Do foreign institutional investors improve board monitoring?

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Abstract

Do foreign institutional investors (FIIs) improve board monitoring of the firms in which they invest? Exploiting the global financial crisis of 2007-08 as an exogenous shock that resulted in a significant decline of FIIs' ownership in the Indian market, we find evidence of a causal link between FIIs' ownership and different dimensions of board monitoring. Specifically, the empirical results suggest that FIIs reduce board size, busyness, network size, CEO power, and CEO pay, and improve board diligence. However, we also document a negative link between FIIs' ownership and board independence, indicating FIIs do not view independent directors as effective monitors. In terms of implications of FIIs monitoring, our results suggest that a higher level of FIIs' ownership positively influences the link between board monitoring and firm value as well as promoting innovation.

Highlights:

- Do foreign institutional investors (FIIs) improve firm monitoring at the board level?
- Findings suggest that FIIs' ownership is associated with improved board monitoring.
- FIIs positively influence the link between board monitoring and firm performance.

JEL Classification: G23, G3, G32, O3

Keywords: Board monitoring, foreign institutional investors, financial crisis, firm value, innovation.

1. Introduction

Although it is well established that boards can be a powerful group,[1] their effectiveness can vary greatly (Adams et al., 2010; Tung, 2011). This is of concern as effective boards are one of the critical elements of effective internal corporate governance. This variation has motivated academic research that investigates reasons for differences in effectiveness and, more importantly, what can be done to improve board monitoring. Our study adds to this growing area of literature by examining whether foreign institutional investors (denoted as FIIs), influence boards' monitoring activities[2] in an emerging market. Activist "outside" shareholders, particularly FIIs, are likely to perform arms-length monitoring to mitigate the expropriation by controlling shareholders, thereby benefiting minority shareholders (Huang and Zhu, 2015). Therefore, understanding the role of FIIs in improving the quality of board monitoring is particularly important in emerging markets that are typically challenged by the "twin agency" problems of controlling corporate insiders and state ruler discretion (Stulz, 2005).

Despite convincing theoretical arguments, to the best of our knowledge, there is no empirical study that uses board level data investigating the link between FIIs' ownership and different facets of board monitoring. Further, the empirical constraint of overcoming the endogeneity problem is a major challenge in establishing a causal link between FIIs and board monitoring (Gillan and Starks, 2003).[3] In this study, we overcome this identification challenge by exploiting the 2007-08 financial crisis as an exogenous shock that significantly diminishes

[1] Board powers are large and wide ranging. They include initiating and approving all major corporate decisions (e.g. major investment, financing, acquisition, divestiture, and liquidation decisions), hiring and firing CEOs, determining CEO and senior officer compensation, nominating (re-nominating) directors, and advising senior management.

[2] Schwartz-Ziv and Weisbach (2013) find that board time and energy are primarily concentrated on monitoring activities. Specifically, they find that approximately two-thirds of the issues that boards discuss are supervisory in nature, boards vote on a only a single option in 99% of the issues discussed and disagree with the CEO only 2.5% of the time.

[3] For example, it is argued that firms make changes in corporate governance practices to attract and retain FIIs (Kim et al., 2010). On the other hand, FIIs themselves play a major role in prompting change in firm-level corporate governance practices (Aggarwal et al., 2011).

the ownership of FIIs in the Indian market.[4]

The literature views that large outside shareholders, such as FIIs, can contribute in mitigating the problem of agency costs by demanding higher managerial performance (Shleifer and Vishny, 1986, 1997; Claessens et al., 2002; Noe, 2002). Consistent with this view, empirical studies by Ferreira and Matos (2008), Aggarwal et al. (2011) and Huang and Zhu (2015) suggest that FIIs improve firm-level corporate governance to limit the expropriation by controlling shareholders. However, what is not clear from these studies is how FIIs shape the governance of firms, i.e. what are the specific channels through this FIIs may improve the governance. Our study attempts to address this void in the literature by investigating whether exogenous changes in FIIs' firm ownership in India causes variations in different qualities of board monitoring.

The 2007-08 global financial crisis provides an ideal opportunity to study the role of FIIs in improving the monitoring of boards. For instance, Blanchard et al. (2010) and Fratzscher (2012) document that the 2007-08 crisis triggered the outflow of foreign capital from emerging markets to advanced economies. In case of the India emerging market, the financial crisis resulted in a substantial decline of FIIs' ownership, around 1.09% points within a year in 2009.[5] This setting allows us to test two issues. First, whether this exogenous shock to FIIs' ownership causes any change in board monitoring. Second, although there is some evidence that FIIs' ownership affects both firm value (Ferreira and Matos, 2008) and firm innovation activities (Bena et al., 2017; Luoung et al., 2017), what is not empirically shown in the literature whether such positive outcomes are associated due to improved board monitoring driven by changes in FII's ownership. As such, we investigate whether changes in FIIs' ownership moderates the link between board monitoring and two dimensions of firm performance, i.e. firm value and

[4] The financial crisis has been extensively used an exogenous shock by studies including Puri et al. (2011), Kovner (2012), Lins et al. (2013) and Buchanan et al. (2018), among others.
[5] See Section 3.3 for details.

innovation.

Our empirical investigation identifies seven different board level proxies that capture differing features of board monitoring. These characteristics include board size, board independence, board busyness, board diligence, network size, CEO power, and CEO pay level.[6] Although these characteristics proxy board monitoring, identifying whether the high or low level of these proxies improves board monitoring effectiveness has been empirically challenging.[7] Consequently, the direction of the effect of FIIs' ownership on these proxies that capture the board monitoring is largely an empirical question. In terms of empirical identification strategy, we use a matched sample of treatment and control firms (based on the FIIs' level of ownership prior to the onset of the 2007-08 financial crisis) and take account of other factors that affect board monitoring (see section 3.3 for the identification strategy). As such, we address the concerns of endogeneity by employing a difference-in-differences (DiD) approach in which we compare the level of board monitoring before and after the crisis as a function of firms' FIIs' ownership.

The results of our study indicate that a change in FIIs' ownership is highly likely to trigger changes in the different features of board monitoring. Specifically, our results present the following findings. First, the negative relation between FIIs and size of the board supports the view that increasing interest of FIIs reduce the size of the board to shrink the cost of monitoring associated with the larger board (Raheja, 2005). Second, though conventional wisdom suggests that independent directors (IDs) improve board monitoring as they reduce agency costs, we find a negative influence of FIIs on board independence. Such a negative association suggests that FIIs might not view IDs as a means to improve board monitoring in

[6] See section 3.2.1 for definition and discussions.

[7] For example, on the one hand, small boards are often associated with better monitoring and firm performance (Jensen, 1993; Bennedsen et al., 2008; Harris and Raviv, 2008), on the other hand, large boards are also considered to be optimal under certain circumstances (Raheja, 2005; Coles et al., 2008; Jackling and Johl, 2009). Likewise, the empirical investigation on the influence of board independence, busy boards, board connections, and pay of CEO on firm performance has yielded mixed results. See section 2 for further details.

an emerging market. This evidence is in line with the argument that managers can appoint directors who are independent according to regulatory definitions[8] but are nonetheless still overly sympathetic to management (Romano, 2005; Cohen et al., 2012).[9] Third, we find that FIIs lessen board busyness to improve the time spent on the monitoring activities of the board, a finding consistent with the argument that busyness of boards has an adverse effect on the quality of board's monitoring role (Core et al., 1999; Shivdasani and Yermack, 1999).

Fourth, we find evidence of a positive influence of FIIs on board diligence, reflecting FIIs' crucial role in enhancing the monitoring intensity of the board and CEO (Hermalin, 2005; Kolev et al., 2017). Fifth, we show that FIIs help in the downsizing of the board's network size (the number of outside firms with whom the firm shares common directors). As large board network size is associated with lower monitoring and increased agency problems (Fich and White, 2003; Fich and Shivdasani, 2006; Bizjak et al., 2009), our results suggest that FIIs could play an important role in the improvement of board monitoring by optimizing the network size of the board. Finally, we find that FIIs seem to diminish both the power as well as pay/incentives of the CEO, consistent with the theoretical prediction of the existing studies (Hermalin and Weisbach, 1998; Dah and Frye, 2017). Overall, our empirical evidence suggests that growing interest of FIIs is very likely to have a direct influence on the monitoring of firms by improving the quality of the board's monitoring role. These findings are robust to a series of additional checks.

In terms of implications related to firm performance, our results show that the negative link between observed between FIIs and board size, board busyness, network size, CEO power,

[8] It is worth noting that we use the Indian regulatory definition (Clause 49) whereby "independent directors" is defined as a non-executive director who does not have any material pecuniary relationships or transactions with a company or its related persons/entities/promoters/subsidiaries. See Clause 49 for further details (http://indianboards.com/files/clause_49.pdf).

[9] "Indian Board Report 2015-16" prepared by Hunt Partners in collaboration with PwC India and AZB Partners find "*… almost 12 percent of the companies have directors related to the promoters and 25 percent have directors directly related to the CEO or the chairperson."* ("Most Indian Companies don't have lead independent director", *Forbes India*, November 30, 2015)

and CEO pay, potentially enhances firm valuation and innovation activities. Similarly, we find that FIIs' positive link with board diligence also likely to have a positive influence on firm value and innovation. These findings suggest that firms in which FIIs have a positive role in board monitoring are also associated with higher firm values and promote innovation.

Our study contributes to two different strands of literature. First, we extend the literature that links FIIs' ownership and board monitoring of firms (Gillan and Starks, 2003; Aggarwal et al., 2011; Huang and Zhu, 2015). Gillan and Starks (2003) offer a theoretical intuition that growth in FIIs' ownership should result in better monitoring and governance. Huang and Zhu (2015) also provide evidence of how FIIs' involvement in corporate governance in China promotes the rule of market principles in corporate voting and governance practices.[10] Similarly, other studies have also noted that FIIs improve the overall *Governance Index*, as in Aggarwal et al. (2011).[11] These studies do not directly investigate the link between FII ownership and effectiveness of board monitoring. To the best of our knowledge there is no comprehensive and empirical evidence on the link between FII ownership and board effectiveness and whether FIIs play a direct role in improving monitoring at the board level. Our study differs from this literature by showing how firm-level causality runs from FIIs to the firm-level board monitoring. We show that FIIs, as large shareholders, are effective monitors and could be a crucial means of improving board effectiveness.

Second, our study also contributes to the literature that examines the impact of FIIs on firm performance and innovation. Ferreira and Matos (2008) and Aggarwal et al. (2011) find that FIIs are instrumental in improving firm valuations and operating performance through an improvement in corporate governance. Luoung et al. (2017) and Bena et al. (2017) show that

[10] They find that FIIs achieve shorter reform processes in split-share restructure reforms and that FIIs are less prone to political pressure, as firms with FIIs provide the highest compensation ratio offered by non-tradeable shareholders to tradeable shareholders.

[11] Aggarwal et al. (2011) note that though the Governance Index can capture the overall firm level governance, it may not capture specific aspects, such as board monitoring, that really matter to corporate governance.

FIIs acting as active firm monitors promote long-term tangible investments such as patent and R&D. Further, theories on board monitoring suggest that efficient board monitoring enhances firm value and innovation (Fich and Shivdasani, 2006; Brick and Chidambaran, 2010; Black and Kim, 2012; Guo and Masulis, 2015; Liu et al., 2015).[12] Our study differs from these studies as we show that the various board-level changes, induced by higher FIIs' ownership, further strengthen the positive relation between FIIs and firm performance and firm innovation.

Overall, our results suggest that opening up an emerging market to FIIs can be an effective way to improve the effectiveness of board monitoring and potential agency problems. This, in turn, should benefit the minority/outside shareholders. For emerging markets that are characterized as having poor corporate governance practices, higher informational inefficiencies, opaque markets and less stringent enforcement of regulations, our findings support the argument that FIIs could generate positive externalities in emerging markets through their board monitoring activities.

The remainder of the paper is organized as follows. We present the discussion of relevant literature and develop the testable hypotheses in Section 2. In Section 3 we discuss the data sources and all the variables used in this study, along with a discussion of the financial crisis as an exogenous shock and the identification strategy. Section 4 presents a discussion of empirical findings that include quasi-natural experiments, robustness tests and results on testable implications. Finally, Section 5 concludes the paper.

2. Related literature and hypotheses development

Prior literature argues that FIIs, by the virtue of their large shareholding, have the ability (through voting rights) and the incentive (through cash-flow rights) to monitor the board and

[12] On a similar note, Faleye et al. (2011) find that intense board monitoring has a negative effect on both firm value and corporate innovation.

the management.[13] As FIIs' investment in emerging markets has increased[14], this can influence corporate governance either through direct intervention or through indirect supply and demand effects. It is argued that FIIs' monitoring is primarily targeted at enhancing firms' long-term performance (Bena et al., 2017). For instance, Ferreira and Matos (2008) find that FIIs' pressure can curtail a managers' incentives to (over)invest, providing evidence that FIIs can influence firm value through monitoring.[15] Similarly, Aggarwal et al. (2011) find that FIIs play a dominant role in improving firm-level governance located in countries with weak shareholder protection.[16] Also, Huang and Zhu (2015) suggest that FIIs perform arms-length monitoring to limit expropriation by controlling shareholders by promoting the rule of market-based principles in corporate voting and governance practices.

Based on these arguments, we suggest that FIIs are in a better position and have higher incentives to influence the effectiveness of board monitoring for a number of reasons. First, by the virtue of being "foreign", these FIIs act as independent monitors as they are less prone to having business dealings with the host firms (Gillan and Starks, 2003; Aggarwal et al., 2011; Kim et al., 2016; Bena et al., 2017). As they are less burdened by ties to corporate insiders, FIIs can help reduce the agency cost by improving the quality of board monitoring. Second, as FIIs can "vote with their feet", firms with higher FIIs' ownership are likely to endorse better board monitoring of firm activities. For example, Leuz et al. (2009) argue that FIIs are likely to leave firms that do not improve their governance. Third, compared to the domestic institutional investors (DIIs), FIIs are less prone to local political pressure, hence they more

[13] See Shleifer and Vishny (1986), Kaplan and Minton (1994), Kang and Shivdasani (1995), Maug (1998), Claessens et al. (2002), and Noe (2002).

[14] Net investment by FIIs in the Indian equity market has grown from INR 440 billion (approximately US$9.6 billion) in 2003-04 to INR 1,102 billion (approximately US$18.01 billion) in 2014-15 (Source: Reserve Bank of India). Also, see "India is the jewel in the emerging market crown", Financial Times, May 31, 2015; "Faster growing India confirmed as most dynamic emerging market", Financial Times, May 31, 2016.

[15] They find a positive relation of FIIs' ownership with return on assets and net profit margin, whereas they find a negative relation with capital expenditure.

[16] They also find that firms with high FIIs' ownership are more likely to terminate poor performing CEOs and experience improved firm value over time.

likely to perform arms-length monitoring (Huang and Zhu, 2015). For instance, Kim et al. (2016) argue that with the extremely light burden of political pressure, FIIs are able to resist non-shareholder value-maximizing decisions of the firms.

Fourth, FIIs not only possess a deep understanding of best global corporate governance practices, they also have a wide range of experience in improving the monitoring of the firm (Kim et al., 2016). These knowledge, experiences, and skills set put them in a powerful position to ensure that firms adopt best governance practices, including better board monitoring (Aggarwal et al., 2011). Fifth, FIIs are equipped with innovative investment technology, cutting-edge analytical tools and a pool of talented fund managers that help them improve the effectiveness and efficiency of board monitoring (Kim et al., 2016). Finally, a large body of empirical studies have agreed that FIIs are at a relative informative disadvantage (higher in emerging markets) compared to their domestic counterparts because of distance, language barrier and higher cost of information acquisition (Coval and Moskowitz, 1999, 2001; Leuz et al., 2009; Baik et al., 2013). This relative disadvantage means FIIs are likely to demand higher information disclosure and higher transparency to ensure that they can function as better board monitors. Given these arguments on how FIIs can influence the effectiveness of board monitoring, we propose the following as our main hypothesis:

Main Hypothesis: Ceteris paribus, firms with greater FIIs' ownership have higher levels of board monitoring.

We test this hypothesis using seven different proxies reflecting different qualities of board monitoring, which leads us to generate seven different sub-hypotheses as discussed below.

2.1. FIIs' ownership and board size

Board size refers to the number of directors on the firm's board. The effectiveness of board size in monitoring firms has been theoretically and empirically examined with no conclusive evidence. Agency-theory, based evidence provided by Lipton and Lorsch (1992) and Jensen (1993), argues that smaller boards are more cohesive, more productive and can monitor the firm more effectively, whereas larger boards may not be effective because of problems such as "social loafing" and high coordination costs. Similarly, Raheja (2005) and Harris and Raviv (2008) theoretically suggest that firms, where insiders' interests align to those of the shareholders, require smaller boards. They argue that larger boards become less effective in providing monitoring services due to free-riding problems. However, resource dependence-theory, based on evidence provided by Dalton et al. (1999) and Lehn et al. (2009), suggests that larger boards have access to critical resources and possess greater collective information that is important in performing high-quality monitoring and an advising role.

The empirical evidence on the effect of board size on firm value is also mixed. Yermack (1996), Eisenberg et al. (1998) and Bennedsen et al. (2008) find that smaller boards are associated with a higher firm value, supporting the agency theory. Cheng (2008) also finds evidence that large boards have lower variability in their performance. However, Jackling and Johl (2009) report a positive association between board size and firm performance and Linck et al. (2008) do not find any significant differences in firm performance between firms with a large board size or those with a small board size. Raheja (2005) argues that the size of the board depends on the directors' and the firm's characteristics; hence, a large board may be optimal under different circumstances. Reconciling this conflicting evidence, Coles et al. (2008) find a U-shaped relationship between board size and firm value, suggesting either very small or very

large boards are optimal.[17] Based on the mixed theoretical predictions and empirical evidence on the optimal size of the board and its effectiveness, the impact of FIIs' ownership on board size remains an empirical issue. Hence, we develop our first sub-hypotheses as:

Sub-hypothesis 1a: Ceteris paribus, firms with greater FIIs' ownership are more likely to reduce board size.

Sub-hypothesis 1b: Ceteris paribus, firms with greater FIIs' ownership are more likely to increase board size.

2.2. FIIs' ownership and board independence

Board independence is measured by the proportion of IDs on the firm's board. The role of IDs in monitoring firms has been a topic of intense debate. Conventional wisdom dictates that IDs are effective monitors as they are less influenced by insiders and managers.[18] Despite governance codes and mandatory rules around the world that push for higher representation of IDs on the board, empirical evidence on its effectiveness is mixed and questionable. Theorists observe that while IDs are less affiliated to CEOs, they possess significantly poorer access to firm information and have weaker financial incentives to perform than do corporate officers. Empirically, the correlations of board independence and firm performance metrics yield weak positive or mixed results (Bhagat and Black, 2002; Dahya et al., 2008; Guo and Masulis, 2015).

With respect to emerging markets, studies indicate that IDs are generally ineffective monitors. For example, Ma and Khanna (2015) find that the social norm of reciprocity compromises IDs' decisions. They show that IDs generally defer to the top managers as they

[17] There are few papers examining the effectiveness of board size in emerging markets. However, corporate governance research on the Indian market finds a positive impact of corporate governance reforms, aimed at improving board monitoring, on firm valuation (Black and Khanna, 2007; Balasubramanian et al., 2010; Dharmapala and Khanna, 2012; Koirala et al., 2018).

[18] Fama (1980) argues that IDs have an incentive to be an effective monitor in order to improve their reputational capital in the labor market. Fama and Jensen (1983) argue that IDs are better suited to perform monitoring tasks as they are free from economic interests.

feel obliged for having been appointed to a directorship position. As such, despite the theoretical prediction that IDs may improve firm monitoring, FIIs in emerging markets may not be very keen on promoting board independence.[19] Although the relevance of IDs on firm performance is not convincingly established, Miletkov et al. (2014) find that foreign investors have a strong preference for firms with more IDs. Given the mixed evidence on the link between IDs and firm performance, and the evidence on the ineffectiveness of IDs in emerging markets, the influence of FIIs' ownership on board independence is an empirical question. As such, we develop the following two competing sub-hypotheses:

Sub-hypothesis 2a: Ceteris paribus, firms with higher FIIs' ownership are more likely to improve board independence.

Sub-hypothesis 2b: Ceteris paribus, firms with higher FIIs' ownership are more likely to reduce board independence.

2.3. FIIs' ownership and board busyness

Board busyness is proxied by the number of members who also serve on the board of other firms (Col and Sen, 2018). Adams et al. (2010) propose a simple theory, which predicts that busier directors put less effort into their duties, which is counterproductive to firms' performance. However, Adams et al. (2010) also suggest busy directors can spend more effort per activity, implying that busy directors are relatively high-quality directors. Consistent with the quality view, earlier studies support a positive link between board busyness and firm performance (Kaplan and Reishus, 1990; Booth and Deli, 1996; Ferris et al., 2003). However, other studies find convincing evidence of the negative link between board busyness and firm

[19] Further, Raheja (2005) and Adams and Ferriera (2007) conjecture that the importance of independent boards also depends on the nature of the firm. Firms with complex operations (such as R&D intensive firms and high tech firms) require a higher proportion of insiders on the board. Coles et al. (2008) contend that "complex" firms require more independent boards due to higher advising needs, but R&D intensive firms require more insiders on the boards as they have vital specific knowledge about the firm. Interestingly, Linck et al. (2008) find the opposite result, i.e. that R&D intensive firms prefer more independent boards.

performance, supporting the *less effort* theory. For example, Fich and Shivdasani (2006) and Falato et al. (2014) show that busy directors are less able to monitor effectively and advise management, which in turn negatively affects firm performance. Hauser (2018) also argues that the effectiveness of board members (be it insider or independent) depends on their ability to devote substantial effort and time to gather relevant information, provide adequate advising and assist deliberating decisions. Clearly, given the differing evidence on the monitoring ability of busy boards, whether FIIs should strive to reduce or increase the extent of board busyness is an empirical question, as reflected in the following two sub-hypotheses:

Sub-hypothesis 3a: Ceteris paribus, firms with higher FIIs' ownership are more likely to reduce the extent of board busyness.

Sub-hypothesis 3b: Ceteris paribus, firms with higher FIIs' ownership are more likely to increase the extent of board busyness.

2.4. FIIs' ownership and board diligence

Board diligence refers to the ability of board members to fulfill their responsibilities, measured as the average proportion of meetings attended by board members. Kolev et al. (2017) argue that diligent boards can constrain CEOs' opportunism, which depends on the frequency of their attendance at board meetings. Regular attendance at board meetings provides directors with relevant and timely information that helps them to become active monitors. In a similar vein, Hermalin (2005) argues that board diligence improves board monitoring by making CEOs work harder and deliver higher CEO effort.

The impact of board diligence on firm performance has not been fully explored in the literature. Vafeas (1999) and Adams (2005) view the frequency of board meetings as an important monitoring proxy that also has firm value implications. They argue that firms with poor financial performance meet more often as there is a need for increased board monitoring.

Similarly, Chou et al. (2013) also find that the attendance at board meetings by the directors themselves, a proxy of better board monitoring, enhances firm value significantly (see also Brick and Chidambaran (2010). Sarkar et al. (2008) suggest that a diligent board reduces earnings management. Also, Col and Sen (2018) report that institutional ownership positively affects board diligence and that increased board diligence improves firm value. Since board diligence seems to positively influence firm valuation, we expect a positive link between FIIs' ownership level and board diligence, as argued in the following hypothesis:

Sub-hypothesis 4: Firms with higher FIIs' ownership are more likely to improve board diligence.

2.5. FIIs' ownership and board networks

The board networks, also known as board interlocks, refer to the extent of board members' connections with other firms. This is measured as the number of firms with which the given firm shares common directors. The monitoring ability and effectiveness of boards with many networks, i.e. more interlocked directors, is questionable in the literature. A board network could be beneficial to firms if such a network facilitates information or knowledge transfer. For instance, Lynall et al. (2003) and Khanna and Thomas (2009) argue that director interlocks could facilitate coordination across firms due to joint resource allocation and information dissemination among them.

However, Fich and White (2003), and Fich and Shivdasani (2006) argue that boards comprised of directors with large outside networks are less likely to perform a better monitoring role and this could potentially reduce the independence of board members and exacerbate agency problems. Firms with higher director network connections are also related to higher CEO compensation and involvement in option backdating, potentially increasing agency problems (Hallock, 1997; Bizjak et al., 2009).

In relation to firm performance, Fich and White (2005) report that board networks, especially CEOs' networks, benefit the directors themselves but not the firm's shareholders.[20] Whereas, Helmers et al. (2017) provide evidence of improved innovation activities due to the information transmission through a large board network. Against the backdrop of conflicting prior evidence, the direction of the effect of FIIs on the board network size is an empirical question. As such, we propose the following two competing sub-hypotheses:

Sub-hypothesis 5a: Ceteris paribus, firms with higher FIIs' ownership are more likely to reduce board networks.

Sub-hypothesis 5b: Ceteris paribus, firms with higher FIIs' ownership are more likely to increase board networks.

2.6. FIIs' ownership and CEO power

CEO's power refers to the ability of the CEO to influence key decisions in a firm. The ability of the CEO to influence decision making is reduced when there is the presence of other relevant decision-makers. As such, we classify the CEO as powerful if the CEO is the promoter, the chair and the only executive member on the board (Adams et al., 2005). With regard to the effect of powerful CEOs on the board monitoring, agency theory argues that powerful CEOs can influence the effectiveness of outside directors, as they have access to the firm's resources and information (Combs et al., 2007). Hermalin and Weisbach (1998) argue that board monitoring and its efficiency decline over time as the power of the CEO increases. Increased CEO power also distorts the compensation contract, reducing the board efficiency (Bebchuk et al., 2002; Bebchuk and Fried, 2003; Ryan and Wiggins, 2004). Further, Onali et al. (2016) state that powerful CEOs may invest in non-value maximizing projects to fulfill their own

[20] Similarly, Falato et al. (2014) report a significant negative market reaction to an "attention shock" (measured as death of directors and CEOs) in board-interlocked firms. Fich and Shivdasani (2007) also report a valuation loss for interlocked firms at the time of a lawsuit filing.

managerial objectives, such as increasing perquisites, empire-building and expense preference behavior.

The evidence on the impact of CEO power on firm outcomes is generally consistent. For example, Adams et al. (2005) find that firm performance is more variable for firms run by powerful CEOs. Similarly, Liu and Jiraporn (2010) and Jiraporn et al. (2012) show a significant rise in the cost of debt of firms with powerful CEOs that is detrimental to firm value. Further, Bebchuk et al. (2011) suggest that powerful CEOs use their influence to raise their pay slice above the optimal level, which results in a lower market-based value, lower accounting profitability and lower (negative) acquisition announcement stock returns. Given the negative impact of CEO power on the board monitoring, as well as its effectiveness in terms of firm performance, we expect higher FIIs' ownership to lower the power of the CEO as reflected in the following sub-hypothesis:

Sub-hypothesis 6: Higher FIIs' ownership reduces the power of the CEO.

2.8. FIIs' ownership and CEO pay

CEO pay denotes the total remuneration (such as salaries, bonuses, fees, and other benefits) received by the CEO in a year. Agency theory suggests that compensation is a primary tool to control CEO behavior and align the interest of shareholders and managers, thereby reducing the agency costs (Jensen and Meckling, 1976; Nyberg and Fulmer, 2010). However, empirical evidence continuously questions the validity of agency theory on the alignment of financial interest and managerial preferences (Dalton et al., 2007). Studies argue that CEOs are in fact paid for luck and performance beyond the CEO's control, and this behavior is strongest among poorly governed firms (Bertrand and Mullainathan, 2001). Empirical evidence also suggests that CEOs are overpaid and such overcompensated CEOs exacerbate the agency problems as

they are not focused on protecting shareholders' interests (Core et al., 1999; Dah and Frye, 2017).

With regard to the effect of CEO pay on firm performance, Chang et al. (2010) argue that CEO pay reflects the ability of the CEO to positively affect firm performance. On the other hand, Brick et al. (2006) find that cronyism exists while determining the CEO compensation and such excess compensation leads to poor firm performance (Core et al., 1999). As the literature provides mixed evidence on the effect of CEO pay on board monitoring and firm performance, we empirically examine whether FIIs reduce or increase the compensation of CEOs. Hence, our final sub-hypotheses are:

Sub-hypothesis 7a: Ceteris paribus, firms with higher FIIs' ownership are likely to have lower levels of CEO pay.

Sub-hypothesis 7b: Ceteris paribus, firms with higher FIIs' ownership are likely to have higher levels of CEO pay.

3. Data, variables and identification strategy

3.1. Data sources

We retrieve information for all the publicly listed companies in India (both in the National Stock Exchange (NSE) and Bombay Stock Exchange (BSE)). Dooley and Hutchinson (2009) argue that the global financial crisis in emerging markets began towards the end of 2008, hence, we assign the onset of the crisis period from 2009. We restrict our sample to four years before (2006 to 2008) and four years after (2009 to 2012) the onset of the crisis period, i.e. eight fiscal years in total.[21] The firm-year level data are gathered from the Prowess database maintained

[21] In India, the fiscal year ends on the 31st of March of the subsequent year.

by the Centre for Monitoring Indian Economy (CMIE). Prowess is a leading data source[22] providing detailed information on the ownership structure and other financial (stock market and non-market based) information of firms in India. Prowess also supplies comprehensive data on board members of each firm-year, such as name of the board members, committees they sit in, their designation (such as CEO, Managing Director), number of meetings attended, classification (such as promoter/non-promoter, executive/non-executive, independent/non-independent), salary and benefits, and directorships held in a number of other companies. Information on board meetings, along with its date and purpose, can also be accessed from Prowess. These details help us to develop various board monitoring proxies, which are discussed in the following section.

For the innovation variable, we collect patent data from several sources. Our analysis focuses on the application date of a patent. First, we rely on the Indian and international patent data (till 2009) used by Helmers et al. (2017).[23] For additional periods, we collect data from two sources. First, the information on Indian patent applications is collected from the Indian Patent Advanced Search System (InPASS).[24] We extract all the relevant information from the search system, such as the name of the firm, date of application, and International Patent Classification (IPC) codes for a patent that has been filed by an Indian firm[25]. Second, following Helmers et al. (2017), the information on international patent filing with the US Patent and Trademark Office (USPTO) and the European Patent Office (EPO) is collected from EPO's PATSTAT database. We conduct an extensive manual search to ensure that the name

[22] This data source has been used by a number of studies, including Lilienfeld-Toal et al. (2012), Vig (2013), Gopalan et al. (2016) and Koirala et al. (2018).
[23] We thank Christian Helmers, Manasa Patnam and Raghavendra Rau for kindly sharing with us their patent data. Their data cover years between 1995 and 2009. We use their data from 2005-2009 and collect additional patent data.
[24] http://ipindiaservices.gov.in/publicsearch.
[25] We use "Inventor Country" as "INDIA".

of the firm from the search system matches the name of the company in the Prowess database. Appendix A provides a definition of all the variables used in this study, as discussed below.

3.2. Variable construction

3.2.1. Board monitoring variables

We define *Board size* as the log value of the number of board members. *Board independence* is defined as the ratio of the number of IDs to the board size.[26] Next, we also identify the characteristics of board members. *Board busyness* is defined as the log of the number of directors who also serve on the board of another firm (Col and Sen, 2018). We also consider the alternative definitions of *Board busyness* following Core et al. (1999) and Fich and Shivdasani (2006). Core et al. (1999) define boards as busy if the majority of members hold three, or more than three, board appointments in another firm. Fich and Shivdasani (2006) define boards as an externally busy board if the majority of IDs serve on three or more other corporate boards. Following Col and Sen (2018), we define *Board diligence* as the mean value, across all board members, of the ratio of meetings attended to the total meetings held in a year. Similarly, *Network size* is defined as the number of other firms with whom the given firm shares common directors, following Helmers et al. (2017). *CEO power* is a binary variable that takes the value of 1 if the CEO is powerful and 0 otherwise. A powerful CEO is defined as one who is the chairman, promoter and only executive member of the board (Adams et al., 2005; Cheng, 2008). We use an *Alternate CEO power*, defined as the one who is both the chairman of the board and the promoter of the firm. Finally, *CEO pay* is the log of total compensation (sitting fees, salaries, contributions to provident fund, pension fund, bonus and commission, perquisites, and retirement benefits). We use *CEO variable pay* as an alternative definition for

[26] The Prowess database provides details of the classification of each board member. Such classification is disclosed in the annual reports of the company. If not, Prowess follows Clause 49 of the Securities Exchange Board of India (SEBI) guidelines to classify the directors (Col and Sen, 2018).

CEO pay. *CEO variable pay* is defined as the ratio of CEO variable pay, total compensation except for salaries, to total compensation (Banerjee and Homroy, 2018).

3.2.2. Control variables

Following the literature, we also include a set of control variables which could potentially be correlated with board monitoring. First, we control for factors that account for a firm's monitoring costs (Boone et al., 2007; Guest, 2008; Linck et al., 2008). The costs of monitoring increase with the specific monitoring requirements of firms. We use *Tobin's Q*, research and development expenses (*R&D*) and stock return variance (*STDDEV*) to proxy the firm's monitoring costs. *Tobin's Q* is defined as the ratio of the sum of the book value of debt, book value of preferred stock and market value of the stock to the book value of assets (Dharmapala and Khanna, 2012).[27] *Tobin's Q* reflects past performance, including growth prospects of the firm. *R&D* is defined as the total R&D expenses scaled by the total sales. We replace missing R&D expenses with 0. *STDDEV* is the one-month standard deviation of daily stock return. We expect *Tobin's Q, R&D* and *STDDEV* to have a negative effect on board size, board independence, board busyness, network size, CEO power and pay, but a positive effect on board diligence.

Second, we control for factors that account for firm's complexity and scope of operation (Baker and Gompers, 2003; Boone et al., 2007; Guest, 2008; Linck et al., 2008). We proxy firm's complexity and scope of operation using *Firm size*, *Leverage* and *Firm age*. We use *Firm size* as the log of total assets, *Leverage* as the ratio of total debt to the shareholders' equity capital, and *Firm age* as the log of difference between the incorporation year and fiscal year. We expect *Firm size*, *Leverage* and *Firm age* to negatively affect board monitoring as larger

[27] The book value of debt and book value of preferred stock is proxied using the Prowess variable "debt". The market value of stock is calculated as the 365-day average of the daily stock price multiplied by the number of shares outstanding at the end of each fiscal year.

and complex firms are plagued with agency problems (Boone et al., 2007).[28] Finally, we also include return on assets (*ROA*), defined as the net income divided by total assets, to control for the impact of firm's profitability on the board monitoring (Cheng, 2008; Banerjee and Homroy, 2018).

3.2.3. Firm performance and innovation variables

To study the implications of the link between FIIs' ownership and board monitoring, we identify a number of variables that are used as a proxy of firm performance and innovation activities (Dharmapala and Khanna, 2012; Bena et al., 2017; Helmers et al., 2017; Banerjee and Homroy, 2018). Among the measures of valuation and as defined in the preceding sub-section (3.2.1), we use return on assets (*ROA*) and *Tobin's Q*. We further incorporate earnings per share *(EPS)* as the ratio of net profit or (loss), after the deductions of preference dividend, to the weighted average number of equity shares outstanding during the period (scaled by average closing price). We also use profit before depreciation, interest, taxation and amortization scaled by total assets (*PBDITA*) and *Assets turnover ratio*, as the ratio of total sales to total assets.

We apply two proxies of innovation activities. These include *R&D* (scaled by total sales) and *Patent count*. Patents are the most widely used proxy of a firm's innovation activities as they are the measurable output from the process of innovation. We use *Patent count* as the proxy for innovation measured as the number of patent applications filed[29] by a firm in a given fiscal year.

[28] Leverage also proxies for change in a firm's capital structure and default risk.

[29] Similar to Helmers et al. (2017), we are only interested in application date patent filing, independently of whether it was eventually granted or not. Griliches et al. (1987) suggest the patent application year rather than the grant year better captures the actual time of innovation.

3.2.4. Summary figures

Table 1 presents the firm-year descriptive statistics of the main variables, along with firm performance, innovation and other financial variables. All the potentially unbounded variables are winsorized at the 1% extreme. The monetary variables are denoted in million rupees (INR Million). The average board is comprised of around 9.3 members, which is similar to the 9.9 members reported by Banerjee and Homroy (2018). Given the enforcement of a mandatory reform in the year 2000, named Clause 49, we expect the average board independence to be close to 50%.[30] Banerjee and Homroy (2018) report an average board independence of around 51%, and we find an average board independence of around 47%. The summary figures further show that around 5.25 board members (almost 57% of the mean board size) serve on the board of another firm. On average, a board is connected to 25 other firms, as suggested by the mean *Network size*. The *CEO power* is relatively high at 0.16 in India, compared to 0.09 reported by Cheng (2008) for the US, and the mean CEO pay is around INR 6.67 million, which is higher than the INR 4.63 million reported by Banerjee and Homroy (2018).

[Insert Table 1 about here]

The average *ROA* of firms in our sample is 3.57%, *Tobin's Q* is approximately 1, and *EPS* is 8.1 *ROA* in our sample is similar to that of Srinivasan and Thampy (2017), and the values of *Tobin's Q* and *EPS* are similar to Dharmapala and Khanna (2012), Helmers et al. (2017), and Banerjee and Homroy (2018). In terms of innovation measures, the average *Patent count* is around 0.07 which is considerably smaller than the average *Patent count* of 0.38 reported by (Helmers et al., 2017).[31] The firms in our sample have a mean asset size of INR 4,159 million, sales revenue of INR 4,721 million, average age of 33 years and leverage of

[30] Clause 49 of SEBI requires all the firms to have at least one-third of the members of board to be independent if the Chairman is a non-executive director and have at least half of the members to be independent if the Chairman is an executive director.

[31] The variation is largely due to the difference in sample firms as well as the sample period.

125% (overall our descriptive results are similar to other Indian studies, see Vig, 2013; Helmers et al., 2017; Banerjee and Homroy, 2018; Col and Sen, 2018).

3.3. Exogenous shock and identification strategy

We use the 2007-2008 financial crisis as an exogenous shock as it provides an unexpected time-series variation in FIIs' ownership. Although the financial crisis begins towards the end of 2007 in developed markets, Dooley and Hutchinson (2009) show that the effect of the crisis is only observed in emerging markets towards the end of 2008. As such, we assign the onset of the crisis period from 2009. Further, the period of decline is short-lived, around four years on average, as the capital flows bounces back and rises to levels only moderately below those observed before the crisis (Milesi-Ferretti et al., 2011). Therefore, we focus our empirical analysis on four years before (2005-2008) and four years after (2009-2012) the onset of the crisis.

Figure 1 shows the average FIIs' ownership before and after the financial crisis for the entire sample. Figure 1 also shows that FIIs' ownership declines sharply after the crisis period from around 8.20% in 2008 to 7.11% in 2009 (a decline of around 1.09% points or 13.3%). This provides us with a negative shock to test the implications of this decline on the different characteristics of board monitoring/effectiveness.

[Insert Figure 1 about here]

Although the shock is exogenous, we still need two groups of firms that should be highly comparable. We construct the treatment and control group firms following Patnaik and Shah (2013) who find significant differences between FIIs' and DIIs' firm preferences along certain dimensions of firm characteristics in the Indian market. For instance, they find that FIIs favor younger, larger, lower risk, higher beta, more R&D intensive firms that have smaller inside ownership, unlike DIIs who favor older, smaller, less liquid, and less R&D intensive

firms. Motivated by this uniqueness in the firm picking preferences of FIIs and DIIs, we construct our treatment and control groups in the following manner.

First, we calculate the mean ownership by FIIs and DIIs for each firm before 2008 (starting in 2002).[32] Then, we identify "High FIIs" firms as those in which FIIs' ownership is above the firm-year median FIIs' ownership and "High DIIs" firms as the one in which DIIs' ownership is above the median DIIs' ownership. Next, we drop firms who are categorized as both "High FIIs" and "High DIIs".[33] The remaining "High FIIs" firms only are categorized as *treatment* firms and "High DIIs" firms as *control* firms. The treatment firms are essentially a set of firms that are chosen exclusively by FIIs for investment but shunned by DIIs and the control firms are chosen exclusively by DIIs but avoided by FIIs. We also identify alternate control firms as "None", where neither has "High FIIs" nor "High DIIs", i.e. neither FIIs nor DIIs have high ownership.

Table 2 shows our sample selection. Out of 4,842 firms in the universe, we identify 2,932 firms as "High FIIs firms" and 2,102 firms as "High DIIs firms". We also identify 1,469 firms in the "None" category. After dropping firms with "High FIIs" and "High DIIs", we are left with 689 firms with high FIIs' ownership and low DIIs' ownership, and 823 firms with high DIIs' ownership and low FIIs' ownership.

[Insert Table 2 about here]

To eliminate the concern that the differential impact of FIIs on board monitoring may be due to the differential firm preferences, we perform propensity score matching (PSM) to identify a matched set of treatment and control firms. To do so, we first estimate the probit model in which the dependent variable is equal to one if the firms belong to the treatment group and zero otherwise. We use various firm-level characteristics, such as Tobin's Q, Firm Size,

[32] Prowess provides ownership data with its classification starting in 2002.
[33] Since our distinction is based on the FIIs' and DIIs' ownership level, we need to drop these firms as the effect of the FIIs on board monitoring will not be cleanly identified in the firms where we observe the presence of both high FIIs' and high DIIs' ownership.

Firm Age, ROA and Leverage (Col and Sen, 2018). In keeping with the literature, we expect that firms with higher FIIs' ownership have higher values, are larger in size, are younger in age, have a higher ROA and have low leverage (Douma et al., 2006; Ferreira and Matos, 2008; Patnaik and Shah, 2013). These variables are included to help satisfy the parallel trend assumptions as there should not be any firm-specific differences in characteristics between the treatment and the control group prior to the crisis that attracts FIIs. Model 1 of Table 4 (Panel A) presents the probit model estimates with industry fixed effects and standard error clustered at the industry level. The specification shows some of the independent variables are statistically significant, suggesting significant variation in firms' characteristics between the treatment and the control group. We then use the propensity scores from model 1 to perform nearest-neighbor PSM within a 0.01 caliper and end up with 390 unique pairs of matched firms.

[Insert Table 3 about here]

We conduct a few diagnostic tests to verify our matching process. First, we rerun the probit model with the matched sample of firms and find that none of the independent variables is statistically significant (as shown in model 2 of Table 3 Panel A). This suggests that there is no observable difference in firm characteristics between the treatment and the control group. Second, we examine the difference between the propensity scores of the treated group firms and those of the matched control group firms. Panel B of Table 3 shows a very small difference in the propensity scores. Finally, we report the univariate comparisons of firms' characteristics between the treatment and control group and their corresponding *t*-statistics in Panel C of Table 3. As shown, none of the mean differences in the firms' characteristics between the treatment group firms and the control group firms is significant. Overall, the diagnostic tests show that our approach of using the PSM process removes meaningful observable differences between firms with high FIIs' ownership and firms with high DIIs' ownership.

To examine the parallel trend, we follow Bertrand and Mullainathan (2003) and

examine how the board monitoring changes over time. Specifically, we run following regression equation:

$$y_{ijt} = \beta_1 Treated_i \times Year_{05-06} + \beta_2 Treated_i \times Year_{07} + \beta_3 Treated_i \times Year_{08} + \beta_4 Treated_i \times Year_{09} + \beta_5 Treated_i \times Year_{10} + \beta_6 Treated_i \times Year_{11-12} + \gamma_t + \alpha_i + \varepsilon_{ijt} \quad (1)$$

where i indexes firms, t indexes time, j indexes industries; y_{ijt} is the dependent variable of interest, which is the different proxies of board monitoring; γ_t and α_i are year and firm fixed effects respectively. $Treated_i$ is the dummy variable that takes the value of one if the firm is classified as a treated firm and zero if firms are classified as control firms. $Year_{05-06}$, $Year_{07}$, $Year_{08}$, $Year_{09}$, $Year_{10}$, and $Year_{11-12}$ indicate firm-year observations. For example, $Year_{05-06}$ is a dummy variable that takes value of 1 if a firm-year observation is from year 2005 or 2006. The coefficient estimates on β_1, β_2, and β_3 are all insignificant. In contrast, the coefficient of β_4, β_5 and β_6 are all significant at either 1 percent or at 5% level. The difference in the significance of the before and after dummies show that there is an existence of parallel trend in the board monitoring between the treatment and control group prior to the crisis period. Further, it also highlights that the results are not driven by the reverse causality and the change in board monitoring is casually affected by the change in level of FIIs' ownership due to the crisis.

We also plot the average FIIs' ownership for the treatment and the control groups in Figure 2.[34] The average FIIs' ownership increases in both the treatment and the control group prior to the crisis. However, the FIIs' ownership declines sharply from around 9.52% in 2008 to 6.81% in 2009 (a decline of 2.71% points) and decreases further to 5.89% in 2012 for the firms in the treatment group. In contrast, the average FIIs' ownership for the control group

[34] By definition, the treatment group comprises firms with high FIIs' ownership but low DIIs' ownership, and the average FIIs' ownership is higher for the treatment group compared to the control group. Our objective here is to examine the trend in FIIs' ownership, rather than the level of FIIs' ownership.

remains relatively similar at 1.86% in 2008 to 1.91% in 2009 and increases to 2.75% in 2012. The fundamental highlight from this figure is that compared to the virtual parallel trend observed between treatment and control groups before the end of 2009, the treated group firms' FIIs' ownership significantly declines compared to that of control group firms. In the following sections, we strive to determine the effect of this unexpected and non-parallel change on various board level characteristics.

[Insert Figure 2 about here]

3.4. Pre and post-crisis summary figures

We conduct a univariate analysis comparing the firm-year summary statistics of the board and other firm-level characteristics before and after the crisis of 2008. The results of mean and median for the pre- (2005-2008) and the post-crisis (2009-2012) period are shown in panels A and B of Table 4 respectively. Table 4 shows that compared to pre-crisis, firms in the post-crisis period are larger in their board size and exhibit greater board independence. Board busyness also increases significantly following the crisis based on all definitions. However, relative to the pre-crisis period, board diligence seems to be worse and firms have a greater network connection in the post-crisis period. In summary, the general view from these results signals that the quality of board monitoring, except for board independence, seems to have fallen significantly in the post-crisis period compared to pre-crisis.

The performance of the firms after the crisis in terms of *ROA*, *Tobin's Q*, *EPS*, *PBDITA* and *Asset turnover ratio* declines significantly, which is expected. However, the size of the firms in terms of assets and sales revenue increases significantly following the crisis. Variables related to firm innovation, i.e. average *Patent count* and *R&D* reduce significantly following the crisis period, again consistent with what we may expect after a financial shock.

[Insert Table 4 about here]

4. Empirical analysis

We begin our empirical investigation with a baseline difference-in-differences (DiD) regression followed by propensity score matched DiD regression. We also perform robustness tests on our main results followed by the examination of the implications of board monitoring by FIIs.

4.1. Univariate difference-in-differences results

In Panel A of Table 5, we first present the summary figures for the changes in FIIs' ownership. Columns (2) and (3) report the average change in FIIs' ownership after and before the crisis period, (i.e. after – before) for the treatment firms and control firms respectively. Column (4) reports the mean DiD estimation, which is the difference in FIIs' ownership between the treatment firms and control firms after and before the crisis period. Corresponding *t*-statistics testing the null hypothesis that the DiD estimators are zero are presented in parentheses. The FIIs' ownership for the treatment group decreases significantly after the crisis, whereas, the FIIs' ownership for the control group increases, but not significantly, after the crisis. The magnitude of the DiD estimator suggests that, on average, the exogenous shock due to crisis leads to significant decrease in FIIs' ownership of about 3.53% in the four-year period after the crisis relative to the four-year period before the crisis for the treatment firms than for the control firms.

The results in the Panel B of Table 5 show a significant increase in the board size of treated firms (firms with high FIIs' ownership) in the post-crisis period compared to the control firms, which is not statistically significant. Importantly, the mean DiD estimation is statistically significant. Since the increase in board size is associated with a decline in FIIs' ownership in the post-crisis period, the result suggests that a decline in FIIs could have triggered larger boards in the post-crisis period compared to smaller boards in the pre-crisis period.

We find the average value of the board independence of the treated firms increases

significantly in the post-crisis period compared to the control firms. This indicates that FIIs' decline in ownership is associated with an increase in the regulatory defined, higher board independence. This could indicate that board independence is not as significant to FIIs as may have been expected. We interpret this result cautiously as there is credible evidence to suggest that incumbent managers in emerging markets can appoint directors who are independent according to regulatory definitions but nonetheless can still be overly sympathetic to management (Romano, 2005; Cohen et al., 2012). This implies that the less pressure from FIIs in the post-crisis period could have motivated managers to increase the so-called regulatory defined IDs, but they may not be very effective in monitoring, rather sympathetic to the managerial decisions.

The mean DiD estimate for board busyness is significantly positive, indicating higher FIIs' ownership is associated with lower board busyness in the pre-crisis period, i.e. higher presence of FIIs seems to lessen board busyness, thereby potentially improving its effectiveness. The DiD for board diligence is significantly negative, indicating a significant decline in board diligence following the reduction in FIIs' ownership during the post-crisis period. This suggests that higher FIIs' ownership implies higher board diligence. The network size is higher for the treated firms, compared to the control firms, in the post-crisis period when FIIs' ownership falls. This supports the conjecture that a higher level of FIIs' ownership appears to lower the network size of the board to render it more effective. Similarly, the power and pay of the CEO increase significantly for the treated firms compared to our control firms. This suggests that the CEO's influence significantly increases with the decline of FIIs' ownership, potentially driven by lower pressure from influential outside investors such as FIIs.

Taken together, these DiD univariate results provide an initial indication that firms with high FIIs' ownership have better board monitoring compared to firms with high DIIs' ownership.

4.2. Effect of FIIs' ownership on board monitoring: propensity score matched DiD result

In the multivariate regression framework, we control for several variables that are understood to affect the various board monitoring measures. Specifically, we investigate the following regression model:

$$y_{ijt} = \beta\, Treated_i \times Crisis_t + X_{ijt} + \gamma_t + \alpha_i + \varepsilon_{ijt} \qquad (2)$$

where $Crisis_t$ is also a dummy variable that takes the value of one in the post-crisis years (2009 to 2012) and zero for pre-crisis years (2005 to 2008); X_{ijt} are control variables as defined and discussed in subsection 3.2.2 and γ_t and α_i are year and firm fixed effects respectively. ε_{ijt} is the error term. Standard errors are clustered at the firm level. The main variable of interest is β that captures the DiD effect.

A couple of points are worth noting before discussing the results of equation (2) reported in Table 6. First, the coefficient of β reflects the marginal effect of a decline in FIIs' ownership on the board monitoring variables of the treated firms compared to control firms during the post-crisis period. As the financial crisis is a negative shock that results in a decline in FIIs, we need to interpret the β coefficient inversely. For example, the positive coefficient of β on board size (as dependent variable) would suggest a higher board size for the treated firms, compared to control firms, after the shock when there is significant fall in FIIs' ownership. This signifies a negative link between FIIs' ownership and board size, suggesting that the higher FIIs' ownership (prior to the crisis) is associated with lower board size.

Second, motivated by the technically credible explanation offered by the existing literature (Puri et al., 2011; Guo and Masulis, 2015), we chose the linear probability model, as opposed to the non-linear (logit or probit) model, despite the binary nature of one of our dependent variables (*CEO power*) and other alternative dummy variables, for two reasons. First, non-linear models suffer from incidental parameter problems: i.e. fixed effects cannot be

easily included in logit or probit model with large but narrow panels, which results in an inconsistent coefficient estimate of the DiD coefficient and the control variables. Second, as our main interest is the analysis of marginal effect, assessing the statistical significance of the marginal effect is less straightforward when the main variable of interest is in the interaction term. On the other hand, linear models provide consistent marginal estimates of our main explanatory variables and therefore provide an economically meaningful effect of the link between decline in FIIs' ownership due to the financial crisis and the board monitoring variables. Although our model choice is consistent with Puri et al. (2011) and Guo and Masulis (2015), we nevertheless, also estimate the results using the probit model and calculate the size and statistical significance of the marginal effect using the delta method. We find the probit estimates are of similar size to our linear probability model (the results are presented in Appendix B).

[Insert Table 6 about here]

In model (1) of Table 6, we report the results for the board size. The DiD estimator, β, is positive and statistically significant, suggesting that, compared to control firms, treatment firms increased the board size in the post-crisis period when the FIIs' ownership declined meaningfully. Our finding is consistent with the sub-hypothesis 1a and the theoretical intuition offered by Raheja (2005) and Harris and Raviv (2008) who suggest smaller boards to be more effective in executing their monitoring duties.

Next, in model (2), we include board independence as our main dependent variable. The DiD estimator is positive and statistically significant, providing support for sub-hypothesis 2b, suggesting that FIIs in emerging markets do not find IDs to be improving board monitoring. As noted earlier, this result may suggest that FIIs hold the view that corporate managers in emerging markets could possibly appoint directors who may appear independent from a

regulatory definitions point of view but may still be highly sympathetic to management (Romano, 2005; Cohen et al., 2012).

In model (3), the DiD coefficient of board busyness is positive and statistically significant, signifying FIIs' preference for reducing board busyness to improve the monitoring role of the board. This finding is consistent with our sub-hypothesis 3a and is in line with Falato et al. (2014) who find that busyness of boards has an adverse effect on the effectiveness of board monitoring (Core et al., 1999; Shivdasani and Yermack, 1999).

The DiD estimation of board diligence, as reported in model (4), is negative and significant, offering credible backing to sub-hypothesis 4. This suggests that the treatment firms seem to have improved board diligence compared to the control firms in the years before the crisis period when FIIs' ownership is higher compared to the post-crisis period. Our result is consistent with the theoretical implications of Hermalin (2005) and Kolev et al. (2017) who propose that better board diligence improves board monitoring.

With respect to network size, as presented in model (5), the significant and positive DiD coefficient endorses sub-hypothesis 5a. This signals that when contrasted with control firms, the network size of treated firms increased in the post-crisis period, which further signifies that FIIs tend to pressurize boards to reduce their network size with the aim of improving the effectiveness of their monitoring role. This result is consistent with the predictions of Fich and White (2003), Fich and Shivdasani (2006) and Bizjak et al. (2009) who argue that boards with a smaller network size can perform better monitoring roles and reduce agency problems.

Similarly, we also examine the power of the CEO in model (6). The DiD estimation is positive and statistically significant, lending support for sub-hypothesis 6. The result suggests that compared to the control firms, the treatment firms have powerful CEOs in the post-crisis period. This finding lends support to the agency theory, which argues that increased CEO

power negatively affects the board monitoring of firms as they have access to useful firm resources and are inclined towards fulfilling their own managerial objectives (Bebchuk and Fried, 2003; Ryan and Wiggins, 2004; Combs et al., 2007; Onali et al., 2016). Finally, the β coefficient of CEO pay in model (7) is also positive and statistically consistent with the prediction of sub-hypothesis 7a. The finding suggests that the treatment firms experience a significant increase in the pay of CEOs in the post-crisis period compared to the control firms. The evidence is in line with the literature that finds (excessive) CEO compensation exacerbates the agency problems rather than aligning the financial interests (Core et al., 1999; Bertrand and Mullainathan, 2001; Dah and Frye, 2017).

Taken together, the above results provide strong evidence of a causal link between FIIs and effective board monitoring. Though we find that FIIs condense board size, they also seem to reduce board independence in India. This indicates that FIIs do not have confidence in the true independence of IDs, casting doubt on the ability of the IDs to effectively monitor the board. As a substitute, we find that FIIs improve board monitoring through more direct channels, such as by improving board diligence and reducing board busyness, network size, power and pay of CEOs.

4.3. Robustness tests

To test the robustness of our baseline results, we conduct several additional tests. We use shock-based estimations, employ alternative definitions of board monitoring, followed by alternative identification strategy, and finally, conduct a series of false experiments.

4.3.1. FIIs' ownership level, instrumental variable approach and board monitoring

Our identification strategy relies on the assumption that the post-crisis period and its interaction with the treated firms capture the significant and exogenous shift in the ownership level of FIIs.

However, this interaction term may be capturing other events, such as global risk aversion and not the exogeneity of changes in FIIs' ownership. To capture the specific effect of FIIs' ownership, we estimate the following regression equation:

$$y_{ijt} = \beta_1 Treated_i \times Crisis_t \times FII_{it-1} + \beta_2 Treated_i \times Crisis_t + \beta_3 Treated_i \times FII_{it-1} + \beta_4 Crisis_t \times FII_{it-1} + \beta_5 FII_{it-1} + X_{ijt} + \gamma_t + \alpha_i + \varepsilon_{ijt} \quad (3)$$

In equation (3), FII_{it-1} is the level of FIIs' ownership in firm *i* in the last fiscal year. Here, we have now interacted the DiD variable with actual FIIs' time-varying ownership variable. Now, the $Treated_i \times Crisis_t \times FII_{it-1}$ term not only captures the DiD effect but the actual exogenous change in FIIs' ownership driven by the crisis. All other variables are as previously defined. Firm and time fixed effects are included in the regression and standards are corrected for clustering at the firm level.

The results are presented in Panel A of Table 7. We find evidence consistent with our main results reported in Table 6. The level of FIIs' ownership is negatively and significantly related to the board size, board busyness, network size, CEO power and CEO pay, and positively related to board diligence. However, we do not find any significant impact on board independence, which is not surprising given our main result suggesting FIIs' lack of confidence in the ability of IDs to perform a monitoring function in emerging markets.

[Insert Table 7 about here]

The use of crisis as an exogenous shock and level of FIIs' ownership for the identification of treatment and control groups could be a problem, as the change in FIIs' ownership could be related to other external factors, such as change in firms' performance or lower market performance, that may not be captured by our existing control variables. To further mitigate the reverse causality or potential omitted variable biases, we perform an instrumental variable (IV) analysis. In this approach, first, we identify an IV that is correlated

with the FIIs' ownership but not correlated with the error term in the regression. Following Desender et al. (2016), we generate an instrument by calculating the average of FIIs' ownership (except the focal firm) within the same industry and in similar size.[35] We argue that the FIIs' ownership within the same industry and similar size is likely to influence a firms' FIIs' ownership, but is unlikely to affect board level monitoring. To conduct the two-stage least squares (2SLS) regression, we replace FII_{it-1} in Equation (2) with instrumented FIIs' predicted value from the first stage regression.

The results are presented in Panel B of Table 7.[36] The coefficient estimates on the interaction term among the treatment/control group, crisis and the instrumented FIIs' ownership' and the board monitoring variables, are consistent with the results reported in our main Table 6. Thus, our findings that a high level of FIIs' ownership is associated with improved board monitoring appears to be robust after addressing concerns of endogeneity and other econometric concerns.

4.3.2. Alternative proxies of board monitoring

In this section, we use alternative definitions of board monitoring. First, we use the level of board size and board independence as opposed to board size (log) and board independence (ratio). Ferreira et al. (2018) argue that level, rather than the ratio of independence (or size), is more informative. More importantly, the ratios and the percentage do not show what happens to the number of board members and independent members when there is a high level of FIIs' ownership prior to the crisis. Second, we use two alternative definitions of board busyness based on Core et al. (1999) and Fich and Shivdasani (2006) definition.[37] Third, we use an

[35] We use the two-digit National Industry Classification code of India and four quartiles of firm size based on total assets. Since we exclude the focal firm in the calculation, the instrument varies across firm and time.
[36] For brevity, we do not report the first-stage regression results. In the first-stage, we find the instrumental FIIs' ownership is positively and significantly related to the focal firms' FIIs' ownership.
[37] Refer to Appendix A for the definition.

alternative definition of CEO power, namely *Alternative CEO Power,* which is a dummy variable that takes the value of one if the CEO is chairman as well as the promoter and zero otherwise. Again, the results based on the probit model are presented in Appendix B. Finally, as an alternative definition for our CEO pay, we use a fraction of variable pay/total pay as the dependent variable (Banerjee and Homroy, 2018). The results using all these alternative measures of board monitoring are presented in Table 8. Consistent with the results reported in Table 6, we find that, on average, firms in the treatment group have 0.50 higher board members in the post-crisis period compared to the control group. Also, on average, compared to the firms in the control group, firms in the treatment group have 0.39 more IDs in the post-crisis era. The direction of the DiD coefficient for the alternative definition of board busyness, alternative CEO power and CEO variable pay is consistent with our main findings in Table 6.

[Insert Table 8 about here]

4.3.3. Alternative identification and false experiments

The causal interpretation of an exogenous shock depends on the valid identification of the control group relative to those firms that are highly affected by the crisis. In our main analysis, the control group consists of firms with high DIIs' ownership but low FIIs' ownership. We rerun our main analysis with firms in the "None" category as control firms.[38] As discussed in Section 3.3, the "None" group consists of firms that are shunned by both FIIs and DIIs, i.e. these firms have lower FIIs' and DIIs' ownership. Like our main identification strategy, we follow the same PSM procedure and identify 538 matched pairs of treatment and control firms. We rerun Equation (2) by replacing $Treated_i$ with $Alt\_Treated_i$, as shown in the following regression equation:

[38] This approach follows Patnaik and Shah (2013) who use "None" as their main control firms.

$$y_{ijt} = \beta\ Alt\_Treated_i \times Crisis_t + X_{ijt} + \gamma_t + \alpha_i + \varepsilon_{ijt} \quad (4)$$

$Alt\_Treated_i$ is the dummy variable that takes the value of one for the firms in the "High FIIs" category and zero for the firms in the "None" category. All other variables are identical, as previously defined. For brevity, we do not report the outcomes of the control variables. As seen from the results reported in Table 9, except for board independence, the findings are consistent with our main results, as reported in Tables 6 and 7. Again, the insignificance of board independence suggests that FIIs are indifferent about board independence in India.

[Insert Table 9 about here]

An additional concern with our DiD estimates is that the changes we observe in board monitoring measures and FIIs could simply be capturing the continuation of a pre-existing regular trend, repeating itself on a regular basis. This concern is partly mitigated by the non-parallel trends observed in Figure 2 and by the inclusion of year fixed effects. Nonetheless, to further address this concern, we supplement the analysis by running a series of false experiments to hone in on the effect of the unexpected crisis-driven decline in FIIs' ownership. The basic idea is that the underlying DiD effect (as shown in Table 6) should not be detected in periods other than the exogenous crisis event. Specifically, we run the following regression specification:

$$y_{ijt} = \beta\ Treated_i \times False\ Crisis_t + X_{ijt} + \gamma_t + \alpha_i + \varepsilon_{ijt} \quad (5)$$

$False\ Crisis_t$ is the dummy variable that takes the value of zero for four years pre-false crisis year (*t*) and one for four years post-false crisis year respectively for each value of *t* (2005, 2006, 2012, and 2013). All other variables are as defined previously. We present only the DiD estimates, i.e. β in Table 10. Most of the DiD estimates for the false experiments are not

significant. The sign of the board diligence is reversed in the false experiments and the statistical significance of CEO power is relatively low compared to our main results. Overall, the results from the false experiments provide some assurance that our main results in Table 6 are attributable to the change in FIIs' ownership as a result of the financial crisis, rather than to some other confounding event or pre-existing trend factors.

[Insert Table 10 about here]

4.4. FIIs' board monitoring role and firm performance

Our results so far are suggestive of FIIs in India improving board monitoring. Since the principal objective of the board is to improve the performance of the firm through its monitoring and advising functions, it follows that the FIIs' improvement of board monitoring should have an impact on firm performance. However, it remains an empirical issue whether or not firms benefit from improved monitoring by FIIs. To assess the improvement in board monitoring we study the effect on two dimensions of firm performance: firm value and innovation.

4.4.1. Firm value

In this subsection, we examine how improvement in board monitoring demanded by FIIs influences firm value. If FIIs facilitate better board monitoring, to the extent that this improved monitoring translates into better firm value, we should expect that the value of firms with higher FIIs' ownership in the post-crisis period should be higher than the control group firms. Accordingly, we run the following general regression specification:

$$Value_{ijt} = \beta_1\, Treated_i \times Crisis_t \times\ y_{ijt} + \beta_2\ Treated_i \times Crisis_t + \beta_3\ Treated_i \times\ y_{ijt} +\ \beta_4\, Crisis_t \times\ y_{ijt} +\ X_{ijt} + \gamma_t + \alpha_i + \varepsilon_{ijt} \quad (6)$$

where i indexes firms, t indexes time, j indexes industries. $Value_{ijt}$ is the continuous variable that captures different features of firm value and is in the form of *Tobin's Q, ROA, EPS, PBDITA,* and *Asset turnover ratio*. y_{ijt} represents the board monitoring variables, as defined in earlier sections (also see Appendix A). X_{ijt} is a vector of control variables discussed in the following paragraph. All the firm-value and board monitoring-related variables, along with γ_t and α_j, are defined earlier in section 3.2. Our main interest lies in β_1, a difference-in-difference-in-differences (DiDiD) estimator that captures the post crisis effect of FIIs' relationship with board monitoring on firm value for treatment firms compared to control firms prior to the crisis period.

We include various competing factors (X_{ijt}) that might affect the firm value. Prior studies find firm size, age, leverage, research and development expenses, capital expenses, sales and export sales to be associated with firm value (Cheng, 2008; Coles et al., 2008; Brick and Chidambaran, 2010; Liu et al., 2015). As such, we use log of firm's total assets to control (*Firm size*), log of age of the firm (*Firm age*), the *Leverage* measured as total debt to shareholders' equity, research and development expenses scaled by total assets (*R&D*), capital expenditure scaled by total assets (*Capital expenses*), log of sales revenue (*Sales*) and export sales revenue scaled by sales revenue (*Export Sales*). For brevity we do not report the results for control variables; however, the results on controls are consistent with prior literature. The results of different specifications of Equation (6) are presented in Table 11.

[Insert Table 11 about here]

Panel A, where *Tobin's Q* is the dependent variable, shows that the variables board size, board busyness, CEO power, and CEO pay have the expected negative and statistically significant coefficients, whereas board diligence carries a positive and statistically significant

coefficient. Interestingly, we do not find any effect of board independence on *Tobin's Q*. In Table 6 we find firms with higher FIIs' ownership exhibit lower board independence, which suggests that the non-significant impact of board independence on firm value is thus not surprising. In Panel B, we use *ROA* as the proxy of firm value and the results are qualitatively similar to Panel A. Further, the results are also qualitatively comparable to Panel A when we use *EPS*, *PBDITA*, and *Asset turnover ratio* as the dependent variable in Panels C, D and E respectively.[39] Overall, these results suggest that improvement in board monitoring increases the firm value of treatment firms compared to control firms.[40]

4.4.2. Innovation

In this subsection, we examine the impact of improved board monitoring by FIIs on the innovation activity of firms. Empirical evidence is mixed with regard to the impact of monitoring on innovation. Luoung et al. (2017) suggest that FIIs promote firm innovation by being active monitors.[41] However, Faleye et al. (2011) argue that intense board monitoring can dampen corporate innovation. Hence, the effect of improved board monitoring by FIIs remains an empirical issue. We examine the effect of improved board monitoring, demanded by FIIs' pressure, on the innovation activities as measured using two different proxies: *Patent count* and *R&D*. We run different versions of the following regression specification:

$$Innv_{ijt} = \beta_1\, Treated_i \times Crisis_t \times\ y_{ijt} + \beta_2\ Treated_i \times Crisis_t + \beta_3\ Treated_i \times\ y_{ijt} + \beta_4\, Crisis_t \times\ y_{ijt} + X_{ijt} + \gamma_t + \alpha_j + \varepsilon_{ijt} \quad (7)$$

where i indexes firms, t indexes time, j indexes industries. $Innv_{ijt}$ is the continuous variable reflecting firm innovation: *Patent count*, and *R&D*. All other variables are as defined

[39] It is important to note that although the sign of board independence varies, board independence does not significantly affect any firm value measures.
[40] The results are qualitatively similar using the alternative identification strategy discussed in Section 4.2.2. Results are available upon request.
[41] Although they focus on independent (long-term) FIIs as active monitors that improve innovation, we focus on the effect of FIIs on board monitoring that improves innovation.

previously (also see Appendix A). X_{ijt} is a vector of control variables discussed in the following paragraph. Our main variable of interest is β_1, a DiDiD estimator that captures the effect of improved board monitoring on the innovation activities of treatment firms compared to control firms after the financial crisis period.

We also control for a set of firm-level variables that can affect a firm's innovation output. Based on the literature, we control for firm value using *Tobin's Q*, *Firm size* using log of total assets, *Sales* using sales revenue scaled by total assets, *Export sales* as export revenue scaled by total sales revenue, *Firm age* using log of firm age, *Leverage* as total debt to shareholders' equity, and *ROA* as net income divided by total assets (Helmers et al., 2017; Luoung et al., 2017; Lu and Wang, 2018). For brevity we do not report the results for the control variables; however, the results on controls are consistent with those reported in the empirical literature. The results of different specifications of Equation (6) are presented in Table 12.

[Insert Table 12 about here]

In Panel A, the main dependent variable is *Patent count*. Again, we find a negative and statistically significant impact of board size, board busyness, network size, CEO power, and CEO pay. We find a positive and statistically significant impact of board diligence on the total patent count. The results are qualitatively similar when we use *R&D* as the main dependent variable in Panel B. Overall, the results provide evidence to support the conjecture that improved board monitoring by FIIs has a positive and significant impact on a firm's innovation activities.

5. Conclusion

One of the key trends in the global financial market during the financial crisis of 2007-08 was the "flight of capital" from emerging markets to the developed economies. India, one of the

largest emerging economies, also witnessed a substantial outflow of foreign capital in the aftermath of the crisis. From an empirical identification point of view, this crisis represents an unexpected negative shock to FIIs' ownership in India, making it an ideal set-up to investigate the role of FIIs in influencing the monitoring role of boards. In this study, we focus on the four years pre-crisis and post-crisis beginning in 2008 and use different proxies of board monitoring to evaluate the impact of FIIs on the board monitoring.

The literature on corporate governance notes that FIIs, being informed and sophisticated investors, have the incentive as well as the ability to improve board monitoring. Our study adds to this literature by providing causal evidence of FIIs' influential role in improving the effectiveness of board monitoring. Consistent with economic arguments, the results show that firms with higher FIIs' ownership are associated with lower board size, busyness, network size, CEO power, and CEO pay and higher board diligence. Interestingly, we also find that FIIs prefer lower board independence in India. However, our result on board independence is counter-intuitive, but not surprising, given the empirical evidence that managers in emerging markets may appoint directors who are independent from the point of view of the regulators but still connected and sympathetic to the management. We also find that FIIs improve the performance of the firms through their improved board monitoring role. Specifically, we find that the enhanced board monitoring by FIIs improves firm performance, as measured using standard valuation and corporate innovation measures.

These results highlight the importance of FIIs in emerging markets. Given our evidence of improved board monitoring by FIIs and subsequent positive influence on firm performance, firms that suffer from governance and monitoring problems might find it beneficial to attract FIIs' investments. Our empirical results highlight the positive externalities generated by FIIs in emerging markets.

References

Adams, R. B., 2005. What do boards do? Evidence from board committee and director compensation data. Unpublished working paper. Federal Reserve Bank of New York, New York, NY.

Adams, R. B., Almeida, H., Ferreira, D., 2005. Powerful CEOs and their impact on corporate performance. Rev. Financ. Stud. 18 (4), 1403-1432.

Adams, R. B., Ferriera, D., 2007. A theory of friendly boards. J. Finance 62 (1), 217-250.

Adams, R. B., Hermalin, B. E., Weisbach, M. S., 2010. The role of board of directors in corporate governance: a conceptual framework and survey. J. Econ. Lit. 40 (1), 58-107.

Aggarwal, R., Erel, I., Ferreira, M., Matos, P., 2011. Does governance travel around the world? evidence from institutional investors. J. Financ. Econ. 100 (1), 154-181.

Baik, B., Kang, J.-K., Kim, J.-M., Lee, J., 2013. The liability of foreignness in international equity investments: evidence from the US stock market. J. Intl. Bus. Stud. 44 (4), 391-411.

Baker, M., Gompers, P. A., 2003. The determinants of board structure at the initial public offerings. J. Law Econ. 46 (2), 569-598.

Balasubramanian, N., Black, B., Khanna, V., 2010. The relation between firm-level corporate governance and market value: A case study of India. Emerg. Mar. Rev. 11 (4), 319-340.

Banerjee, S., Homroy, S., 2018. Managerial incentives and strategic choices of firms with different ownership structures. J. Corp. Finance 48, 314-330.

Bebchuk, L. A., Cremers, K. J. M., Peyer, U. C., 2011. The CEO pay slice. J. Financ. Econ. 102 (1), 199-221.

Bebchuk, L. A., Fried, J. M., 2003. Executive compensation as an agency problem. J. Econ. Perspec. 17 (3), 71-92.

Bebchuk, L. A., Fried, J. M., Walker, D. I., 2002. Managerial power and rent extraction in the design of executive compensation. Uni. Chic. Law Rev. 69 (3), 751-846.

Bena, J., Ferreira, M., Matos, P., Pires, P., 2017. Are foreign investors locusts? The long-term effects of foreign institutional ownership. J. Financ. Econ. 126 (1), 122-146.

Bennedsen, M., Kongsted, H. C., Nielsen, K. M., 2008. The causal effect of board size in the performance of small and medium-sized firms. J. Bank. Finance 32 (6), 1098-1109.

Bertrand, M., Mullainathan, S., 2001. Are CEOs rewarded for luck? The ones without principals are. Quart. J. Econ. 116 (3), 901-932.

Bertrand, M., Mullainathan, S., 2003. Enjoying the quite life? Corporate governance and managerial preference, J. Pol. Econ. 111, 1043-1075

Bhagat, S., Black, B., 2002. The non-correlation between board independence and long-term financial performance. J. Corp. Law. 27, 231-274.

Bizjak, J., Lemmon, M., Whitby, R., 2009. Option backdating and board interlocks. Rev. Financ. Stud. 22 (11), 4821-4847.

Black, B., Khanna, V., 2007. Can corporate governance reforms increase firm market value? Event study evidence from India. J. Emp. Leg. Stud. 4 (4), 749-796.

Black, B., Kim, W., 2012. The effect of board structure on firm value: a multiple identification strategies approach using Korean data. J. Financ. Econ. 104 (1), 203-226.

Blanchard, O. J., Das, M., Faruqee, H., 2010. The initial impact of the crisis on emerging market countries. Brook. Pap. Econ. Acti., 263-307.

Boone, A. L., Field, L. C., Karpoff, J. M., Raheja, C. G., 2007. The determinants of corporate board size and composition: an empirical analysis. J. Financ. Econ. 85 (1), 66-101.

Booth, J. R., Deli, D. N., 1996. Factors affecting the number of outside directorships held by CEOs. J. Financ. Econ. 40 (1), 81-104.

Brick, I. E., Chidambaran, N. K., 2010. Board meetings, committee structure, and firm value. J. Corp. Finance 16 (4), 533-553.
Brick, I. E., Palmon, O., Wald, J. K., 2006. CEO compensation, director compensation, and firm performance: evidence of cronyism? J. Corp. Finance 12 (3), 403-423.
Buchanan, B., Cao, C. X., Chen, C., 2018. Corporate social responsibility, firm value, and influential institutional ownership. J. Corp. Finance 52.
Chang, Y. Y., Dasgupta, S., Hilary, G., 2010. CEO ability, pay, and firm performance. Manag. Sci. 56 (10), 1633-1652.
Cheng, S., 2008. Board size and the variability of corporate performance. J. Financ. Econ. 87 (1), 157-176.
Chou, H.-I., Chung, H., Yin, X., 2013. Attendance of board meetings and company performance: evidence from Taiwan. J. Bank. Finance 37 (11), 4157-4171.
Claessens, S., Djankov, S., Fan, J. P. H., Lang, L., 2002. Disentangling the incentive and entrenchment effects of large shareholdings. J. Finance 57 (6), 2741-2771.
Cohen, L., Frazzini, A., Malloy, C. J., 2012. Hiring cheerleaders: board appointments of "independent" directors. Manag. Sci. 58 (6), 1039-1058.
Col, B., Sen, K., 2018. The role of corporate governance for acquisitions by the emerging market multinationals: Evidence from India. J. Corp. Finance Forthcoming.
Coles, J. L., Daniel, N. D., Naveen, L., 2008. Boards: does one size fit all? J. Financ. Econ. 87 (2), 329-356.
Combs, J. G., Ketchen Jr, D. J., Perryman, A. A., Donahue, M. S., 2007. The moderating effect of CEO power on the board composition-firm performance relationship. J. Manag. Stud. 44 (8), 1299-1323.
Core, J. E., Holthausen, R. W., Larcker, D. F., 1999. Corporate governance, chief executive officer compensation, and firm performance. J. Financ. Econ. 51 (3), 371-406.
Coval, J. D., Moskowitz, T. J., 1999. Home bias at home: local equity preference in domestic portfolios. J. Finance 54 (6), 2045-2073.
Coval, J. D., Moskowitz, T. J., 2001. The geography of investment: informed trading and asset prices. J. Polit. Econ. 109 (4), 811-841.
Dah, M. A., Frye, M. B., 2017. Is board compensation excessive? J. Corp. Finan. 45, 566-585.
Dahya, J., Dimitrov, O., McConnell, J. J., 2008. Dominant shareholders, corporate boards, and corporate value: A cross-country analysis. J. Financ. Econ. 87 (1), 73-100.
Dalton, D. R., Daily, C. M., Johnson, J. L., Ellstrand, A. E., 1999. Number of directors and financial performance: a meta analysis. Acad. Manag. J. 42 (6), 674-686.
Dalton, D. R., Hitt, M. A., Certo, S. T., Dalton, C. M., 2007. The Fundamental Agency Problem and Its Mitigation. Acad. Manag. Ann. 1 (1), 1-64.
Desender, K. A., Aguilera, R. V., Lópezpuertas-Lamy, M., Crespi, R., 2016. A clash of governance logics: Foreign ownership and board monitoring. Strateg. Manag. J. 37 (2), 349-369.
Dharmapala, D., Khanna, V., 2012. Corporate governance, enforcement, and firm value: evidence from India. J. Law. Econ. Org. 29 (5), 1056-1084.
Dooley, M., Hutchinson, M., 2009. Transmission of the U.S. subprime crisis to emerging markets: evidence on the decoupling–recoupling hypothesis. J. Int. Money Finance 28 (8), 1331-1349.
Douma, S., George, R., Kabir, R., 2006. Foreign and domestic ownership, business groups, and firm performance: evidence from a large emerging market. Strateg. Manag. J. 27 (7), 637-657.
Eisenberg, T., Sundgren, S., Wells, M. T., 1998. Large board size and decreasing firm value in small firms. J. Financ. Econ. 48 (1), 35-54.

Falato, A., Kadyrzhanova, D., Lel, U., 2014. Distracted directors: Does board busyness hurt shareholder value? J. Financ. Econ. 113 (3), 404-426.
Faleye, O., Hoitash, R., Hoitash, U., 2011. The costs of intense board monitoring. J. Financ. Econ. 101 (1), 160-181.
Fama, E. F., 1980. Agency problems and the theory of the firm. J. Polit. Econ. 88 (2), 288-307.
Fama, E. F., Jensen, M. C., 1983. Separation of ownership and control. J. Law Econ. 26 (2), 301-325.
Ferreira, D., Ferreira, M., Mariano, B., 2018. Creditor control rights and board independence. J. Finance Forthcoming.
Ferreira, M., Matos, P., 2008. The color of investors' money: the role of institutional investors around the world. J. Financ. Econ. 88 (3), 499-533.
Ferris, S. P., Jagannathan, M., Pirtchard, A. C., 2003. Too busy to mind the business? Monitoring by directors with multiple board appointments. J. Finance 58 (3), 1087-1111.
Fich, E. M., Shivdasani, A., 2006. Are busy boards effective monitors? J. Finance 61 (2), 689-724.
Fich, E. M., Shivdasani, A., 2007. Financial fraud, director reputation, and shareholder wealth. J. Financ. Econ. 86 (2), 306-336.
Fich, E. M., White, L. J., 2003. CEO compensation and turnover: the effects of mutually interlocked boards. Wake For. Law Rev. 38, 935.
Fich, E. M., White, L. J., 2005. Why do CEOs reciprocally sit on each other's boards? J. Corp. Finance 11 (1-2), 175-195.
Fratzscher, M., 2012. Capital flows, push versus pull factors and the global financial crisis. J. Int. Econ. 88 (2), 341-356.
Gillan, S., Starks, L. T., 2003. Corporate governance, corporate ownership, and the role of institutional investors: a global perspective. J. Appl. Finance 13 (2), 4-22.
Gopalan, R., Mukherjee, A., Singh, M., 2016. Do debt contract enforcement costs affect financing and asset structure? Rev. Financ. Stud. 29 (10), 2774-2813.
Griliches, Z., Pakes, A., Hall, B. H. 1987. The value of patents as indicators of inventive activity. In: Dasgupta, P, Stoneman, P (Eds), Economic policy and technological performance. Cambridge University Press: Cambridge; 1987.
Guest, P. M., 2008. The determinants of board size and composition: evidence from the UK. J. Corp. Finance 14 (1), 51-72.
Guo, L., Masulis, R. W., 2015. Board structure and monitoring: new evidence from CEO turnovers. Rev. Financ. Stud. 28 (10), 2770-2811.
Hallock, K. F., 1997. Reciprocally interlocking boards of directors and executive compensation. J. Financ. Quant. Anal. 32 (3), 331-344.
Harris, M., Raviv, A., 2008. A theory of board control and size. Rev. Financ. Stud. 21 (4), 1797-1832.
Hauser, R., 2018. Busy director and firm performance: evidence from mergers. J. Financ. Econ. 128 (1), 16-37.
Helmers, C., Patnam, M., Rau, R. P., 2017. Do board interlocks increase innovation? Evidence from a corporate governance reform in India. J. Bank. Finance 80, 51-70.
Hermalin, B. E., 2005. Trends in corporate governance. J. Financ. 605 (5), 2351-2384.
Hermalin, B. E., Weisbach, M. S., 1998. Endogenously chosen boards of directors and their monitoring of the CEO. Am. Econ. Rev. 88 (1), 96-118.
Huang, W., Zhu, T., 2015. Foreign institutional investors and corporate governance in emerging markets: Evidence of a split-share structure reform in China. J. Corp. Finance 32, 312-326.
Jackling, B., Johl, S., 2009. Board structure and firm performance: evidence from India's top companies. Corp. Gov. Int. Rev. 17 (4), 492-509.

Jensen, M. C., 1993. The modern industrial revolution, exit and the failure of internal control systems. J. Finance 48 (3), 831-880.
Jensen, M. C., Meckling, W. H., 1976. Theory of the firm: managerial behavior, agency costs and ownership structure. J. Financ. Econ. 3 (4), 305-360.
Jiraporn, P., Chintrakarn, P., Liu, Y., 2012. Capital structure, CEO dominance, and Corporate Performance. J. Financ. Serv. Res. 42 (3), 139-158.
Kang, J.-K., Shivdasani, A., 1995. Firm performance, corporate governance, and top executive turnover in Japan. J. Financ. Econ. 38 (1), 29-58.
Kaplan, S. N., Minton, B. A., 1994. Appointments of outsiders to Japanese boards: determinants and implications for managers. J. Financ. Econ. 36 (2), 225-258.
Kaplan, S. N., Reishus, D., 1990. Outside directorships and corporate performance. J. Financ. Econ. 27 (2), 389-410.
Khanna, T., Thomas, C., 2009. Synchronicity and firm interlocks in an emerging market. J. Financ. Econ. 92 (2), 182-204.
Kim, I., Miller, S., Wan, H., Wang, B., 2016. Drivers behind the monitoring effectiveness of global institutional investors: evidence from earnings management. J. Corp. Finance 40, 24-46.
Kim, J. I., Eppler-Kim, J., Kim, W. S., Byun, S. J., 2010. Foreign investors and corporate governance in Korea. Pac. Basin Finance J. 18 (4), 390-402.
Koirala, S., Marshall, A., Neupane, S., Thapa, C., 2018. Corporate governance reform and risk-taking: evidence from a quasi-natural experiment in an emerging market. J. Corp. Finance Forthcoming.
Kolev, K., Wiseman, R. M., Gomez-Mejia, L. R., 2017. Do CEOs ever lose? Fairness perspective on the allocation of residuals between CEOs and shareholders. J. Manag. 43 (2), 610-637.
Kovner, A., 2012. Do underwriters matter? The impact of the near failure of an equity underwriter. J. Financ. Intermed. 21 (3), 507-529.
Lehn, K. M., Patro, S., Zhao, M., 2009. Determinants of the size and composition of US corporate boards: 1935-2000. Financ. Manag. 38 (4), 747-780.
Leuz, C., Lins, K. V., Warnock, F. E., 2009. Do foreigners invest less in poorly governed firms? Rev. Financ. Stud. 22 (8), 3245–3285.
Lilienfeld-Toal, U. v., Mookherjee, D., Visaria, S., 2012. The distributive impact of reforms in credit enforcement: evidence from Indian debt recovery tribunals. Econo. 80 (2), 497-558.
Linck, J. S., Netter, J. M., Yang, T., 2008. The determinants of board structure. J. Financ. Econ. 87 (2), 308-328.
Lins, K. V., Volpin, P., Wagner, H. F., 2013. Does family control matter? International evidence from the 2008-2009 financial crisis. Rev. Financ. Stud. 26 (10), 2583-2619.
Lipton, M., Lorsch, J. W., 1992. A modest proposal for improved corporate governance. Bus. Law. 48 (1), 59-77.
Liu, Y., Jiraporn, P., 2010. The effect of CEO power on bond ratings and yields. J. Emp. Finance 17 (4), 744-762.
Liu, Y., Miletkov, M. K., Wei, Z., Yang, T., 2015. Board independence and firm performance in China. J. Corp. Finance 30, 223-244.
Lu, J., Wang, W., 2018. Managerial conservatism, board independence and corporate innovation. J. Corp. Finance 48, 1-16.
Luoung, H., Moshirian, F., Nguyen, L., Tian, X., 2017. How do foreign institutional investors enhance firm innovation? J. Financ. Quant. Anal. 52 (4), 1449-1490.
Lynall, M. D., Golden, B. R., Hillman, A. J., 2003. Board composition from adolescence to maturity: a multitheoretic view. Acad. Manag. Rev. 28 (3), 416-431.

Ma, J., Khanna, T., 2015. Independent directors' dissent on boards: evidence from listed companies in China. Strateg. Manag. J. 37 (8), 1547-1557.
Maug, E., 1998. Large shareholders as monitors: is there a trade-off between liquidity and control? J. Finance 53 (1), 65-98.
Milesi-Ferretti, G.-M., Tille, C., Ottaviano, G. I. P., Ravn, M. O., 2011. The great retrenchment: international capital flows during the global financial crisis. Econ. Policy. 26 (66), 285-342.
Miletkov, M. K., Poulsen, A. B., Wintoki, M. B., 2014. The role of corporate board structure in attracting foreign investors. J. Corp. Finance 29, 143-157.
Noe, T. H., 2002. Investor activism and financial market structure. Rev. Financ. Stud. 15 (1), 289-318.
Nyberg, A. J., Fulmer, I. S., 2010. Agency theory revisited: CEO return and shareholder interest alignment. Acad. Manag. J. 53 (5), 1029-1049.
Onali, E., Galiakhmetova, R., Molyneux, P., Torlucci, G., 2016. CEO power, government monitoring, and bank dividends. J. Financ. Intermed. 27, 89-117.
Patnaik, I., Shah, A., 2013. The investment technology of foreign and domestic institutional investors in an emerging market. J. Int. Money Finance 39, 65-88.
Puri, M., Rocholl, J., Steffen, S., 2011. Global retail lending in the aftermath of the US financial crisis: distinguishing between supply and demand effects. J. Financ. Econ. 100 (3), 556-578.
Raheja, C. G., 2005. Determinants of board size and composition: a theory of corporate boards. J. Financ. Quant. Anal. 40 (2), 283-306.
Romano, R., 2005. The Sarbanes-Oxley act and the making of quack corporate governance. Yale Law J. 114 (7), 1521-1604.
Ryan, J. H. E., Wiggins, I. R. A., 2004. Who is in whose pocket? Director compensation, board independence, and barriers to effective monitoring. J. Financ. Econ. 73 (3), 497-524.
Sarkar, J., Sarkar, S., Sen, K., 2008. Board of directors and opportunistic earnings management: evidence from India. J. Accounting, Audit. & Finance 23 (4), 517-551.
Schwartz-Ziv, M., Weisbach, M. S., 2013. What do boards really do? Evidence from minutes of board meetings. J. Financ. Econ. 108 (2), 349-366.
Shivdasani, A., Yermack, D., 1999. CEO involvement in the selection of new board members: an empirical analysis. J. Finance 54 (5), 1829-1853.
Shleifer, A., Vishny, R. W., 1986. Large shareholders and corporate control. J. Polit. Econ. 94 (3), 461-488.
Shleifer, A., Vishny, R. W., 1997. A survey of corporate governance. J. Finance 52 (2), 737-783.
Srinivasan, A., Thampy, A., 2017. The effect of relationships with government-owned banks on cash flow constraints: evidence from India. J. Corp. Finance 46, 361-373.
Stulz, R. M., 2005. The limits of financial globalization. J. Finance 60 (4), 1595-1638.
Tung, F., 2011. The puzzle of independent directors: new learning. Bost. Uni. Law Rev. 91, 1175-1190.
Vafeas, N., 1999. Board meeting frequency and firm performance. J. Financ. Econ. 53 (1), 113-142.
Vig, V., 2013. Access to collateral and corporate debt structure: evidence from a natural experiment. J. Finance 68 (3), 881-928.
Yermack, D., 1996. Higher market valuation of companies with a small board of directors. J. Financ. Econ. 40 (2), 185-211.

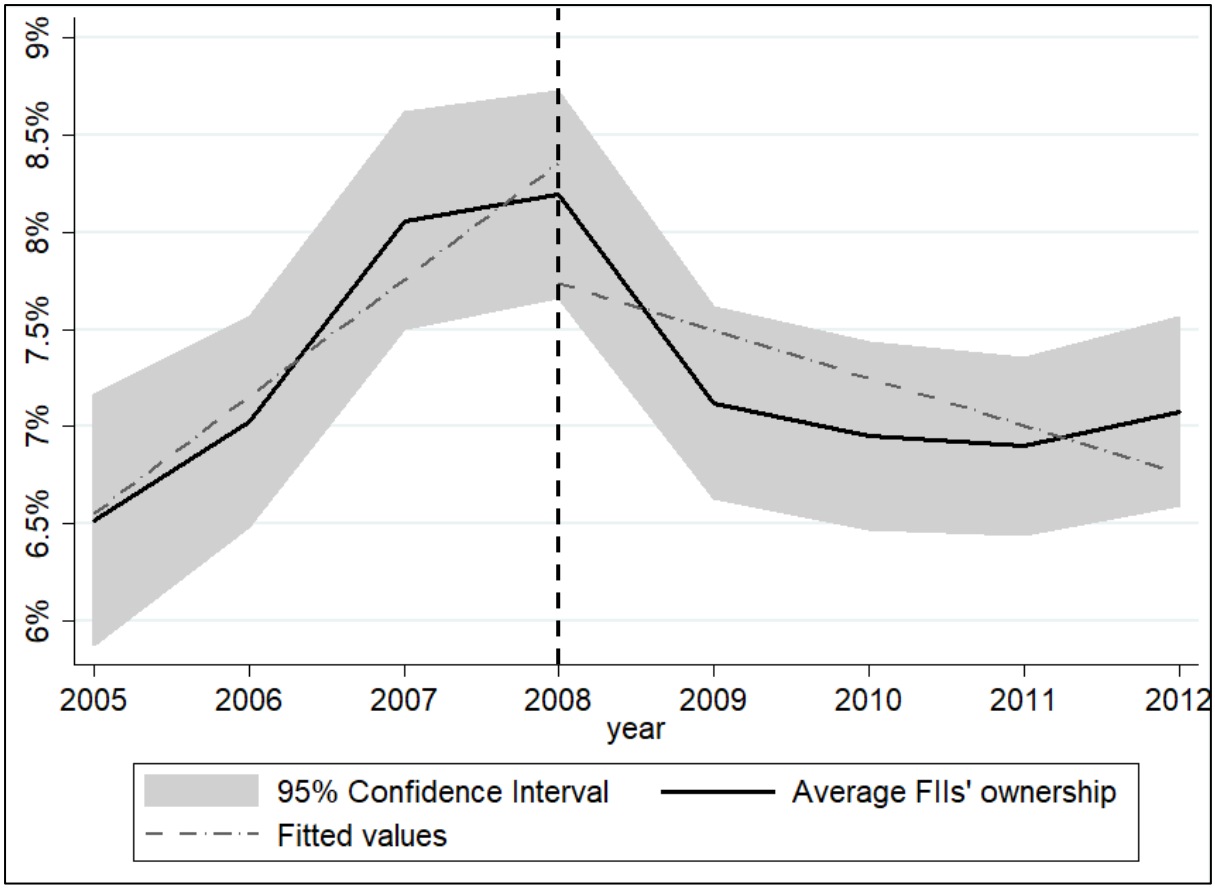

Fig. 1. Average FIIs' ownership

This figure plots the average FIIs' ownership (y-axis) four years (x-axis) before and after the financial crisis (denoted by the dashed horizontal line). The dash-dot line shows the general trend before and after crisis. The shaded area shows the 95% confidence interval.

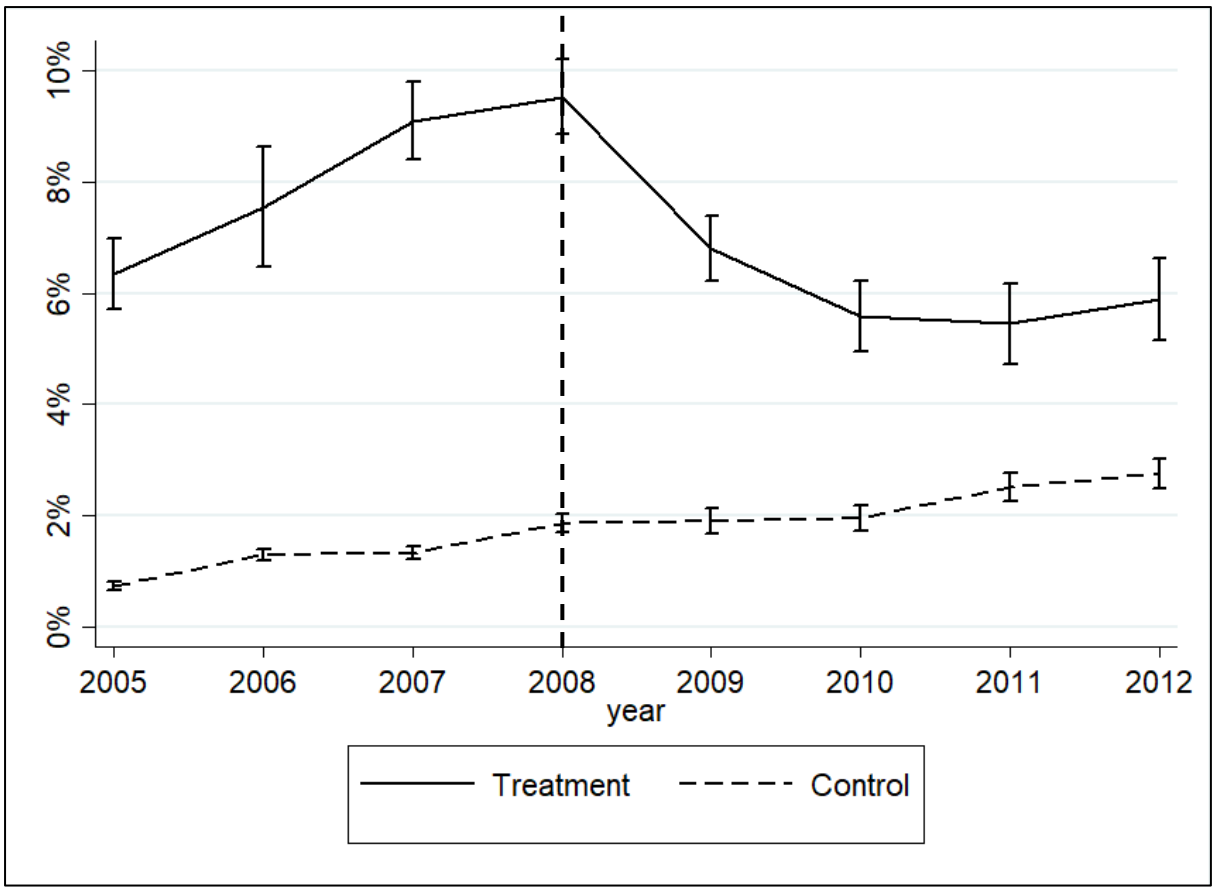

Fig. 2. Average FIIs' ownership of treatment and control group

This figure shows the trend in the average FIIs' ownership (x-axis) for the firms in the treatment group (solid black line) and the firms in the control group (dashed black line), four years (y-axis) before and after the crisis (dotted horizontal line). Treatment group is defined as the firms with "High FIIs" whereas Control group is defined as the firms with "High DIIs". "High FIIs" firms are those in which FIIs' ownership is above the median and "High DIIs" firms are those in which DIIs' ownership is above the median before 2008. Two standard errors are represented by the vertical lines from each of the annual mean nodes.

Table 1: Summary statistics

The table provides the summary statistics of all the variables in our full sample. The sample period is 2006-2011. Variables are described in Appendix A.

	Mean	Median	Std. Dev.	10pct	90pct
Panel A: Board monitoring					
Board size (#)	9.26	9.00	3.09	6.00	13.00
Board independence (%)	47.34	46.67	13.86	30.00	66.67
Board busyness	5.25	5.00	3.10	1.00	9.00
Board diligence	0.63	0.63	0.20	0.36	0.91
Network size (#)	25.10	20.00	22.80	1.00	55.00
CEO power	0.16	1.00	0.25	0.00	1.00
CEO pay (INR Million)	6.67	3.30	10.05	0.64	16.13
Panel B: Ownership variables					
Foreign institutional ownership (%)	5.75	3.01	6.93	0.08	15.20
Domestic institutional ownership (%)	12.65	7.11	14.768	0.18	44.14
Panel C: Firm performance variables					
Return on assets (%)	3.57	3.32	6.20	-4.37	12.04
Tobin's Q	0.95	0.79	0.54	0.45	1.75
Earnings per share (EPS)	8.10	3.42	41.47	-4.80	24.37
PBDITA (INR Million)	525.61	195.80	767.22	9.30	1,588.70
Assets turnover ratio (Times)	0.99	0.92	0.63	0.19	1.92
Panel D: Innovation variables					
R&D expenses (INR Million)	8.13	0.00	25.75	0.00	20.60
Patent count (#)	0.07	0.00	0.57	0.00	2.00
Panel E: Other financial variables					
Firm size (INR Million)	4,158.76	1,883.30	5,544.57	330.20	11,276.80
Firm age (Years)	33.19	26.00	19.77	15.00	62.00
Leverage (%)	125.36	79.73	136.64	0.87	324.68
STDDEV (%)	17.96	16.63	8.47	9.25	27.76
Sales (INR Million)	4,721.50	1,712.40	9,282.25	143.00	11,310.80
Export (% of Sales)	15.58	3.25	24.51	0.00	53.50
Capital expenses (INR Million)	532.69	125.20	1,312.43	8.50	1,415.30

Table 2: Sample selection

The table shows the sample selection process. The sample firms are identified based on FIIs' and DIIs' ownership before 2008.

Filter	Number of firms
Number of firms in the universe with FIIs' and DIIs' ownership	4,842
Number of firms classified as "High FIIs"	2,932
Number of firms classified as "High DIIs"	2,102
Number of firms classified as "None"	1,469
Less: Number of firms classified as "High FIIs" and "High DIIs"	1,861
Number of firms classified as "High FIIs" but no "High DIIs"	689
Number of firms classified as "High DIIs" but no "High FIIs"	823
Number of firms classified as "None"	1,469

Table 3: Propensity score matching

The table reports the results of PSM. Treatment group is defined as the firms with "High FIIs" whereas Control group is defined as the firms with "High DIIs". "High FIIs" firms are those in which FIIs' ownership is above the median FIIs' ownership and "High DIIs" firms are those in which DIIs' ownership is above the median DIIs' ownership before 2008. We use PSM with the nearest neighborhood of 0.01 caliper using various firm-level characteristics to identify matched control groups. Panel A presents the parameter estimates from the probit model used to estimate the propensity scores for the treatment and control groups. The dependent variable is 1 if in the treatment group and 0 if in the control group. The firm-level characteristics are defined in Appendix A. We control for firm fixed effects. Standard errors are corrected for clustering at the firm level. Panel B reports the distribution of estimated propensity scores post matching. Panel C reports the univariate comparison between the treatment and control firm's characteristics and their corresponding *t*-statistics. Panel D reports regression results based on Equation (1). The dependent variable is various proxies of board monitoring: board size, board independence, board busyness, board diligence, network size, CEO power and CEO pay. $Treated_i$ is the dummy variable that takes the value of one if the firm is classified as a treated firm and zero if firms are classified as control firms. $Year_{05-06}$, $Year_{07}$, $Year_{08}$, $Year_{09}$, $Year_{10}$, and $Year_{11-12}$ indicate firm-year observations. Firm and time fixed effects are included, and errors are clustered at firm level. In this table, *, ** and *** denote statistical significance at the 10%, 5% and 1% significance level respectively.

Panel A: Pre-match propensity score regression and post-match diagnostic regression

	Dummy=1 if in the treatment group; 0 if in the control group	
	Model 1 Pre-match	Model 2 Post-Match
Firm size	0.672***	-0.220
	(3.25)	(-1.58)
Tobin's Q	0.170**	0.112
	(2.32)	(0.86)
Firm age	-0.183***	-0.121
	(-2.59)	(-1.61)
Return on assets	0.426	0.601
	(0.97)	(1.39)
Leverage	-0.000	-0.000
	(-1.21)	(-1.14)
Pseudo R^2	0.372	0.214
Number of observations	6,111	4,263

Panel B: Estimated propensity score distributions

	Firms	Min.	5pct	Median	Mean	Std. Dev	95pct	Max
Treatment	390	0.004	0.188	0.565	0.563	0.214	0.904	0.984
Control	390	0.004	0.188	0.574	0.569	0.218	0.914	0.994
Difference	-	0.000	0.000	-0.009	-0.006	-0.004	-0.010	-0.010

Panel C: Difference in firm characteristics

	Treatment	Control	Difference	*t*-statistics
Firm size	7.704	7.284	0.420	0.47
Tobin's Q	0.887	0.938	-0.051	-0.99
Firm age	3.158	3.138	0.020	0.77
Return on assets	0.029	0.034	-0.005	-1.55
Leverage	3.513	2.462	1.051	0.94

Panel D: Parallel trends

	Board size (1)	Board independence (2)	Board busyness (3)	Board diligence (4)	Network size (5)	CEO power (6)	CEO pay (7)
$Treated_i \times Year_{05-06}$	0.017	-0.003	0.020	-0.019	0.749	-0.023	0.096
	(1.25)	(0.61)	(0.59)	(-1.26)	(1.80)	(-0.70)	(1.24)
$Treated_i \times Year_{07}$	0.029	-0.015	0.059	0.040	0.830	-0.020	0.113
	(1.05)	(0.17)	(0.69)	(1.42)	(0.87)	(-0.91)	(1.54)
$Treated_i \times Year_{08}$	0.019	-0.009	0.010	0.066	1.377*	-0.015	0.175
	(1.09)	(0.00)	(1.34)	(1.07)	(1.87)	(-1.13)	(1.29)
$Treated_i \times Year_{09}$	0.055**	0.012**	0.098**	-0.046***	2.198***	0.056**	0.263***
	(2.52)	(2.14)	(2.02)	(-3.79)	(3.06)	(2.41)	(4.35)
$Treated_i \times Year_{09}$	0.058**	0.021**	0.096**	-0.051***	4.353***	0.053**	0.377***
	(2.62)	(2.35)	(2.46)	(-2.74)	(3.35)	(2.22)	(4.29)
$Treated_i \times Year_{11-12}$	0.062**	0.029***	0.108**	-0.062***	5.885***	0.051***	0.434***
	(2.49)	(3.02)	(2.33)	(-3.34)	(3.11)	(3.70)	(2.92)
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.30	0.08	0.23	0.27	0.26	0.07	0.44
Number of observations	4,390	4,253	4,001	4,250	4,414	4,390	3,308

Table 4: Pre and post summary figures

This table compares the important variables before and after the financial crisis. Panel A shows the comparison of means and the Panel B shows the comparison of medians. The significance of the mean and median is based on a two-tailed *t*-test and Wilcoxon test respectively. *, **, and *** denote significance at the 10%, 5% and 1% significance level respectively.

	Panel A: Means			Panel B: Medians		
	Before crisis (1)	After crisis (2)	Diff (2)-(1)	Before crisis (1)	After crisis (2)	Diff (2)-(1)
Board size (#)	8.97	9.55	0.58***	9.00	9.00	0.00
Board independence (%)	45.83	48.83	3.00***	44.44	50.00	5.56***
Board busyness	4.96	5.58	0.62***	5.00	5.00	0.00
Board diligence	0.67	0.59	-0.08**	0.64	0.62	-0.02**
Network size (#)	23.98	26.21	2.23***	19.00	21.00	2.00***
CEO power	0.14	0.18	0.04	0.00	0.00	0.00
CEO pay	8.07	5.27	2.80***	3.06	4.15	1.09***
Return on assets (%)	4.33	3.00	-1.33***	4.25	2.86	-1.39***
Tobin's Q	1.01	0.90	-0.11***	0.90	0.76	-0.14***
Earnings per share	8.56	7.64	-0.92	4.23	2.88	-1.35***
PBDITA (INR Million)	605.22	445.99	-159.23***	232.40	182.90	-49.50***
Assets turnover ratio (Times)	1.03	0.96	-0.07***	0.93	0.87	-0.06***
R&D expenses (INR Million)	9.97	6.31	-3.66***	0.00	0.00	0.00
Patent count (#)	0.09	0.04	-0.05**	0.00	0.00	0.00
Total assets (INR Million)	4,284.11	4,033.38	-250.73***	1,633.10	2,388.40	755.30***
Age (Years)	31.19	35.19	4.00***	24.00	27.00	3.00**
Leverage (%)	123.56	127.20	3.64	83.23	76.75	-6.48**
STDDEV (%)	19.49	16.42	-3.07***	17.93	16.48	-1.45***
Sales (INR Million)	3,646.05	5,793.96	2147.91***	1,542.05	2,006.45	464.40***
Export (% of sales)	16.02	15.14	-0.88	3.45	3.07	-0.38**
Capital expenses (INR Million)	621.50	443.85	-177.65***	111.85	128.90	17.05**

Table 5: Mean difference-in-differences analysis

This table reports the mean DiD test results examining the mean difference in FIIs' ownership in Panel A and board monitoring proxies in Panel B before (2005-2008) and after the crisis period (2009-2012) for the treatment and control group. The main variables are defined in Appendix A. Treatment group is defined as the firms with "High FIIs" whereas Control group is defined as the firms with "High DIIs". "High FIIs" firms are those in which FIIs' ownership is above the median FIIs' ownership and "High DIIs" firms are those in which DIIs' ownership is above the median DIIs' ownership before 2008. We use PSM with the nearest neighborhood of 0.01 caliper using various firm-level characteristics to identify matched control groups. In this table, *, ** and *** denote statistical significance at the 10%, 5% and 1% significance level respectively.

Panel A: Ownership

	Mean treatment difference (after-before)	Mean control difference (after-before)	Mean DiD estimator (treat-control)
FIIs' ownership	-2.579***	0.949	-3.528***
	(-4.92)	(1.25)	(3.97)

Panel B: Board monitoring proxies

	Mean treatment difference (after-before)	Mean control difference (after-before)	Mean DiD estimator (treat-control)
Board size	0.074***	0.003	0.071***
	(3.42)	(0.83)	(3.12)
Board independence	0.041***	0.006	0.035**
	(2.98)	(0.95)	(2.43)
Board busyness	0.126***	0.017	0.109**
	(2.86)	(0.59)	(2.47)
Board diligence	-0.051***	-0.007	-0.044***
	(-3.43)	(-1.21)	(-3.21)
Network size	5.020**	0.080	4.940**
	(2.18)	(0.23)	(2.15)
CEO power	0.026**	-0.023	0.049**
	(2.27)	(-1.31)	(-2.43)
CEO pay	0.524***	0.239**	0.285***
	(5.39)	(2.35)	(2.89)

Table 6: Regression-based difference-in-differences analysis

This table reports the results for the regression-based DiD with the following specification:

$$y_{ijt} = \beta\, Treated_i \times Crisis_t + X_{ijt} + \gamma_t + \alpha_i + \varepsilon_{ijt}$$

where i indexes firms, t indexes time, j indexes industries; y_{ijt} is the dependent variable of interest, which is the different proxies of board monitoring; γ_t and α_i are year and firm fixed effects respectively; $Treated_i$ is the dummy variable that takes the value of 1 if the firms are classified as treated firms and 0 if firms are classified as control firms. $Crisis_t$ is also a dummy variable that takes the value of 1 in the post-crisis years (2009-2012) and 0 for the pre-crisis years (2005-2008); X_{ijt} are control variables; and ε_{ijt} is the error term. Treatment group is defined as the firms with "High FIIs" whereas Control group is defined as the firms with "High DIIs". "High FIIs" firms are those in which FIIs' ownership is above the median FIIs'' ownership and "High DIIs" firms are those in which DIIs' ownership is above the median DIIs' ownership before 2008. We use PSM with nearest neighborhood of 0.01 caliper using various firm-level characteristics to identify matched control groups. Control variables are defined in Appendix A. Standard errors are clustered at the firm level. In this table, *, ** and *** denote statistical significance at the 10%, 5% and 1% significance level respectively.

	Board size (1)	Board independence (2)	Board busyness (3)	Board diligence (4)	Network size (5)	CEO power (6)	CEO pay (7)
$Treated_i \times Crisis_t$	0.053**	0.022**	0.095***	-0.030**	4.613***	0.042***	0.230***
	(2.58)	(2.37)	(2.60)	(-2.53)	(3.26)	(3.07)	(3.27)
Tobin's Q	0.008***	-0.018**	0.001	0.002	0.130	0.002	-0.010
	(2.79)	(-2.51)	(0.16)	(0.87)	(0.42)	(0.85)	(-0.47)
Firm size	0.098***	-0.005	0.131***	-0.069***	5.716***	0.022***	0.389***
	(13.10)	(-1.40)	(9.30)	(-17.06)	(10.13)	(2.59)	(11.93)
ROA	0.044	-0.020	0.211	-0.004	11.555**	0.088**	2.014***
	(0.65)	(-0.32)	(1.61)	(-0.05)	(2.34)	(2.37)	(3.50)
Firm age	0.036*	0.026***	0.130***	0.021*	5.266***	-0.006	0.182***
	(1.88)	(3.52)	(3.73)	(1.92)	(3.58)	(-0.08)	(3.01)
Leverage	-0.002***	0.002	-0.003***	0.001	-0.099***	-0.002*	-0.004
	(-3.15)	(0.54)	(-3.10)	(0.92)	(-3.05)	(-1.67)	(-1.13)
R&D	0.605	0.232	2.876***	-0.471	132.411***	-1.773	0.486
	(0.90)	(1.06)	(2.87)	(-1.30)	(2.89)	(-0.71)	(0.17)
STDDEV	-0.178**	0.122***	-0.283	0.042	-9.082	0.023	-1.463***
	(-2.37)	(3.15)	(-1.63)	(0.76)	(-1.65)	(0.46)	(-4.73)
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.29	0.22	0.22	0.26	0.26	0.33	0.44
Observations	4,390	4,253	4,001	4,250	4,414	4,359	3,308

Table 7: FIIs' ownership and instrumental variable regression

Panel A of this table reports the results for the following specification:

$$y_{ijt} = \beta_1\, Treated_i \times Crisis_t \times FII_{it-1} + \beta_2\, Treated_i \times Crisis_t + \beta_3\, Treated_i \times FII_{it-1} + \beta_4\, Crisis_t \times FII_{it-1} + \beta_5 FII_{it-1} + X_{ijt} + \gamma_t + \alpha_i + \varepsilon_{ijt}$$

where i indexes firms, t indexes time, j indexes industries; y_{ijt} is the dependent variable of interest, which is the different proxies of board monitoring; γ_t and α_i are year and firm fixed effects respectively; $Treated_i$ is the dummy variable that takes the value of 1 if the firms are classified as treated firms and 0 if firms are classified as control firms. $Crisis_t$ is also a dummy variable that takes the value of 1 in the post-crisis years (2009-2012) and 0 for the pre-crisis years (2005-2008); FII_{it-1} is the level of FIIs' ownership; $X_{ijt}$are control variables which are similar to Table 6; and ε_{ijt} is the error term. Treatment group is defined as the firms with "High FIIs" whereas Control group is defined as the firms with "High DIIs". "High FIIs" firms are those in which FIIs' ownership is above the median FIIs' ownership and "High DIIs" firms are those in which DIIs' ownership is above the median DIIs' ownership before 2008. We use PSM with nearest neighborhood of 0.01 caliper using various firm-level characteristics to identify matched control groups. Control variables are defined in Appendix A. Standard errors are clustered at the firm level. Panel B presents the estimates using the IV method based on two-stage least square (2SLS) panel regression. We replace FII_{it-1} in the equation used in Panel A with IV. The IV is the average FIIs' ownership in similar size-matched firms in the same industry. The estimated parameters of the controls are not reported for brevity. In this table, *, ** and *** denote statistical significance at the 10%, 5% and 1% significance level respectively.

Panel A: Level of FIIs' ownership

	Board size	Board independence	Board busyness	Board diligence	Network size	CEO power	CEO pay
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$Treated_i \times Crisis_t \times FII_{t-1}$	-2.152**	0.269	-3.172***	0.934**	-32.022***	-0.625***	-2.650**
	(-2.43)	(0.59)	(-3.13)	(2.40)	(-2.78)	(-3.16)	(-2.54)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.41	0.19	0.23	0.37	0.41	0.63	0.43
Number of observations	4,390	4,253	4,001	4,250	4,414	4,359	3,308

Panel B: Instrumental variable second-stage

	Board size	Board independence	Board busyness	Board diligence	Network size	CEO power	CEO pay
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$Treated_i \times Crisis_t \times FII_{t-1}$	-2.152**	0.269	-3.172**	0.934**	-32.022***	0.625***	-2.650**
	(-2.43)	(0.59)	(-2.13)	(2.40)	(-2.78)	(3.16)	(-2.54)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.23	0.15	0.11	0.12	0.16	0.18	0.31
First stage *F*	66.23	66.21	65.42	68.60	86.64	79.18	55.84
Shea's partial R^2	0.26	0.29	0.29	0.31	0.33	0.33	0.29
Number of observations	4,390	4,253	4,001	4,250	4,414	4,359	3,308

Table 8: Robustness test: Alternative definitions of dependent variables

This table reports the robustness results for the regression-based DiD with the following specification:

$$y_{ijt} = \beta\, Treated_i \times Crisis_t + X_{ijt} + \gamma_t + \alpha_i + \varepsilon_{ijt}$$

where i indexes firms, t indexes time, j indexes industries; y_{ijt} is the dependent variable of interest, which is the different alternate proxies of board monitoring. In model (1), the dependent variable is the number of members on the board, in model (2), the dependent variable is the number of IDs on the board, in model (3), the dependent variable is Core et al. (1999) definition of board busyness, in model (4), the dependent variable is Fich and Shivdasani (2006) definition of board busyness, in model (5), we use the alternate definition of CEO power and in model (6), the dependent variable is CEO variable pay. See Appendix A for definition. γ_t and α_j are year and industry fixed effects respectively; $Treated_i$ is the dummy variable that takes the value of 1 if the firms are classified as the treatment firms and 0 if firms are classified as the control firms. $Crisis_t$ is also a dummy variable that takes the value of 1 in the post-crisis years (2009-2012) and 0 for pre-crisis years (2005-2008); $X_{ijt}$are control variables; and ε_{ijt} is the error term. We include firm fixed effects, α_j and year fixed effects, γ_t. Treatment group is defined as the firms with "High FIIs" whereas Control group is defined as the firms with "High DIIs". "High FIIs" firms are those in which FIIs' ownership is above the median FIIs' ownership and "High DIIs" firms are those in which DIIs' ownership is above the median DIIs' ownership before 2008. We use PSM with nearest neighborhood of 0.01 caliper using various firm level characteristics to identify the matched control groups. Control variables are defined in Appendix A. Standard errors are clustered at the industry level. In this table, *, ** and *** denote statistical significance at the 10%, 5% and 1% significance level respectively.

	Board size (#)	Board independence (#)	Board busyness		Alternate CEO power	CEO variable pay
			Core et al. (1999)	Fich and Shivdasani (2006)		
	(1)	(1)	(3)	(4)	(5)	(6)
$Treated_i \times Crisis_t$	0.498***	0.393**	0.124***	0.094**	0.025**	0.319***
	(3.19)	(2.46)	(2.95)	(2.18)	(2.37)	(2.99)
Tobin's Q	0.409***	0.091	-0.006	-0.003	-0.001	-0.044
	(3.30)	(1.04)	(-1.39)	(-0.14)	(-0.84)	(-1.09)
Firm size	0.832***	0.353***	0.050***	0.067***	0.06**	0.667***
	(9.19)	(8.77)	(4.74)	(5.80)	(2.40)	(8.23)
ROA	-0.123	-0.156	0.113	0.189**	0.079	2.629**
	(-0.23)	(-0.32)	(1.27)	(2.21)	(1.59)	(2.44)
Firm age	0.420**	0.433***	0.084**	0.068**	0.112**	0.313**
	(2.22)	(4.44)	(2.90)	(2.47)	(2.25)	(2.58)
Leverage	-0.007	-0.006*	-0.001**	-0.003***	0.000	-0.044**
	(-1.48)	(-1.96)	(-2.65)	(-4.50)	(0.01)	(-1.99)
R&D	6.748**	5.479*	2.667***	2.692***	3.585	3.650
	(2.05)	(1.84)	(3.69)	(4.62)	(1.58)	(0.62)
STDDEV	-1.241*	0.345	-0.053	-0.243	0.003	-3.141***
	(-1.83)	(0.76)	(-0.44)	(-1.59)	(0.07)	(-4.36)
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.41	0.19	0.09	0.10	0.84	0.34
Number of observations	4,385	4,253	4,391	3,937	4,359	2,044

Table 9: Robustness test: Alternative identification of treatment and control firms

This table reports the alternate results for the regression-based DiD with the following specification:

$$y_{ijt} = \beta\ Alt\_treated_i \times Crisis_t + X_{ijt} + \gamma_t + \alpha_i + \varepsilon_{ijt}$$

where i indexes firms, t indexes time, j indexes industries; y_{ijt} is the dependent variable of interest, which is the different proxies of board monitoring; γ_t and α_i are year and firm fixed effects respectively; $Alt\_Treated_i$ is the dummy variable that takes the value of 1 if the firms are classified as the alternate treated firms and 0 if firms are classified as the alternate control firms. $Crisis_t$ is also a dummy variable that takes the value of 1 in the post-crisis years (2009-2012) and 0 for pre-crisis years (2005-2008). $X_{ijt}$are control variables which are similar to Table 6; and ε_{ijt} is the error term. We include industry fixed effects, α_j and year fixed effects, γ_t. Treatment group is defined as the firms with "High FIIs" whereas the alternate control group is defined as the firms with "None". "High FIIs" firms are those one in which FIIs' ownership is above the median FIIs' ownership and "High DIIs" firms are those in which DIIs' ownership is above the median DIIs' ownership before 2008. We use PSM with nearest neighborhood of 0.01 caliper using various firm level characteristics to identify the matched control groups. Control variables are defined in Appendix A. Standard errors are clustered at the firm level. In this table, *, ** and *** denote statistical significance at the 10%, 5% and 1% significance level respectively.

	Board size	Board independence	Board busyness	Board diligence	Network size	CEO power	CEO pay
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$Alt\_treated_i \times Crisis_t$	0.017**	0.007	0.075**	-0.035**	2.404***	0.031**	0.154***
	(2.14)	(0.86)	(2.15)	(-2.23)	(4.42)	(2.33)	(3.55)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.32	0.49	0.55	0.57	0.53	0.48	0.38
Number of observations	5,518	5,290	4,752	5,269	5,555	5,518	3,752

Table 10: Robustness test: False experiments

This table reports the coefficient estimates for the false experiments with the following specification:

$$y_{ijt} = \beta\, Treated_i \times False\ crisis_t + X_{ijt} + \gamma_t + \alpha_i + \varepsilon_{ijt}$$

where i indexes firms, t indexes time, j indexes industries; y_{ijt} is the dependent variable of interest, which is the different proxies of board monitoring; γ_t and α_i are year and firm fixed effects respectively; $Treated_i$ is the dummy variable that takes the value of 1 if the firms are classified as the treated firms and 0 if firms are classified as the control firms. $False\ Crisis_t$ is a dummy variable that takes the value of 0 in the four years pre-false crisis year (2005, 2006, 2012, and 2013) and 1 for four years post-false crisis years. $X_{ijt}$are control variables which are similar to Table 6; and ε_{ijt} is the error term. Treatment group is defined as the firms with "High FIIs" whereas control group is defined as firms with "High DIIs" in Panel B. "High FIIs" firms are those in which FIIs' ownership is above the median FIIs' ownership and "High DIIs" firms are those in which DIIs' ownership is above the median DIIs' ownership before 2008. We use PSM with nearest neighborhood of 0.01 caliper using various firm level characteristics to identify the matched control groups. Control variables are defined in Appendix A. Standard errors are clustered at the firm level. In this table, *, ** and *** denote statistical significance at the 10%, 5% and 1% significance level respectively.

	Board size	Board independence	Board busyness	Board diligence	Network size	CEO power	CEO pay
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$Treated_i \times False\ crisis_{2005}$	0.022	0.015	0.085	0.022	8.123	0.012	0.077
	(0.84)	(1.12)	(1.22)	(1.12)	(1.37)	(0.66)	(0.99)
$Treated_i \times False\ crisis_{2006}$	0.020	0.001	0.042	-0.013	6.215	0.012	0.121
	(1.01)	(0.23)	(0.75)	(-1.02)	(1.22)	(1.11)	(1.41)
$Treated_i \times False\ crisis_{2012}$	0.011	0.015	0.055	0.011	2.521	0.038*	0.125
	(0.37)	(1.27)	(1.33)	(0.55)	(1.17)	(1.92)	(1.09)
$Treated_i \times False\ crisis_{2013}$	0.025	0.011	0.042	0.022**	1.511	0.021	0.127
	(1.31)	(1.20)	(1.23)	(2.12)	(0.77)	(0.91)	(1.22)

Table 11: FIIs' pressured board monitoring and firm value

This table reports the results for the following specification:

$$Value_{ijt} = \beta_1\, Treated_i \times Crisis_t \times\ y_{ijt} + \beta_2\ Treated_i \times Crisis_t + \beta_3\ Treated_i \times\ y_{ijt} +\ \beta_4\, Crisis_t \times\ y_{ijt} +\ X_{ijt} + \gamma_t + \alpha_i + \varepsilon_{ijt}$$

where i indexes firms, t indexes time, j indexes industries. $Value_{ijt}$ is the main dependent variable – Return on assets in Panel A, Tobin's Q in Panel B, Earnings per share in Panel C, PBDITA in Panel D and Asset Turnover Ratio is Panel E. y_{ijt} is the different proxies of board monitoring. These variables are defined in Appendix A. γ_t and α_i are year and firm fixed effects respectively. $Treated_i$ is the dummy variable that takes the value of 1 if the firms are classified as treated firms and 0 if firms are classified as control firms. $Crisis_t$ is also a dummy variable that takes the value of 1 in the post-crisis years (2009-2012) and 0 for pre-crisis years (2005-2008); $X_{ijt}$are control variables; and ε_{ijt} is the error term. Treatment group is defined as the firms with "High FIIs" whereas Control group is defined as the firms with "High DIIs". "High FIIs" firms are those in which FIIs' ownership is above the median FIIs' ownership and "High DIIs" firms are those in which DIIs' ownership is above the median DIIs' ownership before 2008. We use PSM with nearest neighborhood of 0.01 caliper using various firm level characteristics to identify the matched control groups. Control variables include firm size, age, leverage, research and development expenses, capital expenses, sales and export sales. Control variables are defined in Appendix A. Standard errors are clustered at the firm level. In this table, *, ** and *** denote statistical significance at the 10%, 5% and 1% significance level respectively.

Panel A: Tobin's Q

	Dependent variable = Tobin's Q						
	×Board size	×Board independence	×Board busyness	×Board diligence	×Network size	×CEO power	×CEO pay
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$Treated_i \times Crisis_t \times$	-0.103***	-1.584	-0.069***	0.131***	-0.025**	-0.166***	-0.049***
	(-3.83)	(-1.16)	(-3.22)	(3.58)	(-2.01)	(-4.32)	(3.49)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.62	0.10	0.22	0.36	0.21	0.11	0.21
Number of observations	4,356	4,213	4,001	4,210	4,380	4,359	3,308

Panel B: Return on assets

	Dependent variable = Return on assets						
	×Board size	×Board independence	×Board busyness	×Board diligence	×Network size	×CEO power	×CEO pay
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$Treated_i \times Crisis_t \times$	-0.096**	0.015	-0.030***	0.065***	-0.004***	-0.231***	-0.003**
	(-2.37)	(1.41)	(-3.34)	(3.85)	(-3.15)	(-2.99)	(-2.30)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.50	0.10	0.22	0.20	0.49	0.21	0.26
Number of observations	4,356	4,213	4,001	4,210	4,380	4,359	3,308

Panel C: Earnings per share

	Dependent variable = Earnings per share						
	×Board size	×Board independence	×Board busyness	×Board diligence	×Network size	×CEO power	×CEO pay
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$Treated_i \times Crisis_t \times$	-0.100***	-0.039	-0.056***	0.186***	-0.001**	-0. 55**	-0.036***
	(-3.69)	(-0.24)	(-3.27)	(3.04)	(-2.63)	(-2.54)	(-3.10)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.21	0.04	0.32	0.34	0.45	0.24	0.13
Number of observations	4,356	4,213	4,001	4,210	4,380	4,359	3,308

Panel D: PBDITA

	Dependent variable = PBDITA						
	×Board size	×Board independence	×Board busyness	×Board diligence	×Network size	×CEO power	×CEO pay
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$Treated_i \times Crisis_t \times$	-0.079***	0.017	-0.154***	0.611***	-0.002***	-0.241***	-0.072**
	(-2.96)	(1.78)	(-3.64)	(3.78)	(-2.32)	(-2.92)	(-2.10)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.50	0.11	0.11	0.11	0.43	0.10	0.11
Number of observations	4,356	4,213	4,001	4,210	4,380	4,359	3,308

Panel E: Assets turnover ratio

	Dependent variable = Assets turnover ratio						
	×Board size	×Board independence	×Board busyness	×Board diligence	×Network size	×CEO power	×CEO pay
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$Treated_i \times Crisis_t \times$	-0.273***	0.354	-0.071***	0.301**	-0.004***	0.281***	-0.087***
	(-3.84)	(1.44)	(-3.84)	(2.67)	(-4.91)	(3.82)	(-3.08)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.24	0.45	0.46	0.27	0.45	0.44	0.30
Number of observations	4,356	4,213	4,001	4,210	4,380	4,359	3,308

Table 12: FIIs' pressured board monitoring and innovation

This table reports the results for the following specification:

$$Innv_{ijt} = \beta_1\, Treated_i \times Crisis_t \times\ y_{ijt} + \beta_2\ Treated_i \times Crisis_t + \beta_3\ Treated_i \times\ y_{ijt} + \beta_4\, Crisis_t \times\ y_{ijt} + X_{ijt} + \gamma_t + \alpha_i + \varepsilon_{ijt}$$

where i indexes firms, t indexes time, j indexes industries. $Innv_{ijt}$ is the main dependent variable – Total patent count in Panel A, and R&D (scaled by sales) in Panel B. y_{ijt} is the different proxies of board monitoring. These variables are defined in Appendix A. γ_t and α_i are year and firm fixed effects respectively. $Treated_i$ is the dummy variable that takes the value of 1 if the firms are classified as the treated firms and 0 if firms are classified as the control firms. $Crisis_t$ is also a dummy variable that takes the value of 1 in the post-crisis years (2009-2012) and 0 for pre-crisis years (2005-2008); $X_{ijt}$are control variables; and ε_{ijt} is the error term. Treatment group is defined as the firms with "High FIIs" whereas Control group is defined as the firms with "High DIIs". "High FIIs" firms are those in which FIIs' ownership is above the median FIIs' ownership and "High DIIs" firms are those in which DIIs' ownership is above the median DIIs' ownership before 2008. We use PSM with nearest neighborhood of 0.01 caliper using various firm level characteristics to identify the matched control groups. Control variables include Tobin's Q, firm size, sales, export sales, firm age, leverage, and return on assets. Control variables are defined in Appendix A. Standard errors are clustered at the industry level. In this table, *, ** and *** denote statistical significance at the 10%, 5% and 1% significance level respectively.

Panel A: Total patent count

	Dependent variable = Total patent count						
	×Board size	×Board independence	×Board busyness	×Board diligence	×Network size	×CEO power	×CEO pay
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$Treated_i \times Crisis_t \times$	-0.053**	0.045	0.051**	0.272***	-0.002**	-0.032	-0.028***
	(-2.56)	(0.17)	(2.48)	(3.96)	(-2.32)	(-0.47)	(-3.18)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.07	0.07	0.07	0.07	0.07	0.07	0.09
Number of observations	4,356	4,213	4,001	4,210	4,380	4,359	3,308

Panel B: R&D expenses

	Dependent variable = R&D						
	×Board size	×Board independence	×Board busyness	×Board diligence	×Network size	×CEO power	×CEO pay
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$Treated_i \times Crisis_t \times$	-0.001***	0.005	-0.001***	0.003***	-0.001**	0.000	-0.002**
	(-3.28)	(1.11)	(-3.59)	(3.16)	(-2.66)	(0.18)	(-2.61)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.19	0.10	0.10	0.10	0.21	0.10	0.14
Number of observations	4,356	4,213	4,001	4,210	4,380	4,359	3,308

Appendix A: Definition of variables

This table presents the description of our key variables used in this study.

Variables	Definition
Board Monitoring	
Board size	Log of number of directors on the board.
Board independence	Percentage of independent directors (IDs) on the board.
Board busyness	Log of number of directors who serve on the board of other firms.
Board busyness (Core et al., 1999)	Dummy variable 1 if the majority of members hold three, or more than three, board appointments in another firm.
Board busyness (Fich and Shivdasani, 2006)	Dummy variable 1 if the majority of IDs serve on three or more other corporate boards.
Board diligence	Mean value across all board members of the ratio of meetings attended to the total meetings held in a year.
Network size	The number of other firms with which the given firm shares common directors.
CEO power	Dummy variable 1 if CEO is the chairman, promoter and the only executive member on the board or else 0.
Alternate CEO power	Dummy variable 1 if CEO is also the chairman of the board and the founder/promoter of the firm.
CEO pay	Log of total compensation (sitting fees, salaries, contributions to provident fund, pension fund, bonus and commission, perquisites, and retirement benefits)
Independent Variables	
Treated	Dummy variable 1 if the firm is in the treatment group or else 0. Treatment group is defined as the firms with "High FIIs" whereas Control group is defined as the firms with "High DIIs". "High FIIs" firms are those in which FIIs' ownership is above the median and "High DIIs" firms are those in which DIIs' ownership is above the median before 2008.
Crisis	Dummy variable 1 for the pre-crisis period (2006-2008) and 0 for the post-crisis period (2009-2011).
$Year_{05-06}$	Dummy variable 1 if a firm-year observation is from year 2005 or 2006
$Year_{07}$	Dummy variable 1 if a firm-year observation is from year 2007
$Year_{08}$	Dummy variable 1 if a firm-year observation is from year 2008
$Year_{09}$	Dummy variable 1 if a firm-year observation is from year 2009
$Year_{10}$	Dummy variable 1 if a firm-year observation is from year 2010
$Year_{11-12}$	Dummy variable 1 if a firm-year observation is from year 2011 or 2012.

Institutional Ownership	
Foreign institutional ownership	Percentage of shares held by foreign institutional investors
Domestic institutional ownership	Percentage of shares held by domestic institutional investors
Other Financial Variables	
Firm size	Log of total assets
Firm age	Log of the age of firms (Incorporation year – year)
Leverage	Ratio of total debt to the shareholders' equity (in %)
STDDEV	One-month standard deviation of daily stock return
Sales	(Log) of total sales revenue
Export	Percentage of export sales revenue to sales revenue
Capital expenses	Total capital expenses scaled by total assets
Firm Performance Variables	
Return on assets	Net income divided by total assets (in %)
Tobin's Q	Ratio of the sum of the book value of debt, book value of preferred stock and market value of the stock to the book value of assets (in times)
Earnings per share	Net profit or (loss) after the deductions of preference divided by the weighted average number of equity shares outstanding scaled by average closing price
PBDITA	Profit before depreciation, interest, taxation and amortization scaled by total assets (in %)
Assets turnover ratio	Ratio of total sales and total assets (in times)
Innovation Variables	
Patent count	Number of patent applications filed in a given fiscal year
R&D	Total research and development expenses scaled by total assets

Appendix B: Robustness tests using a linear probability model

This table reports the results using the probit model. Both the coefficient and the marginal effect calculated using the delta method are reported. The main dependent variables are different proxies of board monitoring coded in binary. See Appendix A for definitions. $Treated_i$ is the dummy variable that takes the value of 1 if the firms are classified as treated firms and 0 if firms are classified as control firms. $Crisis_t$ is also a dummy variable that takes the value of 1 in the post-crisis years (2009-2012) and 0 for the pre-crisis years (2005- 2008); X_{ijt} are control variables; and ε_{ijt} is the error term. We include firm fixed effects and year fixed effects. Treatment group is defined as the firms with "High FIIs" whereas Control group is defined as the firms with "High DIIs". "High FIIs" firms are those in which FIIs' ownership is above the median FIIs' ownership and "High DIIs" firms are those in which DIIs' ownership is above the median DIIs' ownership before 2008. We use PSM with nearest neighborhood of 0.01 caliper using various firm-level characteristics to identify matched control groups. Control variables are defined in Appendix A. Standard errors are clustered at the firm level. In this table, *, ** and *** denote statistical significance at the 10%, 5% and 1% significance level respectively.

	CEO power (1)		Board busyness: Core et al. (1999) (2)		Board busyness: Fich and Shivdasani (2006) (3)		Alternate CEO power (4)	
	Coefficient	Marginal effect	Coefficient	Marginal effect	Coefficient	Marginal effect	Coefficient	Marginal effect
$Treated_i \times Crisis_t$	0.112***	0.043***	0.090**	0.028**	0.193***	0.068***	0.144***	0.022***
	(3.25)	(9.33)	(2.23)	(2.25)	(3.78)	(3.84)	(5.54)	(3.33)
Tobin's Q	0.002		-0.018		-0.002		-0.052***	
	(0.27)		(-1.58)		(-0.26)		(-2.78)	
Firm size	0.054**		0.159***		0.187***		0.084***	
	(2.48)		(15.83)		(15.01)		(7.20)	
ROA	0.218**		0.406*		0.494**		0.537**	
	(2.05)		(1.81)		(2.06)		(2.23)	
Firm age	0.094***		0.245***		0.184***		0.031	
	(4.52)		(5.68)		(6.60)		(1.16)	
Leverage	-0.003		0.008**		0.018**		0.014***	
	(-1.60)		(2.47)		(2.16)		(3.89)	
R&D	-6.810***		-9.106***		-7.552***		-7.583***	
	(-2.78)		(-6.71)		(-4.02)		(-4.07)	
STDDEV	-0.700**		-0.139		-0.674**		0.370	
	(-2.07)		(-0.49)		(-2.45)		(0.91)	
Firm fixed effects	Yes		Yes		Yes		Yes	
Year fixed effects	Yes		Yes		Yes		Yes	
Log likelihood	-157.50		-240.26		-243.82		-218.63	
Number of observations	4,168		4,315		3,904		4,200	