.0 (22.6)	33.5 (23.0)	34.1 (22.7)	34.9 (22.6)	35.9 (22.6)	36.8 (22.5)	37.8 (22.5)	38.7 (22.3)
Market cap. (INR billions)	63.1 (194)	56.6 (175)	59.6 (184)	55.2 (177)	55.0 (180)	61.6 (195)	77.7 (221)	73.9 (216)
Market-to-book value	1.11 (1.10)	1.17 (0.96)	1.10 (0.99)	0.99 (0.96)	0.96 (0.98)	1.03 (1.07)	1.30 (1.35)	1.24 (1.23)
Ownership of the controlling shareholder (%)	52.7 (15.9)	52.4 (16.1)	52.7 (16.0)	52.7 (15.9)	52.7 (15.9)	52.7 (15.8)	52.8 (15.9)	52.9 (15.9)
Stock return (%)	3.0 (60.6)	78.1 (49.1)	−21.3 (52.3)	−28.4 (44.1)	−23.8 (48.8)	2.7 (47.3)	30.4 (57.4)	−8.1 (49.5)
Stock return volatility (%)	51.6 (23.9)	59.0 (21.8)	50.2 (29.0)	46.8 (20.1)	43.6 (21.3)	50.3 (21.0)	56.0 (25.0)	55.6 (24.3)
Panel B: Board characteristics								
Board size	9.6 (3.2)	9.5 (3.3)	9.5 (3.2)	9.5 (3.3)	9.5 (3.3)	9.5 (3.3)	9.9 (3.2)	9.5 (3.0)
Inside/Nominee directors	4.8 (2.4)	5.1 (2.6)	5.0 (2.6)	5.0 (2.7)	4.6 (2.3)	4.6 (2.2)	4.8 (2.3)	4.7 (2.3)
Independent directors	4.7 (2.0)	4.4 (2.1)	4.5 (2.0)	4.5 (2.1)	5.0 (2.0)	4.9 (2.0)	5.0 (1.9)	4.8 (1.7)
Unclassified directors	0.5 (1.4)	1.1 (2.0)	1.0 (2.0)	1.0 (1.9)	0.2 (0.8)	0.2 (0.5)	0.2 (0.5)	0.1 (0.4)
Female directors	0.7 (0.7)	0.4 (0.7)	0.4 (0.7)	0.5 (0.7)	0.5 (0.7)	0.6 (0.8)	1.1 (0.6)	1.2 (0.5)
Panel C: Turnover of independent directors								
Number of directorships	27,775	3266	3556	3786	4229	4223	4418	4297
Number of turnovers	2648	216	199	286	436	488	632	391
Turnover reason (%)								
Resigned	0.58	0.52	0.55	0.54	0.51	0.55	0.66	0.67
Retired	0.20	0.21	0.12	0.29	0.26	0.22	0.16	0.15
Term expired	0.06	0.10	0.08	0.07	0.07	0.08	0.05	0.01
Demise	0.06	0.08	0.08	0.06	0.09	0.10	0.05	0.10
Others	0.02	0.00	0.01	0.00	0.02	0.02	0.02	0.01
Reason unknown	0.06	0.09	0.16	0.04	0.05	0.03	0.06	0.06
Number of firms	5862	741	799	836	849	864	877	896

the income statement, and balance sheet gathered from audited annual reports and daily stock prices.

Prowess also contains information on boards, number of board meetings held, and number of board meetings attended by each director. To ensure consistency, we augment the Indian Boards data set with board information and other variables, such as independent/non-independent status, and executive/non-executive status (where available) from Prowess.[10] We merge the two data sets using NSE ticker symbols.

Our final sample consists of a panel of firms listed on the NSE from 2010 to 2016. This sample corresponds to 5862 firm-year observations and 27,775 director-year observations. In our analysis, "year" refers to the financial year as opposed to the calendar year because the financial year in India runs from April 1 to March 31. Thus, we refer to the financial year starting on April 1, 2014 and ending on March 31, 2015 as 2014–15. All dates are adjusted to reflect the financial year rather than the calendar year.

Table 1 presents the descriptive statistics of the firm and board characteristics.[11] Panel A reports firm characteristics. The average firm in our sample has a market capitalization of INR 63 billion (USD 0.95 billion)[12] and a market-to-book ratio of 1.11. In comparison, the average Standard & Poor's (S&P) 1500 firm has a market capitalization of US$ 1.1 billion and a market-to-book ratio of 1.39 over the same period. Thus, our sample of Indian firms is similar to an average listed firm in the S&P 1500 index.

Panel B of Table 1 shows board characteristics. The average board consists of 9.6 directors, of which 4.7 are classified as independent directors, while we are unable to classify 0.5 directors. In comparison, Yermack (1996) reports an average board size of 12.3 for Forbes 500 firms, while Coles et al. (2014), Schmidt (2015), and Francis et al. (2016) report an average board size of around 9.5 for firms in the S&P 1500 index. Across time, the number of independent directors is increasing from 4.4 in 2009–10 to 4.8 in 2015–16. Finally, while only 0.7 of the directors are female, the average number of female directors increases from 0.4 to 1.2 because the amended Clause

[10] To merge the information across data sets, we perform a time-intensive fuzzy matching of director names in both data sets and then retrieve relevant information for each director in any given financial year.

[11] For reference, we report additional summary statistics in Internet Appendix Tables B1 and B2.

[12] One USD is equivalent to 68 INR (as of June 2018).

49 requires firms to have at least one female director by the end of the financial year 2014–15. To facilitate the inclusion of female directors, the average firm increases their board size by 0.4 directors, rising from 9.5 to 9.9 directors. While these numbers suggest that the introduction of a female quota did change the composition of boards, we formally show in Section 9 that our results are robust to excluding firms that did not have a female director before 2014.

Panel C of Table 1 reports the number of independent directorships and the number of turnovers. Over the sample period, we have 27,775 independent director-year observations. The number of independent directors in our sample increases from 3266 in 2009–10 to 4297 in 2015–16. The increase is caused by an increasing number of firms in our sample as well as an increasing number of independent directors on the average board. We observe 2648 turnovers of independent directors. We note that the incidence of turnovers is increasing around the reform, as illustrated in Fig. 1 where we report the average fraction of independent directors who turnover at the firm level.[13]

Additionally, the most common reason for director turnover is resignation, followed by retirements and expiration of term.[14] Overall, 58% of the independent directors resign, 20% retire, 6% leave due to term expiration, and 6% are caused by death. Finally, we note that the resignation rate is driving the increase in turnovers after the reform. The fraction of director turnovers due to resignation increases from 55% in 2013–14 to 66% in 2014–15.

4. Personal liability and turnover of independent directors

We start our analysis by showing a significant increase in the turnover rates of independent directors in the year personal liability was introduced. Fig. 1 shows the average turnover and resignation rates for inside and independent directors across our sample period. The top panel shows that turnover rates for independent directors have increased from 6.1% to 13.9% from 2010 to 2015. Interestingly, most of the increase occurred in the year personal liability was introduced, where the turnover rate increased from 10.2% in 2013–14 to 13.9% in 2014–15. This is a short-term effect, as turnover rate subsides to 8.6% in the subsequent year. This development contrasts the turnover rates for inside directors who have been relatively constant over the sample period, varying between 6.9% and 9.7%. Moreover, the turnover of independent directors occurs between April and September of 2014, as shown in Fig. 2, which is the six months immediately after the introduction of personal liability on April 1, 2014.[15]

The bottom panel of Fig. 1 shows that the increase in turnover rates of independent directors can be attributed to resignations. In the financial year 2013–14, 6.9% of the independent directors resigned, compared to 10.4% in 2014–15. To examine whether individuals leave all independent directorships and refrain from joining other boards in the following years, we follow individuals over time. Fig. 3 reports the fraction of individuals exiting from all the independent directorships. The pattern in director exits mirrors the pattern in turnovers in Fig. 1, suggesting that after the introduction of personal liability, individuals leave all independent directorships. The bottom panel of Fig. 3 plots the reentry rates, that is appointment as an independent director in the next financial year for individuals who exit all independent directorships. Around the reform, we find that independent directors who exit are subsequently less likely to join another board as an independent director. We conclude that individuals are more likely to exit the labor market for independent directors after the reform.

To formally test whether the turnover rates are higher after the reform, we use an ordinary least squares (OLS) regression specification, where the dependent variable is the fraction of independent directors who turn over within each board.[16] Our main specification focuses on the effect of personal liability on turnover for post-reform years of 2014–15 and 2015–16.[17] In keeping with prior literature, we control for firm characteristics (firm size, market-to-book value, return on assets, stock return, stock price volatility, and ownership of controlling shareholder) and include firm fixed effects in the specification. Including firm fixed effects ensures that time-invariant firm characteristics that might be correlated with director turnover do not drive our results. Table 2 reports the results.

As mentioned in the introduction, an important caveat with our econometric specification is that the indictor for post-liability captures other contemporaneous corporate governance reforms or market developments. As other aspects of corporate governance also matter for individuals' desirability to serve as independent directors, we evaluate in Section 8 whether these reforms and developments contribute to the estimated effect of the post-liability indicator on director turnover.

Column 1 of Table 2 shows that the turnover rate is 3.0 percentage points higher after the introduction of personal liability.[18] This effect is both economically and statistically significant given the baseline turnover rate of 7.8% before the reform.[19]

[13] Note that Table 1 reports the number of directorships and turnover at the director level, whereas Fig. 1 reports the average turnover ratio across firms.

[14] The classification of turnover is based on our data provider's information, using a combination of filings with the NSE and annual reports.

[15] The deadline for listed firms to comply with Clause 49 regulations was October 1, 2014.

[16] Given that the dependent variable is a fraction, we should ideally be using a fractional outcome regression model. However, we use an OLS model to avoid the incidental parameters problem associated with nonlinear fixed effects estimation in a panel setting (Neyman and Scott, 1948).

[17] In unreported regressions, we find stronger results using the reform year of 2014–15 rather than the entire post-reform period.

[18] In Internet Appendix Fig. A2, we examine possible pre-trends by plotting marginal effects from a firm fixed effects regression of turnover rates for independent directors on yearly indicators. We conclude that directors resigning before their term expire drive the increase in turnover rates. Additionally, in unreported results, we also examine turnover among directors below the retirement age of 70 and find that the estimated coefficient remains virtually unchanged in both magnitude and statistical significance.

[19] Our results are unaffected in terms of economic magnitude and statistical significance if we use board size as the denominator. We prefer to

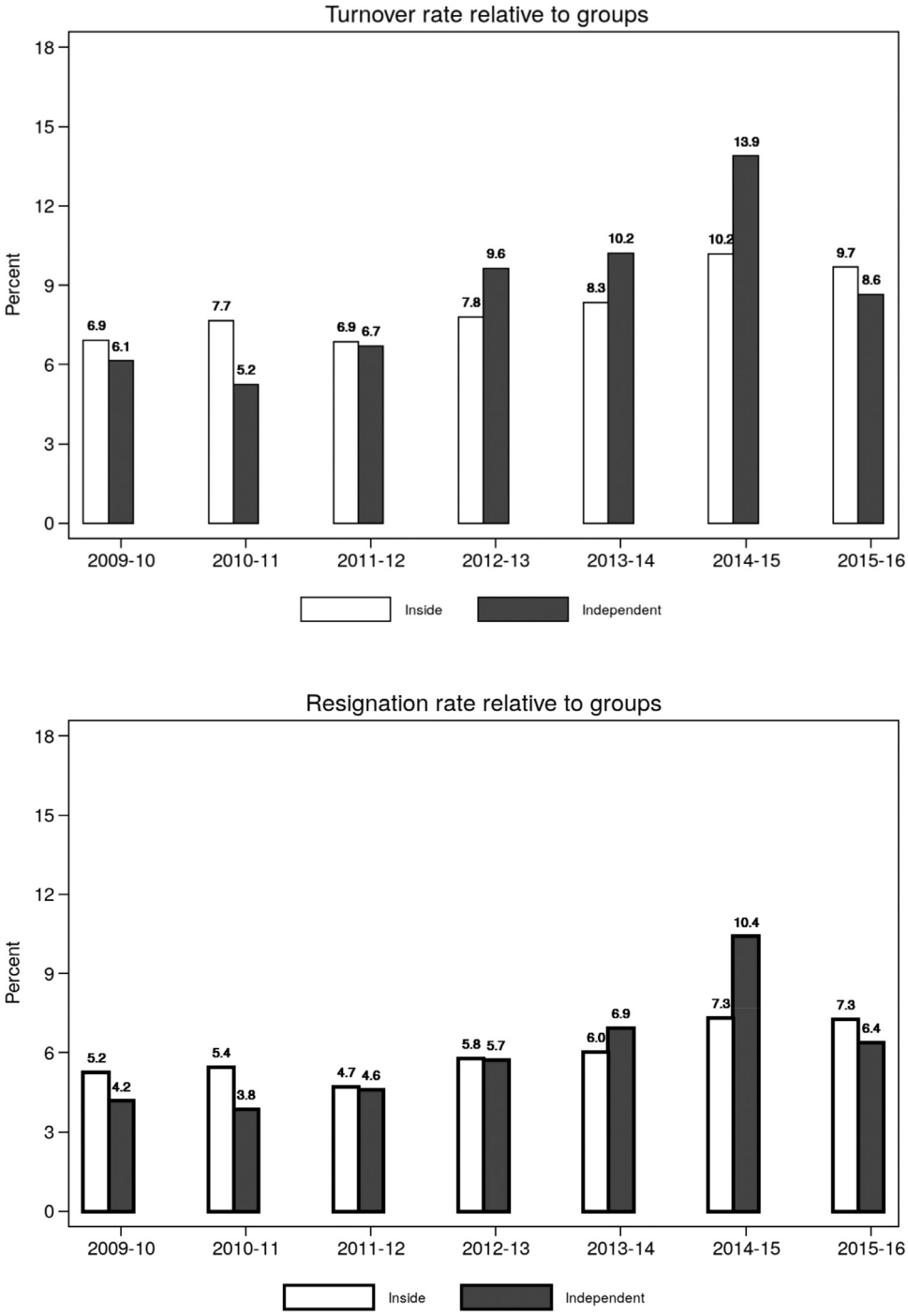

Fig. 1. Turnover and resignation rates for directors.
The top figure plots the average turnover rates in percentage by financial year for inside and independent directors for our sample of NSE-listed firms from April 1, 2009 to March 31, 2016. The bottom figure plots the average resignation rates in percentage by financial year for inside and independent directors. The white hollow bars in the plot represent inside directors, while black solid bars represent independent directors.

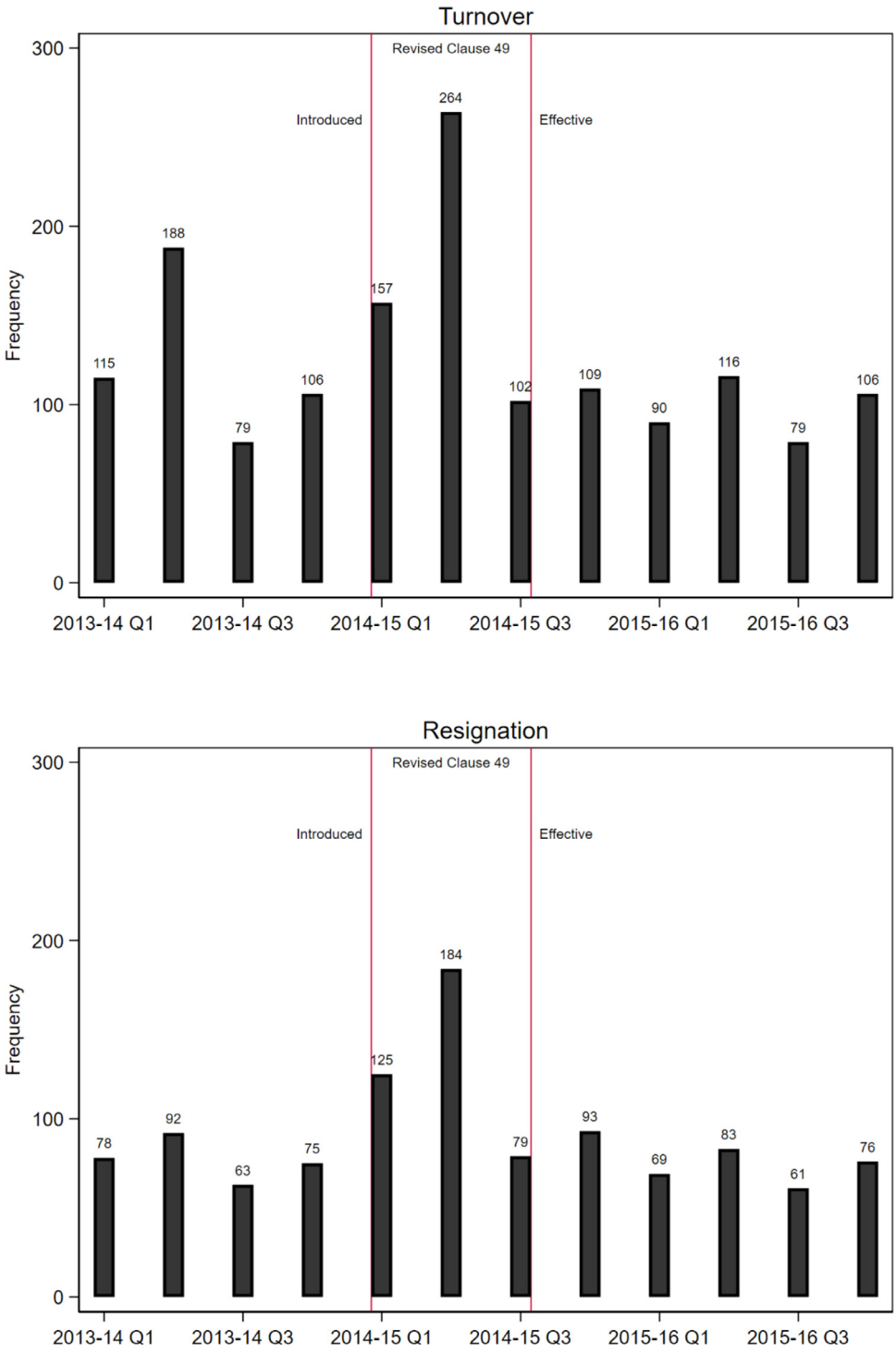

Fig. 2. Turnover and resignation frequencies for independent directors by quarter.
The top figure plots the turnover frequencies by quarter for independent directors for our sample of NSE-listed firms from April 1, 2009 to March 31, 2016. The bottom figure plots the resignation frequencies by quarter for independent directors. The vertical lines depict the introduction date and effective date of implementation for Revised Clause 49.

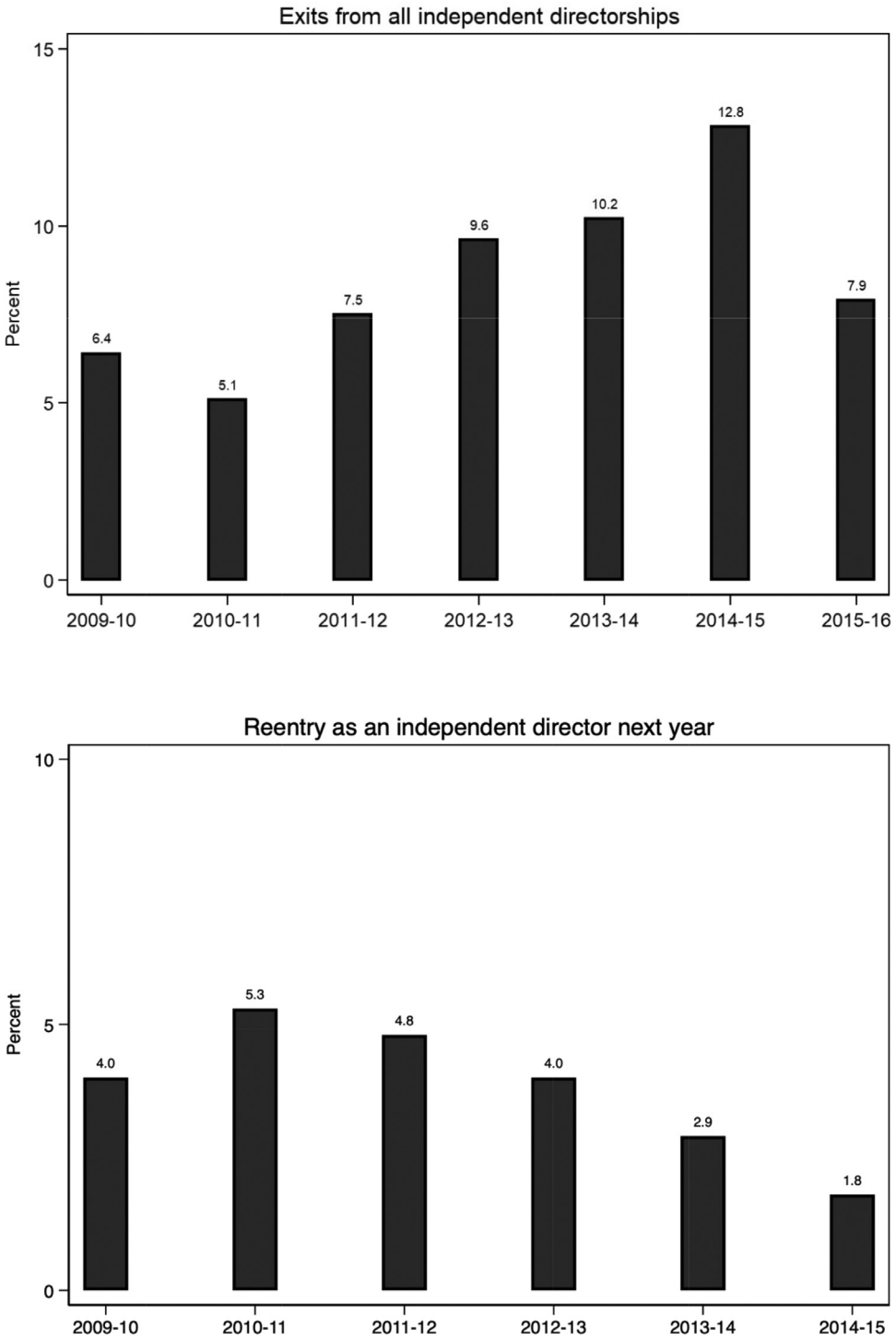

Fig. 3. Exit rates and reentry rates of independent directors.
The top figure plots the fraction of independent directors exit from all the independent director positions for our sample of NSE-listed firms from April 1, 2009 to March 31, 2016. The bottom figure plots the reentry rates for directors who exit at least one independent directorship.

Table 2
Director liability and turnover.

This table presents the impact of introducing personal liability on director turnover rates for the period starting from 2010 to 2016. The dependent variable is defined as the ratio of the number of independent (inside/all) director cessations within each firm to the total number of independent (inside/all) directors within each firm year. *Post-liability* is an indicator equal to one for financial years 2014–15 and 2015–16, as the Companies Act became effective in the financial year 2014–2015. All the regressions include the following control variables: *Firm size* is the log of book value of assets. *Market-to-book value* is the market-to-book ratio of assets, defined as market value of equity plus book value of debt over book value of assets. *Return on assets* is the ratio of profit after tax to book value of assets. *Stock return* is the annualized return, and *Stock return volatility* is the annualized standard deviation of the firm's daily stock returns during the year. In addition, we also include the *Ownership* of the controlling shareholder as a control variable. All controls are lagged by one year. We use ordinary least squares (OLS) regression specification to estimate the coefficients. Specifications 1 and 2 include firm fixed effects and standard errors are clustered at the firm level, while specification 3 includes firm-year fixed effects and standard errors are clustered at the firm-year level. Standard errors are in parentheses. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

	Independent (1)	Inside (2)	All (3)
Post-liability	3.038***	0.853	–
	(0.691)	(0.542)	
Independent director	–	–	−0.830*
			(0.442)
Independent director x Post-liability	–	–	2.392***
			(0.810)
Firm size $_{t-1}$	2.686**	0.224	–
	(1.168)	(0.723)	
Market-to-book value $_{t-1}$	−0.042	0.422	–
	(0.680)	(0.578)	
Return on assets $_{t-1}$	−2.569	−0.717	–
	(3.503)	(3.069)	
Stock return $_{t-1}$	−1.276***	−0.518	–
	(0.356)	(0.341)	
Stock return volatility $_{t-1}$	−1.203	0.248	–
	(1.255)	(0.873)	
Ownership of the controlling shareholder $_{t-1}$	−0.094	−0.078	–
	(0.058)	(0.051)	
Firm fixed effects	Yes	Yes	No
Firm-year fixed effects	No	No	Yes
Adjusted R-squared	0.133	0.166	0.235
Observations	5702	5856	11,558

To ascertain that the higher turnover and resignation rates following the reform are not driven by regulation that affects the desirability of serving as a director in general, column 2 shows results for inside directors. Column 2 of Table 2 shows that the turnover rate of inside directors is 0.8 percentage points higher after the reform, and the effect is statistically insignificant. In column 3 of Table 2, we directly test the difference in post-reform turnover rates between independent and inside directors. We include firm-year fixed effects to absorb time-varying firm characteristics that affect the desirability to serve as a director. We note that while independent directors, in general, have lower turnover rates, the interaction term between the post-liability indicator and the indicator for independent directors is positive and statistically significant. It follows that the governance reform has a differential impact on independent directors relative to inside directors. Firm-year fixed effects in column 3 of Table 2 effectively controls for any time-varying effect of the desirability to serve as a director at the firm. Collectively, the evidence bolsters our conjecture that personal liability deters individuals from serving as independent directors.

use the number of independent directors because it allows us to isolate the effect of introducing personal liability from the post-reform general desirability to serve on boards.

5. Litigation risk, monitoring costs, monetary incentives, and turnover

In this section, we provide evidence consistent with the argument that personal liability deters individuals from serving as independent directors on boards of firms with high litigation risk, high monitoring costs, and weak monetary incentives. If firms are restricted in their ability to absorb the directors' personal costs of legal liability, we expect to find higher turnover rates in firms that are exposed to litigation risk due to crime or regulatory noncompliance that cannot be covered by DOIs and in informationally opaque firms where monitoring is more difficult. We also expect directors with weak monetary incentives to respond to the introduction of personal liability by exiting such boards. In the following tables, we explore heterogeneous treatment effects along these dimensions using a linear regression model where the dependent variable is an indicator for turnover and the level of observation is director-firm-year. We use a linear probability model to avoid the incidental parameters problem associated with nonlinear fixed effects estimation in a panel setting (Neyman and Scott, 1948).

To measure litigation and regulatory risk, we focus on firms noncompliant with listing requirements and firms operating in highly corrupt environments. We create a measure of noncompliance with the listing requirements regulated by the SEBI in any of the five preceding financial years as a proxy for litigation risk.[20] From column 1 of Table 3, we note that directors are 3.7 percentage points more likely to leave the board after the reform if the firm has a history of noncompliance.[21] This effect is both statistically and economically significant.

Litigation risk might also arise as a result of corporate crimes.[22] To capture corporate crimes, we focus on firms

[20] The NSE publishes detailed information on companies that have not complied with critical clauses of the Listing Agreement including submission of annual reports (Clause 31), shareholder information (Clause 35), financial results (Clause 41), and the annual corporate governance report (Clause 49) to the stock exchange: https://www.nseindia.com/corporates/content/ComplianceArchive.htm.

[21] Note in Table 4 that the firm fixed effects absorbs the general effect of noncompliance and corrupt industry on turnover rates.

[22] In unreported tests, we use a measure of the insurance premium paid on assets, goods, and key persons as reported by firms in their annual reports. We find that a constant fraction of firms consistently reports insurance coverage throughout the sample period. The average premium amount paid by firms in any given year is 0.15% of the total assets. In the

Table 3
Director liability, litigation risk, and turnover.

This table reports the effect of litigation risk on independent director turnover for the period from 2010 to 2016. The unit of analysis is a director-firm-year. The dependent variable is an indicator that takes the value of one if an independent director vacates the office within the financial year. *Post-liability* is an indicator equal to one for financial years 2014–15 and 2015–16, as the Companies Act became effective in the financial year 2014–15. Noncompliance$_{t-5,\ t}$ is an indicator equal to one if a firm was non-compliant with the SEBI's listing agreement in any of the past five financial years. *Corrupt industry* is an indicator equal to one if an industry was classified as corrupt in the report "Bribery and corruption: ground reality in India" by Ernst & Young and The Federation of Indian Chambers of Commerce & Industry (2012). All the regressions include the following control variables: *Firm size* is the log of book value of assets, and *Market-to-book value* is the market-to-book ratio of assets, defined as market value of equity plus book value of debt over book value of assets. *Return on assets* is the ratio of profit after tax to book value of assets. *Stock return* is the annualized return, and *Stock return volatility* is the annualized standard deviation of the firm's daily stock returns during the year. In addition, we control for the *ownership of the controlling shareholder* and *fraction of independent directors on the board*. All controls are lagged by one year. We use ordinary least squares (OLS) regression specification to estimate the coefficients. All regressions include firm fixed effects using standard errors clustered at the firm-year level. Standard errors are in parentheses. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

Litigation risk	Noncompliance (1)	Corrupt industry (2)
Post-liability	0.021***	0.029***
	(0.006)	(0.006)
Noncompliance $_{t-5,\ t}$ x Post-liability	0.037***	–
	(0.010)	
Corrupt industry x Post-liability	–	0.034***
		(0.011)
Firm size $_{t-1}$	0.028***	0.027***
	(0.007)	(0.007)
Market-to-book value $_{t-1}$	−0.007**	−0.007**
	(0.003)	(0.003)
Return on assets $_{t-1}$	−0.031	−0.039
	(0.030)	(0.031)
Stock return $_{t-1}$	−0.011***	−0.011***
	(0.003)	(0.003)
Stock return volatility $_{t-1}$	−0.014	−0.013
	(0.012)	(0.012)
Ownership of the controlling shareholder $_{t-1}$	−0.001***	−0.001***
	(0.000)	(0.000)
Fraction of independent directors on the board $_{t-1}$	0.024	0.021
	(0.023)	(0.023)
Firm fixed effects	Yes	Yes
Adjusted R-squared	0.043	0.042
Observations	27,775	27,775

operating in highly corrupt industries in India as classified by Ernst & Young and The Federation of Indian Chambers of Commerce & Industry (2013). In column 2 of Table 3, we include an interaction term between the post-liability indicator and the indicator for highly corrupt industries. Directors serving on the board of firms operating in highly corrupt industries are 3.4 percentage points more likely to leave after the reform relative to directors in less corrupt industries. In summary, Table 3 shows that personal liability deters individuals from serving as independent directors on boards of firms exposed to litigation risk.

Next, we test the conjecture that if personal liability increases the cost of serving as an independent director, it is essential for the director to be able to monitor and detect potential irregularities within the firm. Thus, if personal liability deters directors, we expect them to be more likely to leave boards of opaque firms where monitoring is more difficult. Consistent with this argument, prior literature finds that directors are held accountable by shareholders and the labor market for directors when they are perceived as weak monitors (Srinivasan, 2005; Black et al., 2006; Fich and Shivdasani, 2007; Brochet and Srinivasan, 2014).

cross-section, firms that do not report insurance coverage have a higher turnover rate after the reform, but this effect is not economically or statistically strong enough to explain the increase in turnover rates.

Table 4
Director liability, monitoring costs, and turnover.

This table reports the effect of monitoring costs on independent director turnover for the period from 2010 to 2016. The unit of analysis is a director-firm-year. The dependent variable is an indicator that takes the value of one if an independent director vacates the office within the financial year. Columns 1 through 3 report measures of monitoring costs based on information opacity, while columns 4 through 6 report measures based on complexity of operations. *Post-liability* is an indicator equal to one for financial years 2014–15 and 2015–16, as the Companies Act became effective in the financial year 2014–15. *High industry R&D share* is an indicator equal to one if the firm's research and development (R&D) expenses are above the median compared to industry share of total research and development (R&D) expenses. *High industry sales growth* is an indicator equal to one if the two-digit NIC industry-level growth is above median. *High asset intangibility* is an indicator equal to one if the firm has an above median ratio of intangible to total assets. *Multiple plants* is an indicator equal to one if the firm has an above median number of operational plants within India. *Multiple states* is an indicator variable equal to one if the firm has operations in above median number of states. *Multiple industries* is an indicator variable equal to one if the firm has operations in above median number of industries measured at the two-digit NIC industry-level. All the regressions include the following control variables: *Firm size* is the log of book value of assets, *Market-to-book value* is the market-to-book ratio of assets, defined as market value of equity plus book value of debt over book value of assets. *Return on assets* is the ratio of profit after tax to book value of assets. *Stock return* is the annualized return, and *Stock return volatility* is the annualized standard deviation of the firm's daily stock returns during the year. In addition, we control for the *ownership of the controlling shareholder* and *fraction of independent directors on the board*. All controls are lagged by one year. We use ordinary least squares (OLS) regression specification to estimate the coefficients. All regressions include firm fixed effects using standard errors clustered at the firm-year level. Standard errors are in parentheses. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

Monitoring costs	Information opacity			Complexity of operations		
Variable definitions	Industry R&D share	Industry sales growth	Asset intangibility	Multiple plants	Multiple states	Multiple industries
	(1)	(2)	(3)	(4)	(5)	(6)
Post-liability	0.027***	0.024***	0.019***	0.026***	0.028***	0.028***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
High monitoring cost	−0.018	−0.010**	−0.015**	–	–	–
	(0.013)	(0.005)	(0.007)			
Post-liability x High monitoring cost	0.026***	0.031***	0.038***	0.026***	0.021**	0.020**
	(0.009)	(0.009)	(0.008)	(0.009)	(0.009)	(0.009)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.042	0.042	0.043		0.042	0.042
Observations	27,775	27,775	27,775	27,775	27,775	27,775

To identify firms in which independent directors are less likely to be able to detect irregularities, we focus on informationally opaque firms, because independent directors in such firms have inferior information relative to insiders (Raheja, 2005; Harris and Raviv, 2006; Coles et al., 2008; Duchin et al., 2010; Nguyen and Nielsen, 2010). We use three proxies for monitoring costs due to information opacity: high research and development (*Industry R&D share*), high industry growth (*Industry sales growth*) at the two-digit National Industrial Classification (NIC) level, and a high ratio of intangible to total assets (*Asset intangibility*). Indicators for high monitoring costs takes the value of one if R&D expenses, industry sales growth, and intangible assets are above the median, respectively. We also construct three indicators for high monitoring costs due to complexity in the scope of operation for firms with *multiple plants*, operations in *multiple states,* and *multiple industries*. Table 4 report our results.

Across proxies of high monitoring costs, in Table 4, we note that independent directors are more likely to leave firms with high monitoring costs after the introduction of personal liability. This finding suggests that when firm-specific information is costly, independent directors' lower monitoring capacity to detect irregularities deters them from serving on boards.

As our data on director remuneration only cover the 200 largest firms, we have limited ability to assess the interaction between personal liability and monetary incentives. Column 1 of Table 5 shows that firms with lower compensation have a higher turnover. Interestingly, firms paying low director compensation drive the increase in turnover rates in Table 2, as the post-liability indicator becomes insignificant. In column 2 of Table 5, we introduce firm fixed effects to control for time-invariant firm characteristics (e.g., corporate governance characteristics) that might explain variation in compensation and turnover rates. We note that the interaction effect between low compensation and the post-liability indicators remains negative and statistically significant. In column 3, we create a measure of director remuneration rank within the board and study its impact on turnover rates at the director level while controlling for the firms' overall pay policy by including firm fixed effects. We note that remuneration rank (i.e., high remuneration relative to other independent directors within the firm) in general decreases the probability of turnover after the introduction of personal liability. Thus, directors paid less than other independent directors serving on the same board drive the higher turnover rates.[23] Collectively, Table 5 shows that personal liability

[23] In unreported tests, we find that the independent directors who serve as chairs or members of audit and remuneration committees obtain higher compensation in the form of sitting fees. Compensation differences in commission, on the other hand, seem to be unrelated to subcommittee assignments. In further tests, we find that directors who serve on the audit or remuneration committees have a higher probability of turnover, although the effect is statistically insignificant. A caveat of this analysis is the lack of statistical power, as we only have subcommittee assignments for a small sample of firms.

Table 5
Compensation and turnover.

This table reports the effect of compensation on independent director turnover for the period from 2010 to 2016. The unit of analysis is a director-firm-year. The dependent variable is an indicator that takes the value of one if an independent director vacates the office within the financial year. The dependent variable is *total* remuneration$_{t-1}$, which is the sum of sitting fees, commission fees, stock options, and bonus for each independent director in the previous financial year. *Post-liability* is an indicator equal to one for financial years 2014–15 and 2015–16, as the Companies Act became effective in the financial year 2014–15. For each firm, we compute compensation as a fraction of market capitalization in the previous financial year. We then split the sample into *Low (High)* based on median value each year. *Compensation rank* $_{t-1}$ is the rank of each independent director within a board based on compensation in the previous financial year. Due to data availability, the sample is restricted to the top 200 firms by market capitalization in each financial year. To ensure that we are able rank directors within the board, we only keep firms with more than two independent directors in the sample. All the regressions include the following control variables: *Firm size* is the log of book value of assets, and *Market-to-book value* is the market-to-book ratio of assets, defined as market value of equity plus book value of debt over book value of assets. *Return on assets* is the ratio of profit after tax to book value of assets. *Stock return* is the annualized return, and *Stock return volatility* is the annualized standard deviation of the firm's daily stock returns during the year. In addition, we control for the *ownership of the controlling shareholder* and *fraction of independent directors on the board*. All controls are lagged by one year. We use ordinary least squares (OLS) regression specification to estimate the coefficients. All regressions include firm fixed effects using standard errors clustered at the firm-year level. Standard errors are in parentheses. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)
Post-liability	0.013	0.003	0.096***
	(0.012)	(0.014)	(0.023)
Low compensation $_{t-1}$	0.012	−0.054***	–
	(0.012)	(0.018)	
Low compensation $_{t-1}$ x Post-liability	0.069***	0.112***	–
	(0.024)	(0.024)	
Compensation rank $_{t-1}$	–	–	−0.001
			(0.003)
Compensation rank $_{t-1}$ x Post-liability	–	–	−0.011**
			(0.005)
Controls	Yes	Yes	Yes
Firm fixed effects	No	Yes	Yes
Adjusted R-squared	0.034	0.086	0.115
Observations	6506	6506	5566

deters directors serving on the board of firms that offer weak monetary incentives.

6. Personal liability and director quality

The increase in turnover rates among independent directors raises the question of whether the reform differentially affected high-quality directors. A priori, it is unclear whether the reform, which increases the costs of serving as independent directors, will have a differential impact for high- and low-quality directors. High-quality directors might quit due to reputational concerns (Fama and Jensen, 1983), and low-quality directors might leave because they now incur the cost of their poor oversight. We therefore proceed by analyzing the effect of personal liability being introduced on board quality using measures of director expertise and board attendance.

6.1. Director expertise

In this section, we examine the personal characteristics of independent directors who leave after the introduction of personal liability. We measure director expertise by classifying each director's specialization based on educational qualification (e.g., accounting, law, and finance) as well as their highest degree (graduate or below, postgraduate, and doctorate). Table 6 reports the results.

Column 1 in Table 6 reports both the baseline effect of individual characteristics on the turnover probability as well as the interaction between director expertise and the post-liability indicator. The baseline coefficients are informative about the expertise of directors who are leaving boards, while the coefficients in the interaction columns are informative about whether expert directors are more likely to leave after the introduction of personal liability. We note that pre-reform, expert directors have a lower turnover probability, but after the introduction of personal liability, they exhibit a higher turnover probability.

Interestingly, we find that directors with accounting, finance, and law degrees, in general, are less likely to leave boards but are more likely to leave the boards after the reform. For academics, we also note that the introduction of personal liability changes their desire to serve on boards. Academics are less likely to leave boards before the reform but are more likely after the reform. We conjecture that this captures reputational concerns after the introduction of personal liability, as these individuals are more likely to be concerned about their reputation (Agrawal and Chadha, 2005; Fich and Shivdasani, 2007; Chakrabarti and Subramanian, 2016). The main exception is that directors with a business degree or an MBA degree prefer to stay on board rather than hand in a formal resignation.

Next, we explore heterogeneity in director turnover based on measures of educational attainment. Column 2 shows that directors with postgraduate degrees and independent directors with PhDs are less likely to stay on boards after the introduction of personal liability. For independent directors with a PhD, the effect is stronger. The introduction of personal liability increases the likelihood of departure by 6.7 percentage points.

To understand whether the reform leads to lower director expertise on boards we also examine the characteristics of individuals who join the boards after the reform. Panel A of Internet Appendix Table D1 reports the gender composition of director appointments. There is a significant increase in appointments after the reform, especially for female directors, which is hardly surprising given that the reform requires firms to have at least one female director on the board. To avoid spurious correlation, panels B to D of Internet Appendix Table D1 focuses on male independent directors appointed to boards that already have one female director. Panel B shows that the average firm in our sample appointed slightly older directors with less prior board experience. Panels C through D shows that half of the directors have an accounting, finance, or law degree in an average firm, with more than 80% of directors having a postgraduate degree. Thus, in terms of director expertise, boards appoint male directors with a similar level of expertise compared to the pre-reform period. Internet

Table 6
Director expertise and turnover.

This table reports the effect of director expertise on independent director turnover for the period from 2010 to 2016. The unit of analysis is a director-firm-year. The dependent variable is a dummy variable that equals one if an independent director vacates office within the financial year. We measure expertise for each director in two ways. Under *Specialization*, we classify each director based on his educational qualification as well as his occupation. We create an indicator for directors who possess an *accounting, finance & law degree* or is a chartered accountant, CPA, CFA, JD, LLB, or LLM. *Business & MBA* is an indicator for general business degrees and MBAs. *Academics* is an indicator for professors. Under *Highest degree,* for each director we extract their highest educational qualification and classify them into "Graduate or below," "*Post-graduate,*" and "*Doctorate.*" *Post-liability* is an indicator equal to one for financial years 2014–15 and 2015–16, as the Companies Act became effective in the financial year 2014–15. All the regressions include the following control variables: *Firm size* is the log of book value of assets, and *Market-to-book value* is the market-to-book ratio of assets, defined as market value of equity plus book value of debt over book value of assets. *Return on assets* is the ratio of profit after tax to book value of assets. *Stock return* is the annualized return, and *Stock return volatility* is the annualized standard deviation of the firm's daily stock returns during the year. In addition, we control for the *ownership of the controlling shareholder* and *fraction of independent directors on the board*. All controls are lagged by one year. We use ordinary least squares (OLS) regression specification to estimate the coefficients. All regressions include firm fixed effects using standard errors clustered at the firm-year level. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

Director expertise	Specialization		Highest degree	
	Baseline	Interaction	Baseline	Interaction
	(1)		(2)	
Post-liability	0.029***	–	0.014*	–
	(0.007)		(0.008)	
Accounting, finance & law	−0.019***	0.015*	-	–
	(0.005)	(0.009)		
Business & MBA	−0.033***	0.002	-	–
	(0.006)	(0.010)		
Academics	−0.020***	0.028***	-	–
	(0.005)	(0.010)		
Postgraduate	–	–	−0.045***	0.030***
			(0.005)	(0.010)
Doctorate	–	–	−0.066***	0.067***
			(0.008)	(0.016)
Controls	Yes		Yes	
Firm fixed effects	Yes		Yes	
Adjusted R-squared	0.048		0.047	
Observations	25,490		26,152	

Appendix Table D2 examines the effect of personal liability on the characteristics of directors who are appointed in our sample period. We find no changes in the characteristics of appointed director after the introduction of personal liability.

We conclude that the introduction of personal liability increased the turnover rates of expert independent directors, without a commensurate change in the appointment patterns in terms of director quality.

6.2. Director monitoring

This section examines the effect of the reform on independent directors' monitoring effort, measured by their attendance in board meetings. Prior literature suggests that the frequency of board meetings can increase firm value because directors are more likely to be effective monitors if they meet frequently (Lipton and Lorsch, 1992; Conger et al., 1998; Vafeas, 1999; Brick and Chidambaran, 2010). We expect personal liability to deter individuals with attendance problems from serving as independent directors, because monitoring increases the possibility of detecting corporate fraud, thereby reducing litigation risk.

We report descriptive statistics on board meeting frequency and attendance in Internet Appendix Table E. The average firm in our sample holds 6.2 board meetings in a year, and directors, on average, attend 75% of them. More than half of the independent directors are absent from at least one or more board meetings, while more than a third (17%) of all independent directors miss 25% (50%) or more meetings.

We examine the impact of absenteeism on director turnover and report results in Table 7. We classify absenteeism using indicators for being absent from 25% and 50% or more board meetings in the previous financial year. In column 1 of Table 7, we include an interaction term between the post-liability indicator and an indicator for absenteeism. Directors with attendance problems are, in general, more likely to leave after the reform. In column 2, we include director fixed effects as well as identical interaction terms. The results show that directors with attendance problems are 5.8 percentage points more likely to leave after the introduction of personal liability. In columns 3 and

Table 7
Director absenteeism and turnover.

This table reports the effect director absenteeism on independent director turnover for the period from 2010 to 2016. The unit of analysis is a director-firm-year. The dependent variable is an indicator that takes the value of one if an independent director vacates the office within the financial year. We classify absenteeism in two ways. In columns 1 and 2, *Absent* $_{t-1}$ is defined as an indicator taking the value of one if an independent director is absent from 25% or more board meetings in the previous financial year. In columns 3 and 4 *Absent* $_{t-1}$ is defined as an indicator taking the value of one if an independent director is absent from 50% or more board meetings in the previous financial year. *Post-liability* is an indicator equal to one for financial years 2014–15 and 2015–16, as the Companies Act became effective in the financial year 2014–15. All the regressions include the following control variables: *Firm size* is the log of book value of assets, and *Market-to-book value* is the market-to-book ratio of assets, defined as market value of equity plus book value of debt over book value of assets. *Return on assets* is the ratio of profit after tax to book value of assets. *Stock return* is the annualized return, and *Stock return volatility* is the annualized standard deviation of the firm's daily stock returns during the year. In addition, we control for the *ownership of the controlling shareholder* and *fraction of independent directors on the board*. All controls are lagged by one year. In columns 1 and 3, we use a firm fixed effects specification, while in columns 2 and 4, we use a director fixed effects specification. We use ordinary least squares (OLS) regression specification to estimate the coefficients. All regressions use standard errors clustered at firm-year level. Standard errors are reported in parentheses. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

Absent $_{t-1}$ definition	Absent from 25% or more board meetings		Absent from 50% or more board meetings	
	(1)	(2)	(3)	(4)
Post-liability	0.043***	0.103***	0.043***	0.107***
	(0.007)	(0.007)	(0.007)	(0.006)
Absent $_{t-1}$	0.015**	−0.003	0.013	−0.014
	(0.006)	(0.007)	(0.009)	(0.010)
Absent $_{t-1}$ x Post-liability	0.024**	0.058***	0.050***	0.109***
	(0.012)	(0.013)	(0.017)	(0.021)
Controls	Yes	Yes	Yes	Yes
Fixed effects	Firm	Director	Firm	Director
Adjusted R-squared	0.067	0.175	0.067	0.176
Observations	18,514	18,514	18,514	18,514

4, we similar results for directors absent from 50% or more board meetings. Overall, we find stronger incremental effects of the reform for directors with attendance problems.

Resignations of directors with attendance problems might improve board monitoring if the independent directors who stay on the board have better attendance records. Fig. 4 shows the marginal effects from a firm fixed effects regression of yearly indicators on average board attendance rates for independent directors who stayed on the board for the whole year. The post-reform year has a marginal effect of 6 percentage points, while the marginal effects of the two closest pre-reform years are around 2.5 percentage points. The positive effect of the reform on monitoring function of boards is also consistent with Adams and Ferreira (2008), who show that small increases in meeting fees increase director attendance in board meetings. Given the contemporaneous change in sitting fees shown in Internet Appendix Tables C1 and C2, directors who stay on boards may respond to these fees by increasing attendance. Therefore, we cannot rule out the possibility that directors increase their monitoring intensity as measured by board attendance due to changes in compensation.[24]

7. Shareholder wealth effects

The significant outflow of expert directors following the introduction of personal liability suggests that the reform might have been costly to shareholders. At the same time, the reform also induces independent directors with attendance problems to leave boards, suggesting a positive effect on shareholder value. To understand the net effect on shareholder wealth, we therefore analyze how the stock market reacts to the enactment of the law.[25]

7.1. Stock price reactions to the enactment of the law

In Table 8, we examine stock price reactions for firms in our sample around the enactment of the law on August 29, 2013. To measure the stock price reaction, we access daily returns from Prowess for a three-trading-day period around the enactment. We remove firms without trading volume in the estimation window. To calculate the abnormal return, we assume a single-factor model, where beta is estimated using the data from the pre-event window.

In column 1 of Table 8, we find that the stock prices decline by 0.59% around the enactment date. This decline is statistically significant at the 1% level and reinforces the view that the introduction of personal liability is costly for shareholders.

In columns 2 to 10 of Table 8, we provide further evidence to suggest that the decline in the stock prices in column 1 is driven by the subsample of firms, where the cost of serving as independent directors due to the reform is likely to increase more. Specifically, we consider firm characteristics—related to director departures—from our prior analysis: litigation risk, monitoring costs, and monetary incentives. Across the columns, we find larger negative stock price reactions among firms where the re-

[24] We acknowledge that it remains a possibility that attendance rates increase due to the Companies Act of 2013 explicitly stating that independent directors should strive to attend all board meetings. That said, we think that personal liability contributes to the improved attendance rates because it increases the cost of absenteeism.

[25] The Companies Act of 2013, was notified in the Official Gazette on August 30, 2013.

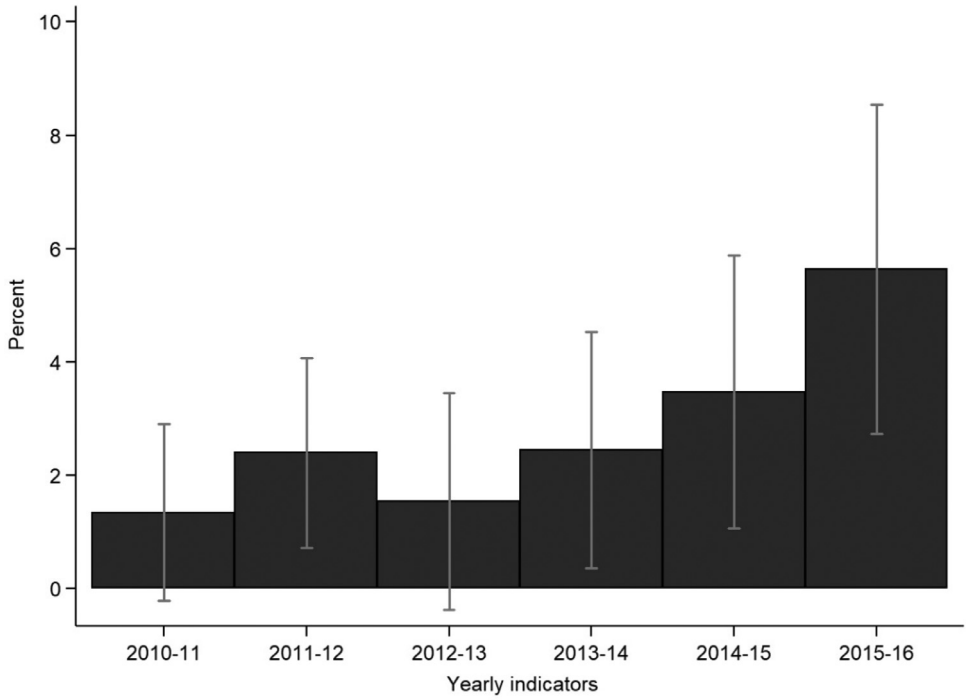

Fig. 4. Marginal effect on board attendance rates.
The figure shows the marginal changes in average board attendance rates of independent directors by financial year with 95% confidence intervals displayed on top for our sample of NSE-listed firms from April 1, 2009 to March 31, 2016. We calculate average board attendance rates as number of board meetings attended by an independent director divided by total number of meetings held during a financial year averaged at the firm-year level. Marginal effects are coefficients from an ordinary least squares regression of firm-level independent director board attendance rates on yearly indicators in a specification that controls for firm fixed effects.

Table 8
Stock price reactions to the enactment of the law.
This table shows stock price reactions around the enactment of the Companies Act, 2013. Specifically, it reports the mean cumulative abnormal returns (CAR) using an event window from one day before to one day after the announcement of the enactment on August 30, 2013. Column 1 reports the average CAR for all firms, while columns 2 and 3 report the average CAR for firms operating in corrupt industries and for firms that are noncompliant with the SEBI's listing guidelines, respectively. Columns 4 to 6 report the average CAR for firms classified as being informationally opaque due to high *industry R&D share* (column 4), high *industry sales growth* (column 5), and high *asset intangibility* (column 6). Columns 7 to 9 report the average CAR for firms classified as having complex operations due to operations in *multiple industries* (column 7), *multiple states* (column 8), and *multiple plants* (column 9). Columns 10 to 12 reports the average CAR for firms with low monetary incentives to serve as independent director due to *low total remuneration* (column 10). ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

	Overall	Litigation risk		Information opacity			Complexity of operations			Monetary incentives
	All firms	Corrupt industry	Non-compliance	Industry R&D share	Industry sales growth	Asset intangibility	Multiple industries	Multiple states	Multiple plants	Low total remuneration
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
CAR (−1, +1)	−0.591***	−1.323***	−0.796***	−0.055	−0.847***	−0.742***	−0.296	−0.441*	−0.167	−0.926***
	(0.172)	(0.364)	(0.294)	(0.285)	(0.241)	(0.224)	(0.235)	(0.230)	(0.223)	(0.295)
N	903	204	336	316	448	504	445	429	459	330

form increased the costs of serving as an independent director.

Even though these results are consistent with the view that the introduction of personal liability is costly for shareholders, we caveat our analysis. The main weakness of this approach is that all firms have the same event date, making the results prone to omitted variable bias. We therefore supplement the evidence with an analysis of stock price reactions to director cessations and director appointments where event dates are firm specific.

7.2. Stock price reactions to director cessations and appointments

As prior literature has established that turnover of independent directors is associated with negative stock price

Table 9
Stock price reaction to independent director cessations and appointments.

This table reports the stock price reaction to independent director cessations, appointments of replacement directors, and net change in firm value. Panel A reports the mean cumulative abnormal returns for one day before the event to one day after, while panels B and C report the mean cumulative abnormal returns over the same period by specialization and by the highest degree of the outgoing director, respectively. We report stock price reactions for director cessations during the financial years 2012–13 and 2014–15 and identify replacement directors as directors appointed immediately after the cessation. In columns 1 and 2, we examine stock reactions to all independent director cessations, while in columns 3 and 4, we restrict the sample to male independent directors. In column 5 and 6, we condition on having stock price reactions for cessations and appointments for the same firm and report the average across firms. In panels B and C, we condition on characteristics of the outgoing independent director. In the column titled *Difference,* we report whether the difference in mean cumulative abnormal returns are significantly different from each other. To compute net change in firm value, we condition that the firm under consideration experience both a cessation and an appointment of an independent director during the particular financial year. We measure expertise for each director in two ways. Under *Specialization*, we classify each director based on his educational qualification as well as his occupation. We create an indicator for directors who possess an *accounting, finance & law degree* or is a chartered accountant, CPA, CFA, JD, LLB, or LLM. *Business & MBA* is an indicator for general business degrees and MBAs. *Academics* is an indicator for professors. Under *Highest degree,* for each director we extract their highest educational qualification and classify them into *"Graduate or below,"* "*Postgraduate,*" and "*Doctorate.*" ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

	Independent director cessations			Independent director appointments			Net change in firm value		
	2012–13 (1)	2014–15 (2)	Difference (2) – (1)	2012–13 (3)	2014–15 (4)	Difference (4) – (3)	2012–13 (5)	2014–15 (6)	Difference (6) – (5)
A. CAR (−1, +1)	−0.05	−0.68***	−0.63**	−0.06	−0.65***	−0.59**	0.01	−1.15**	−1.16*
N	395	568		444	390		195	266	
B. By specialization of outgoing directors									
Accounting, finance & law	0.09	−0.71**	−0.81*	0.47	−1.19**	−1.66**	0.40	−1.29**	−1.69
Business & MBA	0.29	−0.64	−0.94*	−0.71	−0.85*	−0.14	0.41	−1.31	−1.72
Academics	0.38	−0.48	−0.86	−0.03	−0.71	−0.68	0.64	−0.43	−1.07
Others	−0.09	−0.63***	−0.53**	−0.23	−0.62**	−0.39	−0.17	−1.23**	−1.06
C. By highest degree of outgoing directors									
Graduate or below	1.47	0.56	−0.91	2.34	−0.29	−2.62	–	–	
Postgraduate	−0.09	−0.41*	−0.32	−0.12	−0.61*	−0.42	0.45	−1.21	−1.66
Doctorate	−0.32	−0.96*	−0.64	0.04	−0.37	−0.41	−1.68	−1.87	−0.19

reaction (Rosenstein and Wyatt, 1990; Fahlenbrach et al., 2017), we compare the stock price reactions to director turnovers in the year of the reform (FY 2014–15) to stock price reactions to director turnovers in the year before the reform (FY 2012–13).

In Table 9, we examine the stock price reactions to independent director cessations, appointments, and the net change in firm value, measured as the difference in stock price reactions to resignations and appointments of replacement directors of the same firm. To measure the stock price reaction, we follow the same procedure as in the above analysis and analyze the cumulative abnormal return in a three-day event window around the dates of cessations and the dates of the replacement announcements.[26]

To compute the net change in firm value, we impose the condition that each firm announces a cessation and a subsequent appointment of an independent director. For panels B and C, we condition on characteristics of the outgoing director. In the "difference" column, we report whether the difference in mean cumulative abnormal returns are significantly different from each other.

Consistent with the prior literature, we find that announcements of independent director turnovers are associated with negative stock price reactions, both before and after the reform. Before the reform, stock prices declined by 0.05%, compared to a decline of 0.68% after the reform. We note that the negative stock price reaction after the reform is statistically significant at the 1% level. More interestingly, the difference in stock price reactions to independent directors' departures before and after the reform equals −0.63% and is statistically significant at the 5% level. This reinforces the view that director cessations after the introduction of personal liability is costly for shareholders.

In panels B and C of Table 9, we provide further evidence to suggest that the outflow of expert directors drives the difference in stock price reactions documented in panel A. We condition on director specialization, and highest degree, and note that in both panels we find larger negative stock price reactions after the reform (relative to before) for expert director departures.

Table 9 also reports stock price reactions to appointments of replacement directors before and after the reform. For appointments, we restrict the sample to male independent directors. Stock price reactions to appointments of replacement directors are lower after the reform relative to before, and the difference is statistically significant at the 5% level. Finally, we calculate the net change in firm value as the difference between the stock price reaction to the announcement of outgoing and replacement directors around the reform. Again, we note that the difference in stock price reactions before and after the reform is economically as well as statistically significant. The net change in firm value is 0.01% when a firm replaces one independent director with another before the reform, compared to −1.15% after the reform. The difference of −1.16% is statistically significant at the 10% level. Panels B and C of Table 9 report evidence consistent with the observation

[26] Throughout the analysis, event windows refer to trading days around the announcement date, where day 0 is the announcement date or the first trading day after the announcement. The market index is proxied by the NIFTY 50 index, which is the NSE's broad-based stock market index for the Indian equity market.

that the reform induces expert directors to leave the board, leading to lower firm value.

Overall, Table 9 provides evidence that the reform adversely affects firm value. Expert directors leave boards, and incoming director appointments are of lower quality, leading to lower firm value. An alternative interpretation of the results suggests that shareholders react negatively to turnover because they learn about the quality of monitoring from the turnover events, as suggested in Fahlenbrach et al. (2017). The alternative interpretation reinforces the view that the introduction of personal liability increases the cost of serving as independent directors on firms with poor corporate governance. The negative stock price reactions to replacements further suggest that shareholders expect the replacement directors to provide inadequate monitoring efforts and advice, calling into question the potential benefit of introducing personal liability for independent directors.

8. Effect of contemporaneous corporate governance reforms and market developments

Although our results are consistent with the view that personal liability deters individuals from serving as independent directors, the main caveat with our analysis is that our empirical specification solely attributes changes in turnover rates to the personal liability reform. The increase in turnover rates might alternatively be driven by contemporaneous corporate governance reforms (Varottil, 2014) or by an increased focus on corporate governance due to the emergence of proxy advisors in India (Subramanian, 2016). In this section, we therefore address the concern that our findings capture everything happening in the arena of corporate governance during this period.

8.1. Alternative interpretation: increased workload

In this section, we consider an alternative interpretation of our findings because the reform clarified, redefined, and enlarged the ambit of directors' duties and liabilities (Varottil, 2014). Thus, one alternative interpretation of the increase in turnover rates is that independent directors respond to increased workloads.

We consider two proxies for "workload," namely, the number of directorships held and the number of board meetings held in a financial year. We measure both proxies with a lag, as of the previous financial year. If directors respond to an increased workload, we expect to find a stronger effect for independent directors who hold many directorships or serve on boards that meet frequently. In contrast, if directors respond to the introduction to personal liability, we would not expect to find a systematic relation between turnover rates and workload. Table 10 presents results examining these competing hypotheses.

Panel A of Table 10 tabulates average turnover rates for independent directors by the number of directorships held in the previous financial year. We find that turnover rates increase in the year of the reform irrespective of the number of directorships held. Specifically, we find that the increase in turnover rates are higher among directors holding one board seat and seven or more board seats, while the turnover rates for the intermediate range exhibit significant variation with no apparent pattern.[27] We conclude that this evidence is inconsistent with the explanation of independent directors leaving the board due to the increasing workload.

In panel B, we consider the number of board meetings as an alternative proxy for "workload." Our results mirror those established in panel A. Firm-level turnover rates of independent directors are quite similar across all categories except for firms that hold eight or more board meetings in a financial year. Again, we conclude that an increasing workload cannot explain the increase in turnover rates among independent directors.

8.2. Other contemporaneous corporate governance reforms

In this section, we consider the effect of contemporaneous changes to Clause 49, which specifies the corporate governance requirements for listed companies in India. As evident from Internet Appendix Fig. A1, the introduction of the Companies Act of 2013 coincides with the amendment of Clause 49 in 2014. Clause 49, among other things, regulates the composition of boards, the eligibility to serve as corporate directors, and director remuneration. Any change to the governance rules surrounding independent directors could potentially explain the spike in turnover rates and therefore deserves scrutiny. Internet Appendix Table A1 provides a detailed overview of the major changes to Clause 49′s regulation of boards and directors by comparing the 2008 version of Clause 49 with the revised version of Clause 49 in 2014.[28]

As discussed in Section 2, the SEBI issued amendments to Clause 49, which would apply to all listed firms with effect from October 1, 2014. In most cases, Clause 49 amendments followed the revisions to the Companies Act of 2013. A few amendments to Clause 49, however, imposed stricter requirements than the Companies Act. These include limitations on the number of directorships, the size of board subcommittees, and director term and tenure.

Given these contemporaneous changes, one alternative explanation for the higher turnover rates in 2015 could be the introduction of the requirement that boards should have at least one female director. Higher turnover rates could be driven by male independent directors leaving to make room for the incoming female director rather than being deterred by personal liability. To address this alternative explanation, we rely on the subsample of firms that already had a female director before the Clause 49 amendment. Around half of the NSE-listed firms had at least one

[27] Note that the corporate governance reform explicitly bans directors from holding seven or more board seats, implying that we should expect to see a higher turnover rate among directors holding seven or more seats. In the next section, we formally show that our results are not driven by forced turnovers among "busy" directors with seven or more directorships.

[28] To ensure that we capture all relevant corporate governance reforms affecting independent directors, we commissioned a memorandum from a prominent legal firm in India. The memorandum details that the relevant corporate governance rules are contained in Clause 49 and that Clause 49 has only been amended once (in 2014) during our sample period from 2009 to 2016.

Table 10
Workload and turnover.

This table reports turnover rates among independent directors by financial year for the period from 2010 to 2016. Panel A tabulates average turnover rates among independent directors by number of directorships held in the previous financial year, while panel B tabulates firm-level independent director turnover rates by number of board meetings held in the previous financial year. For the sake of brevity, we combine the bins for both workload measures at eight on the right tail of the distributions in both panels. Additionally, in panel B, we combine the bins for firms with fewer than five board meetings.

	Financial year					
	2010–11	2011–12	2012–13	2013–14	2014–15	2015–16
Panel A: Turnover rates of independent directors by number of directorships held						
1	0.06	0.09	0.11	0.13	0.17	0.10
2	0.05	0.07	0.09	0.11	0.14	0.10
3	0.05	0.05	0.10	0.12	0.14	0.07
4	0.06	0.04	0.09	0.12	0.15	0.08
5	0.03	0.05	0.09	0.08	0.14	0.09
6	0.03	0.03	0.05	0.15	0.10	0.10
7	0.07	0.07	0.12	0.06	0.25	0.10
8 or more	0.03	0.04	0.07	0.12	0.29	0.05
Panel B: Turnover rates of independent directors by number of board meetings held						
Less than 5	0.05	0.06	0.07	0.09	0.11	0.06
5	0.05	0.06	0.08	0.09	0.12	0.07
6	0.05	0.05	0.10	0.10	0.12	0.08
7	0.05	0.07	0.08	0.10	0.15	0.10
8 or more	0.07	0.08	0.13	0.13	0.27	0.09

Table 11
Other contemporaneous corporate governance reforms.

This table reports results examining the effect of other contemporaneous corporate governance reforms on independent director turnover rates for the period from 2010 to 2016. The unit of analysis is a firm-year. The dependent variable is the ratio of number of independent director cessations within each firm to the total number of independent directors within each firm-year. Column 1 shows the baseline results using the full sample from Table 3. Column 2 excludes firms without a female director prior to financial year 2014. Column 3 excludes directors with appointments on more than seven companies. Column 4 excludes directors who have served more than two terms of five years. Column 5 excludes firms where independent receive stock option compensation prior to the reform. Column 6 imposes all the restrictions in columns 2 to 5. Column 7 interacts performance and the liability indicator. *Post-liability* is an indicator equal to one for financial years 2014–15 and 2015–16, as the Companies Act became effective in the financial year 2014–15. 15. All the regressions include the following control variables: *Firm size* is the log of book value of assets, and *Market-to-book value* is the market-to-book ratio of assets, defined as market value of equity plus book value of debt over book value of assets. *Return on assets* is the ratio of profit after tax to book value of assets. *Stock return* is the annualized return, and *Stock return volatility* is the annualized standard deviation of the firm's daily stock returns during the year. In addition, we control for the *ownership of the controlling shareholder*. All controls are lagged by one year. We use ordinary least squares (OLS) regression specification to estimate the coefficients. All regressions include firm fixed effects using standard errors clustered at the firm-year level. Standard errors are in parentheses. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

Sample	Baseline	At least 1 women director	Less than 7 directorships	Less than 3 completed terms	No stock options	All at once (2) + (3) + (4) + (5)	Performance
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Post-liability	3.038***	3.278***	2.766***	3.486***	4.240***	5.382***	3.078***
	(0.691)	(1.185)	(0.693)	(0.834)	(0.985)	(1.591)	(0.702)
Return on assets $_{t-1}$ x Post-liability	–	–	–	–	–	–	−1.938
							(5.554)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.133	0.175	0.134	0.153	0.143	0.148	0.133
Observations	5702	2777	5500	4332	3094	1284	5702

female director prior to the reform in 2015. Column 1 in Table 11 shows the baseline results from Table 3 to facilitate comparison. Column 2 excludes firms without a female director and shows that the post-liability turnover rates are unrelated to the introduction of female directors.[29]

Clause 49 also introduced restrictions on the number of directorships and the duration of tenure. Individuals cannot serve on the board of more than seven companies, and the number of terms is limited to two five-year periods, followed by a three-year cooling-off period.[30] Although the regulation on tenure is grandfathered for existing directors,

[29] We perform an additional robustness test to rule out the possibility that female director turnovers drive the observed increase in post-reform director turnovers. Specifically, we examine turnover and resignation rates by gender to confirm that male director turnovers drive the overall increase in turnovers. This confirms that the vast majority of director turnovers in the post-reform era are male director turnovers.

[30] Section 149(11) of the Companies Act, 2013 states, "for the purposes of sections (10) and (11), any tenure of an independent director on the

the amendments to Clause 49 might still lead to busy directors and directors with long tenure to leave. To ascertain that the new amendments imposing restrictions on directorships and tenure are not driving the higher turnover rates, columns 3 and 4 analyze the turnover rates of directors who are unaffected by these changes.

Column 3 of Table 11 shows that turnover rates of directors with less than seven directorships increase by 2.7 percentage points after the introduction of personal liability. In column 4 of Table 11, we restrict the sample to directors with two or less completed terms for which the Companies Act grandfathers existing tenure. For this subsample of directors, we also find higher turnover rates. We conclude that our results are not driven by confounding amendments to Clause 49 regarding director eligibility.

Clause 49 also banned the use of stock options and restricted stocks for independent directors. Although few independent directors in India received stock options or restricted stock grants, the regulation of compensation might still discourage individuals from serving on boards. In column 5 of Table 11, we therefore restrict the sample to directors who did not receive stock options or restricted stocks prior to the amendment of Clause 49. Again, we find similar results.

Another concern relates to the fact that firms are undergoing other contemporaneous corporate governance reforms at the same time. Thus, excluding one item at a time and leaving other items unchanged may drive our findings. In column 6, we therefore impose the conditions in columns 2 through 5 at the same time. Again, we find higher turnover rates among independent directors after the introduction of personal liability.

The final reform we consider relates to the introduction of mandatory performance evaluations of independent directors. We test whether directors respond to performance evaluations by assessing the turnover-performance sensitivity of independent directors. If independent directors are leaving boards because they are concerned about legal liability, we should expect weaker or no change in turnover-performance sensitivity after the reform. If independent directors, on the other hand, are leaving because of the effect of performance evaluations, the turnover-performance sensitivity should increase. Column 7 in Table 11 reports the results. In general, we find a negative but insignificant effect of return on assets on turnover. Moreover, when we interact return on assets with the post-liability indicator, the interaction term is still negative and insignificant. Thus, there is no change in turnover-performance sensitivity after the reform, consistent with the liability channel.

In summary, contemporaneous corporate governance reforms in Clause 49 do not explain the increase in turnover of independent directors.

8.3. Market developments: proxy advisor recommendations and shareholder dissent

Last, this section considers the role of proxy advisor recommendations and shareholder dissent as alternative explanations for our findings. Prior literature argues that negative recommendations from proxy advisors lead to shareholder dissident and subsequently low support in director elections, leading to director resignations (Cai et al., 2009; Ertimur et al., 2018; Aggarwal et al., 2018). We note that the corporate governance reform coincides with an expansion in coverage of Indian firms by proxy advisors. Thus, one alternative interpretation of the increasing turnover rates is that independent directors respond to shareholder dissent in director elections.

To examine whether the increase in director turnovers coincide with a surge in negative recommendations by proxy advisors and shareholder dissident in director elections, we use data from Institutional Investor Advisory Services India Limited (IiAS) on director voting recommendations and voting outcomes during our sample period. Internet Appendix Table F1 reports descriptive statistics on the coverage of IiAS and voting outcomes, while Internet Appendix Table F2 reports descriptive statistics on IiAS recommendations around independent director elections. Starting from the financial year 2014–15, IiAS extended its coverage to independent directors. In total, IiAS issued recommendations on 711 resolutions that relate to elections of independent directors, and in 42% (298 out of 711) of the elections, IiAS recommended shareholders to vote against the independent director. Interestingly, not a single of these recommendations resulted in a defeat of the independent director standing for election, with an average of 96% of the cast votes in favor of the independent director. Despite the limited impact of the IiAS recommendations, it is still plausible that directors decide to resign following the dissent from proxy advisors and/or shareholders. Out of the 298 directors who IiAS recommended voting against, 21 independent directors (equivalent to 7%) subsequently decided to resign. In comparison, Table 1 shows that 621 independent directors leave the board in the financial year 2014–15, corresponding to a turnover rate of 13.8% (see Fig. 1).

More formally, Table 12 shows the impact of IiAS recommendations and election outcomes on the turnover frequency of independent directors. Panel A focuses on IiAS recommendations, while panel B focuses on shareholder voting outcomes. In panel A of column 1, we report the main result that director turnover increases after the reform. As in Tables 3 to 5, the unit of observation is director-year, and the dependent variable is an indicator for turnover. The post-liability indicator shows that turnover rates are 3.4% higher after the introduction of personal liability for independent directors. In column 2, we include an indicator for IiAS coverage taking the value of one if IiAS covers the firm and find no effect of IiAS coverage on turnover rates. In column 3, we include an indicator equal to one if IiAS recommends voting against the independent director. Again, we find no effect of IiAS voting recommendations on turnover rates. Last, in column 4, we test the joint effect of IiAS coverage and IiAS recommendations, and again we find no effect on turnover rates. Collectively, panel A of Table 12 shows that recommendations of proxy advisors do not seem to affect director turnover, which is at odds with prior literature on the effect of proxy advisors in the United States (see Cai et al.,

date of commencement of this Act shall not be counted as a term under those sections."

Table 12
Market developments, liability, and turnover, 2010–16.

This table reports results examining the impact of market developments on the impact of personal liability on director turnover rates for the period starting from 2010 to 2016. The unit of analysis is director-firm-year. Panel A reports the results examining the effect of IiAS recommendations on turnover rates, while panel B reports the results examining the impact of shareholder voting on turnover rates. The dependent variable is an indicator that takes the value of one if an independent director vacates the office within the financial year. *Post-liability* is an indicator equal to one for financial years 2014–15 and 2015–16, as the Companies Act became effective in the financial year 2014–2015. *IiAS coverage* is an indicator for whether the firm was covered by IiAS, while *IiAS recommends against* is an indicator variable for whether IiAS recommends shareholders to vote against the reelection of an independent director. *Votes against* is the fraction of votes cast that are against the reelection of an independent director. We include the following control variables: *Firm size* is the log of book value of assets. *Market-to-book* value is the market-to-book ratio of assets, defined as market value of equity plus book value of debt over book value of assets. *Return on assets* is the ratio of profit after tax to book value of assets. *Annual stock return* is the annualized return. *Stock return volatility* is the annualized standard deviation of the firm's daily stock returns during the year. In addition, we control for the *ownership* of the controlling shareholder and fraction of independent directors on the board. We use ordinary least squares (OLS) regression specification to estimate the coefficients. All regressions include firm fixed effects using standard errors clustered at the firm-year level. Standard errors are in parentheses. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

	Panel A: IiAS voting recommendations			
	(1)	(2)	(3)	(4)
Post-liability	0.034***	0.033***	0.035***	0.034***
	(0.005)	(0.006)	(0.005)	(0.006)
IiAS coverage		0.003		0.005
		(0.008)		(0.009)
IiAS recommends against			−0.027	−0.029
			(0.018)	(0.019)
Control variables	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes
Observations	27,775	27,775	27,775	27,775
Adjusted R-squared	0.042	0.042	0.042	0.042
	Panel B: Shareholder voting outcomes			
	(1)	(2)	(3)	(4)
Post-liability	0.035***	0.035***	0.034***	0.035***
	(0.005)	(0.005)	(0.005)	(0.005)
Votes against (%)	−0.004**	−0.003		
	(0.002)	(0.003)		
Firm-level average votes against (%)		−0.001		−0.003
		(0.004)		(0.003)
Excess votes against (%)			−0.003	−0.002
			(0.003)	(0.003)
IiAS recommends against				−0.017
				(0.020)
Control variables	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes
Observations	27,775	27,775	27,775	27,775
Adjusted R-squared	0.042	0.042	0.042	0.042

2009; Ertimur et al., 2018; Aggarwal et al., 2018). We hypothesize that this might be because proxy advisory services in India in 2014–15 is a relatively new phenomenon.

Panel B of Table 12 shows the impact of shareholder voting outcomes on the turnover rate of independent directors. In column 1, we include the fraction of votes cast against the independent director and find an almost identical point estimate on turnover rates. To capture unobservables such as firm-level heterogeneity determining dissent, we follow Aggarwal et al. (2018) and include the aggregate firm-level votes against and excess votes against. In column 2, adding the average fraction of firm-level vote against an independent director as an additional explanatory variable does not affect turnover rates. In column 3, we include excess votes against, calculated by subtracting the average fraction of votes against all independent directors in a firm from each directors' votes against, and again we find no effect on turnover rates. Finally, in column 4, we test the joint effect of IiAS recommendations and shareholder voting, and again we find no effect on turnover rates. The limited impact of shareholder dissent might be due to the fact that the Indian market has a higher proportion of retail investors who lack strong incentives to vote in director elections.

In summary, Table 12 shows that the coefficient on post-liability across specifications remains stable in magnitude and statistical significance. This finding bolsters our interpretation that the increase in turnover of independent directors relates to the introduction of personal liability rather than to contemporaneous developments in the arena of corporate governance.

9. Concluding remarks

This study investigates whether personal liability deters individuals from serving as independent directors. In theory, personal liability should improve directors' incentive to monitor management and reduce agency problems and entrenchment. On the other hand, it is argued that personal liability deters individuals from serving as directors, particularly if they care about their reputation.

To address whether personal liability deters individuals from serving as independent directors, we exploit a quasi-natural experiment in the form of a recent reform of the corporate law in India, which introduced personal liability and increased the roles and responsibilities of independent directors. We find that turnover rates and resignation rates increase significantly after the reform. We also find that personal liability deters individuals from serving on corporate boards and find stronger deterrence among firms that have greater litigation and regulatory risk and higher monitoring costs.

We show negative shareholder wealth effects of the reform; stock prices, on average, decline by 59 basis points at the announcement of the reform. The reform leads to an increase in expert director turnover, resulting in a 1.16% lower shareholder value for the average firm. On the positive side, directors enhance their monitoring on corporate boards by changing their attendance behavior.

Our findings are relevant to policymakers and regulators of corporate governance, who have called for greater personal liability. If personal liability deters individuals from serving on boards, the potential benefit from introducing personal liability to strengthen directors' incentive to monitor management and to reduce agency problems and entrenchment might not materialize. Fear of personal liability seems to deter individuals from serving as directors and could potentially reduce board effectiveness.

References

Adams, R., Ferreira, D., 2007. A theory of friendly boards. J. Finance 62, 217–250.

Adams, R., Ferreira, D., 2008. Do directors perform for pay? J. Account. Econ. 46, 154–171.

Aggarwal, R., Dahiya, S., Prabhala, N., 2018. The power of shareholder votes: evidence from director elections. J. Financ. Econ. 133, 134–153.

Agrawal, A., Chadha, S., 2005. Corporate governance and accounting scandals. J. Law Econ. 48, 371–406.

Armour, J., Black, B., Cheffins, B., Nolan, R., 2009. Private enforcement of corporate law: an empirical comparison of the United Kingdom and the United States. J. Empir. Leg. Stud. 6, 687–722.

Barzuza, M., 2012. Market segmentation: the rise of Nevada as a liability-free jurisdiction. Va. Law Rev. 98, 935.

Bebchuk, L., 2007. The myth of the shareholder franchise. Va. Law Rev. 93, 675–732.

Bertrand, M., Mehta, P., Mullainathan, S., 2002. Ferreting out tunneling: an application to Indian business groups. Q. J. Econ. 117, 121–148.

Black, B., Cheffins, B., Klausner, M., 2006. Outside director liability: a policy analysis. J. Inst. Theoret. Econ. 162, 5–20.

Black, B., Khanna, V., 2007. Can corporate governance reforms increase firm market values? Event study evidence from India. J. Empir. Leg Stud. 4, 749–796.

Bradley, M., Chen, D., 2011. Corporate governance and the cost of debt: evidence from director limited liability and indemnification provisions. J. Corporate Finance 17, 83–107.

Brick, I., Chidambaran, N.K., 2010. Board meetings, committee structure, and firm value. J. Corporate Finance 16, 533–553.

Brochet, F., Srinivasan, S., 2014. Accountability of independent directors: evidence from firms subject to securities litigation. J. Financ. Econ. 111, 430–449.

Cai, J., Garner, J., Walkling, R., 2009. Electing directors. J. Finance 64, 2389–2421.

Chakrabarti, R., Subramanian, K., 2016. Effect of Director Liability On Corporate boards: Evidence Using an Exogenous Shock. Indian School of Business Unpublished working paper.

Chung, H., Wynn, J., 2008. Managerial legal liability coverage and earnings conservatism. J. Account. Econ. 46, 135–153.

Coffee, J., 1986. Shareholders versus managers: the strain in the corporate web. Mich. Law Rev. 85, 1–109.

Coles, J., Daniel, N., Naveen, L., 2008. Boards: does one size fit all? J. Financ. Econ. 87, 329–356.

Coles, J., Daniel, N., Naveen, L., 2014. Co-opted boards. Rev. Financ. Stud. 27, 1751–1796.

Coles, J., Hoi, S., 2003. New evidence on the market for directors: board membership and Pennsylvania Senate Bill1310. J. Finance 58, 197–230.

Conger, J., Finegold, D., Lawler, E., 1998. Appraising boardroom performance. Harv. Bus. Rev. 76, 136–164.

Del Guercio, D., Seery, L., Woidtke, T., 2008. Do boards pay attention when institutional investor activists "just vote no"? J. Financ. Econ. 90, 84–103.

Dharmapala, D., Khanna, V., 2013. Corporate governance, enforcement, and firm value: evidence from India. J. Law Econ. Organ. 29, 1056–1084.

Donelson, D., Yust, C., 2014. Litigation risk and agency costs: evidence from Nevada corporate law. J. Law Econ. 57, 747–780.

Duchin, R., Matsusaka, J., Ozbas, O., 2010. When are outside directors effective? J. Financ. Econ. 96, 195–214.

Ertimur, Y., Ferri, F., Maber, D., 2012. Reputation penalties for poor monitoring of executive pay: evidence from option backdating. J. Financ. Econ. 104, 118–144.

Ertimur, Y., Ferri, F., Oesch, D., 2018. Understanding uncontested director elections. Manag. Sci. 64, 3400–3420.

Ernst Young, Federation of Indian Chambers of Commerce & Industry, 2013. Bribery and corruption: ground reality in India. Technical report.

Fahlenbrach, R., Low, A., Stulz, R., 2017. Do independent director departures predict future bad events? Rev. Financ. Stud. 30, 2313–2358.

Fama, E., Jensen, M., 1983. Separation of ownership and control. J. Law Econ. 26, 301–325.

Farber, D.B., 2005. Restoring trust after fraud: does corporate governance matter? Account. Rev. 80, 539–561.

Ferris, S.P., Jandik, T., Lawless, R.M., Makhija, A., 2007. Derivative lawsuits as a corporate governance mechanism: empirical evidence on board changes surrounding filings. J. Financ. Quant. Anal. 42, 143–165.

Fich, E., Shivdasani, A., 2007. Financial fraud, director reputation, and shareholder wealth. J. Financ. Econ. 86, 306–336.

Fischer, P., Gramlich, J., Miller, B., White, H., 2009. Investor perceptions of board performance: evidence from uncontested director elections. J. Account. Econ. 48, 172–189.

Francis, B., Hasan, I., Mani, S., Ye, P., 2016. Relative peer quality and firm performance. J. Financ. Econ. 122, 196–219.

Gillan, S., Panasian, C., 2015. On lawsuits, corporate governance, and directors' and officers' liability insurance. J. Risk Insur. 82, 793–822.

Gilson, S., 1990. Bankruptcy, boards, banks, and blockholders: evidence on changes in corporate ownership and control when firms default. J. Financ. Econ. 27, 355–387.

Gopalan, R., Nanda, V., Seru, A., 2007. Affiliated firms and financial support: evidence from Indian business groups. J. Financ. Econ. 86, 759–795.

Gopalan, R., Nanda, V., Seru, A., 2014. Internal capital market and dividend policies: evidence from business groups. Rev. Financ. Stud. 27, 1102–1142.

Harris, M., Raviv, A., 2006. A theory of board control and size. Rev. Financ. Stud. 21, 1797–1832.

Jensen, M., 1993. The modern industrial revolution, exit, and the failure of internal control systems. J. Finance 48, 831–880.

Jiang, W., Wan, H., Zhao, S., 2014. Reputation concerns of independent directors: evidence from individual director voting. Rev. Financ. Stud. 29, 655–696.

Lin, C., Officer, M., Wang, R., Zou, H., 2013. Directors' and officers' liability insurance and loan spreads. J. Financ. Econ. 110, 37–60.

Lipton, M., Lorsch, J., 1992. A modest proposal for improved corporate governance. Bus. Lawyer 48, 59–77.

Masulis, R., Mobbs, S., 2014. Independent director incentives: where do

talented directors spend their limited time and energy? J. Financ. Econ. 111, 406–429.
Neyman, J., Scott, E.L., 1948. Consistent estimates based on partially consistent observations. Econometrica 16, 1–32.
Nguyen, B., Nielsen, K., 2010. The value of independent directors: evidence from sudden deaths. J. Financ. Econ. 98, 550–567.
Raheja, C., 2005. Determinants of board size and composition: a theory of corporate boards. J. Financ. Quant. Anal. 40, 283–306.
Romano, R., 1991. The shareholder suit: litigation without foundation? J. Law, Econ. Organ. 7, 55–87.
Rosenstein, S., Wyatt, J., 1990. Outside directors, board independence, and shareholder wealth. J. Financ. Econ. 26, 175–191.
Sahlman, W., 1990. Why sane people shouldn't serve on public boards. Harv. Bus. Rev. 68, 28–35.
Schmidt, B., 2015. Costs and benefits of friendly boards during mergers and acquisitions. J. Financ. Econ. 117, 424–447.
Siegel, J., Choudhury, P., 2012. A reexamination of tunneling and business groups: new data and new methods. Rev. Financ. Stud. 25, 1763–1798.
Srinivasan, S., 2005. Consequences of financial reporting failure for outside directors: evidence from accounting restatements and audit committee members. J. Account. Res. 43, 291–334.
Subramanian, S., 2016. Proxy advisory industry in India. Corporate. Ownersh. Control 13, 371–378.
Vafeas, N., 1999. Board meeting frequency and firm performance. J. Financ. Econ. 53, 113–142.
Varottil, U., 2010. Evolution and effectiveness of independent directors in Indian corporate governance. Hastings Bus. Law J. 6, 281.
Varottil, U., 2014. Directors' Duties and Liabilities in the New Era. NSE Quarterly Briefing Technical report.
Yermack, D., 1996. Higher market valuation of companies with a small board of directors. J. Financ. Econ. 40, 185–211.
Yermack, D., 2004. Remuneration, retention and reputation incentives for outside directors. J. Finance 9, 2281–2308.