

**Corporate Governance Reform and Risk-Taking: A Quasi-Experiment from an
Emerging Market**

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Corporate Governance and Dividend Policy: The Importance of Personal Liability in Enforcement

Abstract

Does the adoption of corporate governance reform (CGR) substitute higher dividend payouts in mitigating agency problems of free cash flow in emerging markets? Further, does the adequacy of CGR sanctions play any role in explaining the substitution effect of CGR? We answer these questions by exploiting two regulatory shocks in the Indian capital market. The first shock relates to the adoption of CGR with reputational penalties and the second to the additional imposition of personal liability of corporate insiders for non-compliance with CGR. Our results show that firms that are affected by CGR reduce their dividend payouts, on average, by at least 3%. However, this CGR substitution effect is observed only after the imposition of additional personal liability in the form of stricter financial and criminal penalties. Our findings highlight the importance of expanding reputational penalties to include personal liability in regulatory interventions in order to improve the effectiveness of CGR in emerging markets.

Keywords: Dividend payout; corporate governance reform; reputational penalty; personal liability.

1. Introduction

The literature establishes the agency related problem of free cash flow as a major driver of corporate payout policy (Jensen, 1986; La Porta et al., 2000; John et al., 2015). Dividend commitments reduce the free cash flow available at the disposal of controlling insiders, which they may otherwise use for their private benefit. Therefore, by adopting a higher dividend payout policy/ratio (DPR), a firm can establish a reputation with its external shareholders that this agency problem of free cash flow is taken care off (Easterbrook, 1984; Glendening et al., 2016).¹ However, since higher DPR is a costly signal, firms would prefer an alternative mechanism for signalling that they are disciplining the insiders. From a regulatory perspective, introduction of or improvement in mandatory corporate governance rules may thus help discipline the controlling insiders through greater transparency and better corporate scrutiny. Such regulatory reforms therefore should substitute higher DPR (John et al, 2015; Glendening et al., 2016)². We refer to this argument as the *Substitution Hypothesis* and test it in the context of an emerging market.

Emerging markets are an ideal set-up to empirically test the *Substitution Hypothesis* for two important reasons. First, firms in emerging markets, in comparison to their developed market counterparts, face greater conflicts of interest between controlling insiders and minority outsiders as a result of weaker investor protection regimes, concentrated ownerships and the associated higher private benefits at the disposal of corporate insiders (Bertrand et al., 2002; Bekaert and Harvey, 2003; Claessens and Yurtoglu, 2013). This implies that the reputational role of dividends in

¹ However, higher DPR is a costly corporate strategy not only because dividends are post tax, but they also limit the use of internal funds for financing corporate investments (De Angelo et al., 2006; Glendening et al., 2016).

² There is an alternative view that better investor protection is associated with higher ability of minority shareholders to disgorge more free cash in the forms of dividends that managers would otherwise hoard or consume privately. This positive association argument, which is based empirical work of La Porta et al. (2000) predicts complementarity of dividend policy and corporate governance as opposed to our hypothesized substitution between the two variables. Both arguments are plausible. The opposition in these theoretical predictions highlights the importance of empirical investigation.

communicating to external shareholders on the reduction of the agency related free cash flow problem should be particularly relevant in these emerging markets (Pinkowitz et al., 2006). Second, emerging markets face weaker market forces of corporate scrutiny, making regulatory interventions an important policy tool to improve corporate governance practices (Dharmapala and Khanna, 2013). In this study we argue that in an emerging market any regulatory shift in the corporate governance environment through mandatory CGR enforcement could make the reputational role of high DPR less relevant.

As emerging markets seek to advance their capital markets, they often adopt an established CGR framework of developed markets (Martynova and Renneboog, 2011). However, despite this importation of a CGR framework from developed markets, questions have been raised on the effectiveness of enforcement in emerging markets to deter non-compliance and to signal improved corporate governance practices.³ One important way of improving the quality of enforcement is by imposing adequate punishment for violations (Becker, 1968; Dutcher, 2005; Dharmapala and Khanna, 2013). Becker's (1968) model on punishment shows that expanding the severity of punishments for non-compliance has a material effect in improving the quality of regulatory enforcement. In line with this theory, Dharmapala and Khanna (2013) empirically show that the effectiveness of CGR enforcement improves by expanding the severity of CGR sanctions. Therefore, we also investigate whether the adequacy of CGR sanctions plays any role in explaining the substitution of DPR by CGR?

Prior to the year 2000, the Indian corporate governance framework was largely informal (Dharmapala and Khanna, 2013). To compensate for this weaker regulatory regime, Indian firms would often have high DPR to establish their reputation to external shareholders regarding the fair

³ Claessens and Yurtoglu (2013) note that on average, the effectiveness of CGR enforcement in emerging economies is substantially lower in comparison to their developed market peers.

treatment of minority investors.⁴ In the year 2000, India introduced a CGR requiring greater disclosure and board independence in the stock market listing agreement, popularly known as Clause-49, which was based on internationally established CGR. Given this was the first formal set of corporate governance rules in India, we would expect that the firms that were obliged to comply, relative to those who were not, should rely less on DPR as a corporate governance tool in reducing agency costs.

The initial penalty for non-compliance of Clause-49 was delisting from the stock market, which constitutes significant reputational penalties but without any financial and criminal personal liabilities for corporate insiders. However, in the year 2004 the regulators amended another Act called the *Securities Contracts Act of 1956* to introduce Section-23E, which imposes severe financial and criminal penalties for violating the mandatory provisions of Clause-49. We investigate whether the additional imposition of personal liability in the form of financial penalties and criminal charges in the year 2004 has had a greater impact on DPR, relative to the initial reputational penalty introduced by Clause-49 in the year 2000, in providing greater confidence to external shareholders and helping firms to replace DPR as a governance tool.

Using a sample of Indian listed firms from 1997-2007, our difference-in-differences (DiD) estimations provide the following two main findings. First, the introduction of Clause-49 in 2000 seems to have had no causal impact on the DPR of treated firms (firms that need to comply with Clause-49) relative to control group firms (firms that do not need to comply with Clause-49). Second, the Section-23E imposition in the year 2004, however, leads to a significant reduction in the DPR of treated firms compared to control group firms (firms that do not need to comply with Clause-49). In quantitative terms, the treated firms reduce their DPR, on average, by 3% to 5%,

⁴ A survey of CFOs of Indian firms by Anand (2004) shows that they agree that their DPR acts as a signalling mechanism of a firm's performance and better governance. The survey was administered in the year 2001 and is comparable with our study period.

depending on the specification of estimated models. These results are robust to several additional checks, including the use of highly comparable sub-groups, addressing the issue of alternative explanations, and dealing with the potential of false experiment. These findings in an emerging market context are in line with the agency based predictions of DPR (Denis and Osobov, 2008)⁵ and support the Substitution Hypothesis (John et al., 2015; Glendening et al., 2016); however, only when there is a higher possibility of significant enforcement of the CGR provision, a view in line with Becker's (1968) punishment model.

Our study contributes to the following strands of literature. First, to the best of our knowledge, this is the first study to link and test the substitutive effect of CGR and DPR as a governance tool and Becker's (1968) punishment theory within a single institutional set-up. Second, our study also adds to the literature on the legal determinants of DPR (La Porta et al., 2000; Pinkowitz et al., 2006). Specific to emerging markets, studies by Aivazian et al. (2003) and Mitton (2004) show that although firm-level determinants of DPR in emerging markets are similar to those of developed markets, country-level legal and institutional differences are important drivers of DPR in these markets. We show that CGR enforcement is effective in substituting DPR as a governance tool in an emerging market environment.

The rest of the paper is organised as follows. Section 2 briefly describes the characteristics of Clause-49 and the amendment clause Section-23E. Section 3 develops our testable hypotheses. Section 4 describes the sample dataset followed by the discussion of empirical results in section 5. Finally, section 6 concludes the paper.

⁵ In their study on the determinants of DPR of developed market firms, Denis and Osobov (2008) find evidence in support of agency-related life-cycle theory of dividends. Our study, on the other hand, examines how changes of CGR regimes affect a firm's DPR. Given the higher agency conflict of free cash flow between controlling insiders and minority outsiders in emerging economies, our study answers the policy question on the adequacy of CGR sanctions.

2. Clause-49 CGR in India

The mandatory Clause-49 of the stock exchange listing agreement was enacted by the Securities and Exchange Board of India (SEBI), the governing body of listed companies, in February 2000. The provisions of Clause-49 are applicable to a large number of listed companies and were set up to improve the governance of publicly listed Indian firms by imposing greater disclosure requirements and enhancing the independence of boards and audit committees. As shown in Figure 1, Clause-49 had a phased-in implementation schedule – firms with a listing flag “A” (i.e. the largest firms) on the Bombay Stock Exchange (BSE) had to comply by March 31, 2001 (Group 1 firms); companies with paid-up share capital of more than INR 100 million or net worth of more than INR 250 million at any point in time since it was listed needed to comply by March 31, 2002 (Group 2 firms); companies with paid-up share capital of more than INR 30 million had to comply by March 31, 2003 (Group 3 firms). Additionally, firms listed after 2000 for the first time had to comply with the reforms immediately, irrespective of their paid-up capital or net worth. This provides us with a group of firms that did not meet any of the net-worth and/or paid-up capital criteria and thus do not need to comply with the regulation even after 2004. Clearly, from an empirical identification point of view, Clause-49 avails us with an exogenous set of treatment (those that need to comply) and control (those that do not need to comply) groups.

The initial sanctions for violating Clause-49 included the reputational penalty of delisting from the stock exchange. However, in 2004 Section-23E was added to the Securities Contracts (Regulation) Act of 1956 which imposed severe financial and criminal penalties on insiders for non-compliance of Clause-49 (up to INR 250 million financial liability for violation and also makes insiders personally liable for non-compliance).

Figure 1 about here

Appendix 1 provides a brief description of major provisions of Clause-49 regulation. From this we identify three provisions in Clause-49 that could influence DPR by providing greater assurance to external shareholders of the improvements in the governance quality of listed firms; these are: board independence, independence of audit committees, and certification by CEO/CFO. Firstly, independent directors are valued by shareholders as they can prevent insiders from diverting cash flows (Nguyen and Nielsen, 2010; Claessens and Yurtoglu, 2013). Clause-49 provision requires that 50% of board directors be independent in the case where the Chairman is the executive director and one third if the Chairman is a non-executive. Therefore, it is apparent that Clause-49 increases board independence for affected Indian companies. This regulation also increases the marginal value of board of directors by assigning them crucial roles, such as sitting on audit committees. Secondly, Clause-49 requires an audit committee with a minimum of three directors, two of which are required to be independent and at least one with experience in financial management, thereby expanding the independence of the audit committee. The third important provision in Clause-49 related to DPR is the CEO/CFO certification of financial statements, which expands the personal accountability of insiders/managers in the case of non-compliance. Taken together, these three mandatory provisions should provide external shareholders with greater confidence in accepting the intended improvements in governance quality and allow firms to substitute DPR as a governance tool; this leads us into our empirical hypotheses in the next section.

3. Empirical Hypotheses

In this section, we develop two testable hypotheses on the relationship between CGR and DPR. The first relates to the effect of the adoption of Clause-49 in 2000 on DPR and the second states the impact of the subsequent imposition of financial and criminal penalties in Section-23E in 2004 on DPR.

3.1. Enforcement of Clause-49 and the Substitution Hypothesis between CGR and DPR

The *Substitution Hypothesis* of corporate payout policy suggests that CGR and DPR act as substitutes for each other in reducing the agency costs of free cash flow. With weaker external corporate governance, firms are motivated to pay higher DPR to establish a reputation of being fair to minority investors (Easterbrook, 1984; La Porta et al., 2000; Glendening et al., 2016). Higher DPR is associated with a reputation that may help firms achieve easier access to external capital (La Porta et al., 2000), and be rewarded with higher market valuation in a weaker investor protection regime (Pinkowitz et al., 2006). However, higher DPR is a costly strategy as this reduces the internal funding available for financing value-relevant corporate investments (DeAngelo et al., 2006; Caton et al., 2016; Glendening et al., 2016). A firm would, therefore, prefer an alternative mechanism of disciplining the insiders to high DPR (Caton et al., 2016; Glendening et al., 2016).⁶ Since the corporate governance environment in India was largely informal prior to the introduction of Clause-49, the mandatory CGR of 2000 should enhance external shareholders' confidence in accepting the improved corporate governance practices of affected firms. Following the Substitution Hypothesis, we suggest that this should induce significant reductions in the DPR of affected firms (treated group) relative to the firms not affected by the change (control group). We propose the following testable hypothesis:

H₁: Following the introduction of Clause-49 in 2000, firms affected by this clause reduce their DPR more than the unaffected firms.

⁶ In support of this substitution argument, Glendening et al. (2016) examine the intertemporal changes in M&A laws from 34 countries and show that improvement of market of corporate control substitutes dividend payouts as a corporate disciplining tool.

3.2. Expansion of harsher sanctions and the effect of CGR on DPR

Studies suggest that even though emerging economies have increasingly adopted the established corporate governance frameworks of developed markets, the quality of the legal and enforcement environments is the ultimate differentiating factor of these economies (La Porta et al., 2006; Martynova and Renneboog, 2011). To this end, the effectiveness of regulatory intervention, particularly for evolving regulatory regimes of emerging markets, depends on the severity of punishment associated with non-compliance (Becker, 1968; Dutcher, 2005). Becker (1968) theorizes that an insider's complying behaviour depends on his view on the probability that non-compliance is detected and prosecuted, and the size and severity of the expected punishments in the event of detection of violations. Similarly, Dutcher (2005) contends that only sanctions that introduce substantial criminal and financial penalties can adequately deter corporate non-compliance. Also, Dharmapala and Khanna (2013) show that stricter financial and criminal penalties work more effectively in bringing about the positive effects of CGR enforcement in the emerging market context of India.⁷ In line with this argument, we suggest that it is not the adoption of CGR with reputational penalties of stock-delisting alone, but the accompanying expansion of personal liability of corporate insiders and management teams through the imposition of stricter penalties in Section-23E that could provide an improvement in corporate governance practices. With more severe penalties, we expect the Indian firms affected by the clause to reduce their DPR as higher dividends are now less required to convey the alignment of interest, which is now conveyed through the compliance of CGR. Therefore, we test our second hypothesis (H_2) to capture the effect of personal and financial enforcement sanctions on the Substitution Hypothesis:

⁷ Karpoff et al. (2005) support the view of criminal penalties over reputational penalties in environmental violations.

H₂: Following the enforcement of Section-23E in 2004, the affected firms reduce their DPR to a greater extent than their control counterparts.

There are however, other studies that show reputational penalties are economically large enough to ensure compliance when compared to private penalties and therefore private penalties may be ineffective and unnecessary (Karpoff and Lott, 1993; Siegel, 2005).⁸ If this argument holds, the adoption of CGR in 2000, which introduced the reputational penalties of stock-delisting, should provide adequate punishment to ensure compliance and provide external shareholders with sufficient assurance, supporting hypothesis 1. On the other hand, if the expansion of personal liability through Section-23E is more effective than the introduction of CGR in Clause-49, then we would expect the substitution effect of CGR on DPR to be stronger in the case of testing H_2 relative to H_1 .

4. Data and Variables

4.1. Sample Data

The sample used in this study is obtained from Prowess, a database maintained by the Center for Monitoring the Indian Economy. Prowess reports a comprehensive set of firm-level financial and market based variables for both publicly-listed and unlisted Indian companies.⁹ Our sample includes 3092 firms with 21,932 firm-year observations of listed firms over the period of 1997-2007. Our sample period is divided into two sub-periods. The first period ranges from 1997-2002 and the second covers 2002-2007. The first sub-period is intended to measure the introduction effect of Clause-49 in 2000 and the second sub-period captures the impact of the harsher sanctions of

⁸ Gneezy and Rustichini (2000) find that monetary fines can increase non-compliance, contrary to the intended higher compliance.

⁹ The database has been used by a number of recent studies on Indian firms, including Lilienfeld-Toal et al. (2012), Vig (2013) and Gopalan et al. (2016).

Section-23E of 2004. We exclude the financial and utilities firms as they follow different financial reporting standards, and both their DPR and access to external capital markets are regulated (Renneboog and Trojanowski, 2011). We also remove firms listed after 2000 as they were affected by Clause-49 immediately after listing and therefore we do not have matching pre-CGR enforcement data for these firms. We use the yearly panel with the fiscal year ending March 31st.

4.2. Variables

Table 1 summarizes the variables and how they are constructed. Our dependent variable of interest is DPR, which is the ratio of the sum of common and interim dividends to profit after tax. Our first variable of interest is the interaction of categorical variables TREAT and AFTER_CL49 where TREAT is an indicator variable, which takes the value of one if a firm is affected by the reform and zero otherwise, and AFTER_CL49 is a time variable which takes the value of one for years following the introduction of Clause-49 in the year 2000 to the latest of year 2004, and zero otherwise. Specifically, AFTER_CL49 takes the value of one in the years 2001 and onwards for Group 1 firms, in the years 2002 and onwards for Group 2 firms, and in the years 2003 and onwards for Group 3 firms respectively. We limit the post-Clause-49 period to the year 2004 as Section-23E is imposed from October 2004. We define the interaction dummy as *DID_CL49* in our regressions. The second variable of interest is the interaction of variables TREAT and AFTER_S23E, where AFTER_S23E is a time dummy which takes the value of one from the year 2005, i.e. after the year (2004), and zero otherwise. We denote this interaction variable as *DID_S23E* in our empirical specifications. Our treated group is comprised of firms from Groups 1, 2 and 3, as discussed in Section 2. Our control group consists of Group 4 firms, which have paid-up equity capital of less than INR 30 million and thus are not subject to Clause-49. Given the applicability of Clause-49 is based on the size of firms who qualify to use the rules, we deal with the size issue in our tests.

Studies show that the size of a firm can play a key role in a firm's DPR (Denis and Osobov, 2008). Fama and French (2001) report that firm size has a positive impact on dividends as larger firms tend to have higher DPR. However, owing to the scale effect, DPR can be negatively related to size. We measure firm *Size* by taking the natural log of the market value of equity.¹⁰

Table 1 about here

Following previous empirical studies, we also incorporate a number of other controls. We control for a firm's capital structure (*Leverage*) as DPR can be influenced by financial constraints. The financial constraints argument suggests a positive relation between leverage and DPR. However, Brockman and Unlu (2009) argue that firms with higher leverage pay lower dividends as creditors can pressurise managers to reduce DPR and use their cash flows to service their debt instead. We measure leverage as the ratio of net liabilities to total assets.

We also control for firm's growth opportunities and profitability. We proxy growth opportunity by Tobin's Q as growing firms is expected to have higher market valuation against their book-size because of higher present value of expected future cash flows. It is argued that firms with higher growth prospects should pay lower dividends, as managers with higher growth opportunities are expected to invest the proceeds of the firm into positive net present value projects, indicating a negative relationship between growth and DPR (Chay and Suh, 2009). However, a positive association is equally likely as dividends send better signals to the market, especially in emerging markets with a weaker information environment, the signalling hypothesis would also suggest that higher DPR can be associated with higher valuation. For instance, Pinkowitz et al. (2006) find that the relationship between DPR and firm value is stronger in countries with weaker

¹⁰ Although the literature establishes cash flow as an important determinant of Dividend policy, we do not add cash flow as an additional control in our empirical model because of its strong correlation (+0.89) with *Size*. However, the results remain unchanged if we add Cash flow to the main regression.

investor protection. Tobin's Q is computed as the ratio of the sum of total liabilities, book value of preferred stock and market value of equity to the book value of total assets. We use the book value, rather than the market value of preferred stock, because preference shares are traded very thinly in the Indian market in the study period. Similarly, expected relation of profitability and DPR is both, positive or negative. Higher profitability can be associated with higher payouts (Glendening et al., 2016). Alternatively, negative association of profitability with DPR might indicate the agency conflicts between controlling insiders and minority outsiders (Young et al., 2008). We gauge profitability with return on assets (ROA) which is computed as the natural logarithm of the ratio of earnings, before depreciation, interest and taxes, to the book value of total assets.

We control for volatility by computing yearly standard deviation as the natural log of the daily stock returns. As riskier firms are likely to offer lower dividends, because of the perceived uncertainty of their profits and their overall performance in the market, the expected sign of this variable is negative (John and Knyazeva, 2006). We also control for the possible role of institutional investors: both foreign and domestic. The literature argues that these investors actively monitor corporations worldwide. When their holdings are large they can pressurise management to pay higher DPR, thus limiting managers' scope to divert cash flows to themselves (Khanna and Palepu, 2000; Grinstein and Michaely, 2005; Ferreira and Matos, 2008). We include the percentage of company's stock held by foreign institutional investors (FII). However, it is argued that their domestic counterparts often side with the managers and do not compel them to pay higher dividends (Ferreira and Matos, 2008). As such, we also incorporate the percentage of company's stock held by domestic institutional investors (DII).

We also take account of the potential role of share buybacks in explaining DPR. Share repurchases are increasingly viewed as viable substitutes of cash dividends, due to the tax advantage of capital gains in many jurisdictions. By opting for share repurchases, investors can delay the

realization of any capital gains and subsequently the payment of taxes on these gains (Grullon and Michaely, 2002). We control for share buybacks by creating a categorical variable which takes the value of one if the firm has any repurchase activity and zero otherwise. Following Grinstein and Michaely (2005), we compute “Repurchase Activity” as the ratio of the nominal amount of repurchased equity to the book value of assets.

Finally, we control for firm fixed effects, year fixed effects and firm-specific trends in DPR.¹¹ To minimise the influence of obvious outliers, we winsorize all firm fundamentals at the 5% and 95% level.

5. Empirical Results

We begin by exploring the summary figures, followed by examining the yearly average DPR over the sample period. Following this we present the univariate and multivariate DiD estimations.

5.1. Summary Statistics

Table 2 reports the summary statistics of the dependent and the control variables. Panel A presents summary statistics for the entire study period from 1997 to 2007 and panels B, C and D describe the variables for the pre-introduction period (1997-1999), post-Clause-49 introduction period (2000-2003) and post-23E sanction period (2005-2007) respectively. Panels A, B and C show that the median firm pays zero dividends after 2000. There is an overall decreasing pattern in DPR over the period (0.20 in sub-period 1997-1999, 0.17 in sub-period 2000-2003 and 0.13 in sub-period 2005-2007). One possible explanation for the overall fall is the introduction of the Dividend Distribution Tax (DDT) which taxes the issuing companies, instead of investors, on any paid-out

¹¹ Controlling for firm-specific trends, besides firm and year fixed effects, is important because of the difference in our treated groups (large and medium sized firms) and unaffected smaller firms in which there remains a possibility of a difference in time trends in DPR driving our results, as opposed to our hypothesized effect of CGR.

cash dividends during a given year (PwC, 2017) and the M&A law (Glendening et al., 2016) both introduced in 1997. Similarly, in comparison to 1997-1999, Tobin's Q shows a slight decrease in the sub-period of 2000-2003 (0.89 to 0.86) but an increase in the post 23E period to 1.34. Volatility increases after 2005 (from 0.03 to 0.04). The institutional ownership (FII and DII) in our sample firms also shows an increase over time.¹² In summary, we observe a general decline in DPR after CGR was introduced in 2000.

Table 2 about here

5.2. Trend of Yearly Average DPR

In addition to the summary statistics, we plot yearly average DPRs of both the treated and control groups to examine the general DPR trends between treated and control firms. While figure 2 plots annual average DPRs of treated and control firms for a six-year period around the adoption of Clause-49 in the year 2000 (i.e. between 1997 and 2002), figure 3 depicts annual average DPRs around the imposition of Section-23E in the year 2004 (i.e. between 2002 and 2007). Although we observe a general decline in DPR over the years in Figure 2, we do not see any change in the DPR trend of treated and control firms following the introduction of 2000 CGR; they move nearly parallel to each other. This suggests that any factor causing the decline affected both groups identically. However, Figure 3 shows that in comparison to the control firms that exhibit a trend similar to the pre-2004 period, the DPR of treated firms displays a sharp decline following the 2004 sanctions (Section-23E). This supports our hypothesis that one of the key forces driving this systematic differential trend in DPR between the treated and control group firms is the improvement

¹² FII has the least number of observations, which is primarily because there are no data available on this variable prior to 2000.

in the corporate governance environment resulting from the introduction of the harsher personal liabilities for the non-compliance of Clause-49 in 2004.

Figure 2 about here

Figure 3 about here

5.3. Univariate DiD Analysis

Table 3 presents the univariate analysis for the two periods: introduction of Clause-49 and imposition of Section-23E. Panel A reports three years before and three years after average of DPR of both the treated and control group firms following the introduction of Clause-49 reform.¹³ The change in DPR of treated firms (0.15%) and control firms (-0.49%) is statistically and economically insignificant. Similarly, the univariate DiD (0.64%) is statistically insignificant and economically immaterial. In summary, the univariate DiD estimates in Panel A indicate that the introduction of Clause-49 may not have any effect on the treated firms' DPR relative to control firms. One possible explanation is that the CGR of 2000 fails to have a DPR substitution effect because reputational penalties alone do not seem to be sufficient to force the firms to comply with and/or give confidence to external shareholders that the firms are complying with the provisions of Clause-49.

In Panel B of Table 3, which covers the Section-23E imposition, we find a very slight and statistically insignificant decrease in the DPR of the control firms (-0.71%). However, in contrast, the treated firms' DPR falls by 2.72% and is statistically significant at the 1% level. The univariate DiD in DPR between the two groups is negative (-2.01%) which is economically meaningful and

¹³ The three-year pre and postClause-49 adoption periods are different for different groups. Pre-Clause-49 adoption period includes years 1998 to 2000 for Group 1, years 1999 to 2001 for Group 2 and years 2000 to 2003 for Group 3 firms respectively. Similarly, post-Clause-49 adoption period includes years 2001 to 2003 for Group 1, years 2002 to 2004 for Group 2 and year 2003 to 2004 for Group 3 firms. As Section-23E is imposed in October 2004, the post-Clause-49 period is limited to the latest of year 2004 because of which we report only two years post-Clause-49 adoption for Group 3 firms. Post-Clause-49 period for Group 4 (control) firms is taken for years 2003 and 2004, similar to those for Group-3 firms for comparison purpose.

statistically significant. These results lend support to our second hypothesis that the threat of Section-23E's harsher personal penalties for violating Clause-49 has led to a decline in the treated firms' DPR since outside external shareholders now seem to be exhibiting greater trust in the possibility of compliance with the CGR and improvement in governance quality.

Table 3 about here

5.4. *Multivariate DiD Regressions*

In testing our hypotheses, we use two empirical specifications. The first, as shown in Equation 1, covers the CGR introduction period of 2000, i.e. sample ranges from 1997-2004:

$$DPR_{it} = \alpha + \beta.Treat_i.After_CL49_t + X_{i,t-1}.\delta + \gamma_i + \tau_t + g_it + e_{it} \quad (1)$$

where DPR is the dividend payout ratio for firm i in year t , $Treat_i$ is a categorical variable that takes the value of one for firms affected by Clause-49 and $After_CL49_t$ is a dummy that takes the value of one for years after Clause-49 adoption to the latest of 2004 and zero otherwise. $X_{i,t-1}$ are one-period lagged control variables as defined in Table 1 and discussed in section 4.2. The firm- and year-fixed effects are denoted by γ_i and τ_t respectively. g_it represents the firm-specific time trend in DPR, where g_i is the growth rate of DPR given by difference between $DPR_{i,t}$ and $DPR_{i,t-1}$ scaled by $DPR_{i,t-1}$, $t = (1, 2, \dots, N)$ is the linear trend variable for the period from 1997 to 2007, and e_{it} is a random error term.¹⁴

Our second model covers the enforcement period of 2004, i.e. from 2002-2007, as presented in Equation 2:

$$DPR_{it} = \alpha + \beta.Treat_i.After_S23E_t + X_{i,t-1}.\delta + \gamma_i + \tau_t + g_it + e_{it} \quad (2)$$

¹⁴ Since the data for FII and DII are only available after 2001, we are unable to control for including them in equation (1).

Here our main variable of interest is the interaction term, $Treat_i \cdot After_{S23E_t}$, where $After_{S23E_t}$ is a dummy that takes the value of one for years after 2004 and zero otherwise. In addition to the above stated controls, we now include FII and DII in the set of controls. The standard errors of all estimations throughout this study are clustered at firm levels. The results from the two empirical models (Equations 1 and 2) are reported in Table 4.

Table 4 about here

Columns [1] and [2] report regression outputs without and with control variables from equation (1) whereas columns [3] and [4] report those from equation (2) respectively. As we see in columns [1] and [2], the coefficients of Clause-49 adoption are not statistically significant, indicating that the introduction of the CGR with reputational penalties does not have any impact on DPR. This result is inconsistent with hypothesis 1 and the dividend substitution conjecture that CGR replaces DPR as a governance mechanism (John et al., 2015; Glendening et al., 2016). This result could suggest that, with only delisting as sanctions in an emerging market with a weaker legal environment, the costs of complying with the CGR are greater than the costs of continuing with high DPR. Alternatively, they might not believe that external shareholders will accept this CGR with only reputational penalties as a signal of increased governance quality, even when the firms fully comply with the new regulation.

However, when we consider the impact of Section-23E, we find that the coefficients of DiD_{S23E} for the year 2004 are significantly negative (at 1% level) as reported in columns ([3] and [4]), offering support for hypothesis 2. In terms of economic magnitude, the results show a decrease of DPR of 3% to 5% in the treated firms relative to the control firms. This result highlights the relevance of imposing additional personal penalties on corporate insiders for the violation of CGR provisions in emerging markets. Even though regulatory provisions in an emerging market

imported from a developed market are intended to substitute internal corporate governance tools, the outside investors and external shareholders are convinced of the improvement in governance enforcement only when CGR is accompanied by the imposition of stringent personal penalties for violation of CGR provisions, consistent with Becker's (1968) punishment argument.

In terms of the effect of control variables, Size and ROA are consistent in explaining the negative effect on DPR in our sample firms. The negative coefficient of ROA indicates the prevalent agency conflicts in the wake of weaker protection of minority shareholder (Young et al., 2008). The moderately positive coefficient of Tobin's Q (significant at 10%) indicates that firms with higher DPR are valued higher in the sample firms for the study period, consistent with Pinkowitz et al. (2006). Similarly, the effect of FII is moderately positive (significant at 10%), suggesting that higher foreign investors are associated with higher DPR (Khanna and Palepu, 2000; Grinstein and Michaely, 2005; Ferreira and Matos, 2008). Other control variables are statistically insignificant; however, the signs of the coefficients are generally consistent with their theoretical predictions.

5.5. Addressing Comparability of Treated and Control Groups

One concern of our multivariate DiD regressions in Table 4 is the comparability issue as the treated firms are by construction larger in size in comparison to control firms. In our previous estimations we deal with this by including the size variable. We further address this issue by constructing comparable sub-samples of treated and control group firms. To do this we use the provision of Clause-49 which exogenously divides Indian firms into four different groups, identified in section 2.¹⁵ We present firms' characteristics (control variables) pre-Section-23E sanctions (2002-2004) in Table 5 to identify comparable firms.

¹⁵ Group 1 firms are large-cap companies listed as flag "A" category in the Bombay Stock Exchange Ltd. (BSE). Group 2 firms are mid-cap companies that have paid-up capital greater than INR 100 million or net-worth greater than or equal

Table 5 about here

Table 5 (columns 2, 3, 4 and 5) shows the treated firms (Groups 1, 2, 3 and combined) are larger in comparison to their control counterparts. Specifically, within treated firms, Group 1 firms are larger firms, Group 2 are medium-sized companies whereas Group 3 firms are small-sized firms. Group 4 firms are small-sized control group firms not affected by Clause-49. Table 5 shows that Groups 3 and 4 are very similar in size, ROA and Tobin's Q. Groups 2 and 4 are comparable firms in their leverage. We therefore construct two sub-samples of treated firms. The first is a size-matched sub-sample of Group 3 as the treated group and Group 4 as the control group. The second is a leverage-matched, treated sub-sample with Group 2 as the treated group and Group 4 as the control group. We conduct separate tests of our two hypotheses in which we restrict our analysis to only those two comparable groups of firms. The results are reported in Table 6.

Table 6 about here

Columns 1 and 2 of Table 6 report the regression results of size-matched sub-samples whereas columns 3 and 4 report leverage-matched sub-samples. Columns 1 and 3 correspond to the period of adoption of Clause-49 (i.e. 1997-2004), and columns 2 and 4 analyse the period of Section-23E (2002-2007). The results for Clause-49 remain unchanged from Table 4, i.e. Clause-49 fails to show an impact on DPR rejecting hypothesis 1. However, for Section-23E the results are significant and economically stronger than the results of Table 4, showing a reduction of around 6% for size-matched firms and 5% for leverage-matched firms in the treated firms' DPR, providing further support for hypothesis 2.

to INR 250 million. Group 3 firms are low-cap firms that have paid-up capital between INR 100 million and INR 30 million. Group 4 are control firms with paid-up capital less than INR 30 million. As defined in section 4, Groups 1-3 are subject to Clause-49 (treated group), whereas Group 4 is not (control group).

5.6 Further Robustness Checks

In this section we undertake a number of robustness checks to ensure that the results for the Section-23E estimation are robust when we address various concerns.

5.6.1. False Experiments Test

We suggest that the decline in the DPR of the treated firms can be attributed, at least in part, to Section-23E. However, this claim assumes that there are no important confounding events around 2004 that might have had an impact on DPR. We therefore set up two false experiments, or placebo events, where we assume that Section-23E was enforced in October 2003 and 2005 respectively, instead of 2004. If there are any confounding events before or after 2004 that have a strong effect on DPR, we would expect these false experiments to show a significant effect, such as those reported for the year 2004.

The estimated effects, reported in Columns 1 and 2 of Table 7, show that both events are statistically insignificant. To limit any spill-over effects from the true experiment of 2004, we run alternative checks by using only one year before and after the alternative enforcements of 2003 and 2005 – the DiD coefficients remain indistinguishable from zero. Essentially, the insignificance of the two false experiments reinforces the argument that it is Section-23E that has a negative impact on DPR.

Table 7 about here

5.6.2. Shorter Sub-period for Section-23E

Our initial results from Table 6 use a three-year period around the enforcement of Section-23E, which might capture additional effects or events that occurred close to the enforcement year. Even though the false experiments provide some support for believing that this is not the case, we use an alternative regression using a shorter period of two years before and after the enforcement

of 2004 (i.e. 2003-2006). The DiD coefficient, as reported in Column 3 of Table 7, becomes significantly negative, even stronger in economic magnitude (a decline of 10%) in comparison to the three-year period in Table 4.

5.6.3. First Difference Regression

To further eliminate the role of unobservable factors explaining changes in DPR, in Column 4 of Table 6, we follow Dharmapala and Khanna (2013) and report the estimation using the first-differenced model of Equation 2, as expressed in Equation 3:

$$\Delta DPR_{it} = \beta \Delta Treat_i \cdot After_S23E_t + \Delta X_{i,t-1} \cdot \delta + \tau_t + g_i + e_{it} \quad (3)$$

where $\Delta DPR_{it} = DPR_{it} - DPR_{i,t-1}$; $\Delta X_{i,t-1}$ is a vector of control variables in difference form; g_i captures the firm-specific trend in DPR; τ_t is the year effect and e_{it} is the error term. The DiD coefficient in Table 7 (Column 4) points to a statistically significant decrease of 9% in the treated firms' DPRs following the enforcement of Section-23E, which further supports our second hypothesis. The results from the first-differenced model remain robust to conducting the regression with only the sub-sample of highly comparable treated and control groups (results available from the authors on request).

5.6.4. Self-selection Issue

The self-selection problem in which firms can endogenously selected themselves to be affected or remain unaffected can undermine our empirical estimation. However, the applicability of Clause-49 is backward looking. For instance, if a firm has met the paid-up capital criteria at any point in the past, it is required to adhere to Clause-49 provisions, even if it does not fall within the compliance bracket during the enforcement year. This helps reduce the possibility of the self-

selection of firms lowering their paid-up equity capital to avoid Clause-49 regulation. However, this provision does not rule out the possibility of firms increasing their paid-up equity capital to be affected by Clause-49. We therefore examine the stability of the paid-up equity capital of the firms used in our empirical design and find it is highly stable for the study period, consistent with Dharmapala and Khanna (2013). In an unreported table, we eliminate firms that changed their paid-up equity capital and re-run empirical estimations. The results from this sub-sample are consistent with our main results in Table 4 (available from the authors on request).

5.6.5. *Other Issues*

One possible issue is that the DPR includes both interim and final dividends, which have different signalling characteristics and most studies exclude the interim dividends when analysing dividend policy (La Porta et al., 2000; Chen et al., 2014). Even though interim dividends are less frequently reported, they can signal to investors the potential payoff of the stock at the terminal date (Chen et al., 2014). When we include the interim dividends, we are therefore effectively adding an additional amount of public information to our model. Nevertheless, we find that the effect of the stricter penalties remains significant, even after excluding the interim dividends.

Another feature of firms in emerging economies is that these firms can respond to the weak domestic regulatory environment by cross-listing into better-developed stock markets with stricter governance regulations. We identify a list of Indian firms that have cross-listed into Europe or the U.S. through the issuance of depositary receipts¹⁶ and our results are robust to the omission of these firms from the dataset.

Finally, concern with the enforceability of the CGR event of 2004 in our setting, as is true with many other emerging economies, is that the sanctions could still struggle to translate from

¹⁶ The list of cross-listed Indian firms is obtained from www.adr.com (operated by JP Morgan Chase and Thomson Financial) and <https://www.adrbnymellon.com/directory/dr-directory> (operated by The Bank of New York Mellon).

provision to practice with the existence of a weaker enforcement environment. This can undermine the credibility of our inference. However, the legal set-up for Clause-49 was such that enforcement under Section-23E would occur in the first instance by the SEBI, with a potential appeal to the Securities Appellate Tribunal (a body formed to deal with securities laws issues and which addresses SEBI appeals), and followed by a final appeal to the Supreme Court. Reports suggest that the number (turnaround time) of settled cases on enforcement decisions has been increasing (decreasing) in the post enforcement periods on issues enforced by SEBI and the Securities Appellate Tribunal.¹⁷ Similarly, Balasubramanian et al. (2010) find that the majority of Clause-49 affected firms have complied with Clause-49 provisions in the post enforcement period.¹⁸ Taken together, Clause-49 was introduced with a reasonably clear system for the prompt handling of cases for non-compliance, providing a credible improvement in the likelihood of enforcement.

6. Conclusion

The 'Substitution Hypothesis' of dividend policy suggests that mandatory regulatory provisions of CGR through reputational penalties could reduce the agency cost of free cash flow and therefore could substitute higher DPR as a governance tool. However, the literature also suggests that in the face of inadequate penalties, particularly in emerging markets, CGR with reputational penalties alone may not yield the expected substitution effect on DPR. The substitution effect on DPR could manifest itself only after the expansion of the personal liability of corporate insiders/managers in the form of harsher criminal and financial penalties that would adequately induce higher CGR compliance. We test the substitution effect of CGR on dividend policy by exploiting two corporate governance regulatory shocks in the Indian emerging market. The first

¹⁷ Evidence can be found in reports such as Securities and Exchange of Board of India, Handbook of Statistics on the Indian Securities Market 2008, pp. 66-71 and SEBI, Annual Report 2007-08, pp. 103-114, 119-129.

¹⁸ Balasubramanian et al. (2010) find that on an average there has been greater compliance with provisions of Clause-49; however, the compliance is far from universal.

regulatory shock in the year 2000 relates to the introduction of mandatory provisions of greater disclosure and board independence in their stock market listing agreement, popularly known as called Clause-49. Since the penalty for non-compliance was delisting, this imposed a reputational penalty when introduced. However, in the year 2004 the regulators further introduced Section-23E which imposed additional severe financial and criminal penalties for corporate insiders for violating Clause-49.

We use the DiD method by exploiting both the regulatory shocks that exogenously generate treated and control firms. Using a sample of all listed firms spanning 1997-2007, our study shows that the introduction of Clause-49, which imposed reputational penalty in the year 2000, does not have any impact on the treated firms' dividend policies. However, the accompanying imposition of severe personal penalties on the corporate insiders in the form of economically large monetary fines and criminal charges in 2004 led to a material fall in the DPR of the treated firms. These findings are robust to series of robustness checks. The outcomes of our examination support dividend Substitution Hypothesis, indicating that firms replace their dividend policies as governance tools but only after adequate penalties for deterring non-compliance are imposed. Our study supports the view that expanding personal accountability to corporate decision makers is central to improving the effectiveness of CGR enforcements in an emerging market context.

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Table 1. List of the Variables

This table shows the construction of the variables. Explanations are provided in the description of the variables in the text.

Variables		Source
Dependent Variable		
DPR	= (Sum of Interim and final Dividends)/Profit after Tax	Derived from CMIE
Independent Variables		
DiD_CL49	= TREAT*AFTER_CL49	Own Calculation
DiD_S23E	= TREAT*AFTER_S23E	Own Calculation
Control Variables		
Size	= ln (market value of equity)	Derived from CMIE
Leverage	= $\frac{\text{Net Total Liabilities}}{\text{Total Assets}}$	Derived from CMIE
ROA	= $\ln\left(1 + \frac{\text{PBDITA}}{\text{Total Assets}}\right)$	Derived from CMIE
Tobin's Q	= $\frac{\text{Total debt} + \text{BV(Preferred Stock)} + \text{MV(Equity)}}{\text{BV(Total Assets)}}$	Derived from CMIE
VOLATILITY	= 365-day average of standard deviation of natural log of daily stock returns	Derived from CMIE
FII	= % Shares held by: foreign corporate bodies, foreign institutions, qualified foreign institutions, foreign venture capital funds	Derived from CMIE
DII	= % Shares held by: Indian corporate bodies; financial institutions and banks; mutual funds; insurance	Derived from CMIE
Buy-back	= 1 if firm has any repurchase activity and 0 otherwise	Derived from CMIE
Firm-specific trends in DPR	= $g_i * t$	Derived from CMIE
Ancillary variables		
<i>Groups of Firms</i>		Derived from CMIE
Group 1	= Firms listed with a listing flag "A" on BSE.	
Group 2	= Listed firms with paid-up equity capital of at least INR 100 Million or net-worth of 250 million as or before of 31 March 2002.	
Group 3	= Listed firms with paid-up equity capital of INR 30 million or above and < INR 100 Million as or before 31 March 2003.	
Group 4	= Listed Firms with paid-up equity capital of INR less than 30 million as or before 31 March 2003.	
Treated and Control Firms		
Treated firm \in (Group 1 or Group 2 or Group 3); Control firm \in (Group 4)		Derived from CMIE
TREAT	= 1 if a firm is treated (affected) by Clause-49 and 0 otherwise	Derived from CMIE
AFTER_CL49	= 1 if year \geq Caluse-49 adoption year to the latest of 2004 and 0 otherwise.	Derived from CMIE
AFTER_CL49	= 1 if year \geq 2001 for Group 1 firms	
AFTER_CL49	= 1 if year \geq 2002 for Group 2 firms	
AFTER_CL49	= 1 if year \geq 2003 for Group 3 firms	
AFTER_S23E	= 1 if year > 2004 and 0 otherwise	Derived from CMIE
Net Total Liabilities account	= Total Liabilities – Total Capital – Reserves and Funds – Share application money and suspense	Derived from CMIE
Book Value (Equity)	= Total Assets – Net Total Liabilities	Derived from CMIE
Market Value (Equity)	= (365-days average of daily stock price) \times (365-days average of number of shares outstanding)	Derived from CMIE
g_i	= firm-specific growth in DPR = $\frac{DPR_{i,t} - DPR_{i,t-1}}{DPR_{i,t-1}}$	Derived from CMIE

Table 2: Summary Statistics

This table shows the summary statistics (number of observations, mean, median, standard deviation, minimum and maximum values) of all the variables used in the analysis. Panel A reports summary statistics of variables for the entire study period (1997-2007), whereas panels B to D report those for sub-periods including pre-Clause-49 period (1997-1999), post-Clause-49 period (2000-2004) and post-Section-23E sanction period (2005-2007) respectively. DPR is calculated by dividing the sum of the interim and final dividends by the profit after tax. Size is calculated taking the natural logarithm of the market value of equity. Leverage is the ratio of net liabilities to total assets. ROA is computed as a natural logarithm of the ratio of earnings before depreciation, interest and taxes to the book value of total assets. Tobin's Q is the ratio of the sum of total liabilities, book value of preferred stock and market value of equity to the book value of total assets. Volatility is the yearly standard deviation of the natural log of daily stock returns. FII is the percentage of firm's stock held by foreign institutional investors. DII incorporates the percentage of firm's stock held by domestic institutional investors. Buy-back dummy takes the value of one if the firm has any share repurchase activity in a given year, zero otherwise. Calculations of the variables are described in Table 1. Source: CMIE.

	Count	Mean	Median	St. dev	Min	Max
Panel A (1997-2007)						
DPR	21932	0.17	0.00	0.25	0.00	1.27
Size	16384	5.36	5.12	1.99	2.08	9.17
Leverage	21932	0.54	0.55	0.29	0.04	2.04
ROA	21932	0.13	0.12	0.06	0.00	0.24
Tobin's Q	21932	1.01	0.82	0.71	0.12	3.33
Volatility	16068	0.07	0.05	0.06	0.02	0.29
FII	4146	0.06	0.01	0.09	0.00	0.34
DII	9131	0.12	0.05	0.16	0.00	0.53
Buy-back dummy	21932	0.01	0.00	0.09	0.00	1.00
Panel B (1997-1999)						
DPR	7875	0.20	0.10	0.27	0.00	1.27
Size	6293	4.85	4.52	1.86	2.08	9.17
Leverage	7875	0.52	0.54	0.23	0.04	2.04
ROA	7875	0.13	0.12	0.06	0.00	0.24
Tobin's Q	7875	0.89	0.76	0.61	0.12	3.33
Volatility	6160	0.10	0.06	0.08	0.02	0.29
FII	-	-	-	-	-	-
DII	-	-	-	-	-	-
Buy-back dummy	7875	0.00	0.00	0.04	0.00	1.00
Panel C (2000-2004)						
DPR	7780	0.17	0.00	0.25	0.00	1.27
Size	5400	5.16	4.87	1.96	2.08	9.17
Leverage	7780	0.53	0.55	0.29	0.04	2.04
ROA	7780	0.12	0.12	0.06	0.00	0.24
Tobin's Q	7780	0.86	0.76	0.58	0.12	3.33
Volatility	1725	0.03	0.00	0.06	0.00	0.34
FII	4468	0.07	0.03	0.09	0.00	0.53
DII	7780	0.01	0.00	0.11	0.00	1.00
Buy-back dummy	7780	0.01	0	0.10	0	1
Panel D (2005-2007)						
DPR	6277	0.13	0.00	0.21	0.00	1.27
Size	4691	6.28	6.22	1.90	2.08	9.17
Leverage	6277	0.59	0.58	0.36	0.04	2.04
ROA	6277	0.13	0.12	0.07	0.00	0.24
Tobin's Q	6277	1.34	1.10	0.85	0.12	3.33
Volatility	4650	0.04	0.04	0.02	0.02	0.29
FII	2421	0.08	0.03	0.11	0.00	0.34
DII	4663	0.17	0.09	0.19	0.00	0.53
Buy-back dummy	6277	0.01	0.00	0.10	0.00	1.00

Table 3: Univariate Difference-in-Differences Analysis

This table presents the difference of the DPR of control and treated firms for three years before and three years after the adoption of Clause-49 in 2000 in Panel A and imposition of Section-23E in 2004 in Panel B. Treated firms are comprised of firms affected by Clause-49 reform and include Groups 1, 2 and 3 firms and Control firms include Group 4 firms that are unaffected by Clause-49 reform where groups are as defined in the notes to table 1. Pre-Clause-49 adoption period includes years 1998 to 2000 for Group 1, years 1999 to 2001 for Group 2 and years 2000 to 2003 for Group 3 firms respectively. Similarly, post-Clause-49 adoption period includes years 2001 to 2003 for Group 1, years 2002 to 2004 for Group 2 and year 2003 to 2004 for Group 3 firms. As Section-23E is imposed in October 2004, the post-Clause-49 period is limited to the latest of year 2004 because of which we report only two years post-Clause-49 adoption for Group 3 firms. Post-Clause-49 period for Group 4 firms is taken for years 2003 and 2004, similar to those for Group-3 firms. Pre-Section-23E imposition period includes three years from 2002 to 2004 and post-Section-23E imposition period includes three years from 2005 to 2007. DPR is calculated by dividing the sum of the interim and final dividends by the profit after tax. Difference in Differences (DiD) is computed by subtracting the difference in the DPR of the control group from the difference in the DPR of the treated group. The levels of significance are indicated as follows: * at 10%; ** at 5% and *** at 1%. Source: CMIE

Panel A: <i>(period of [t-3, t+3] for Clause-49 adoption)</i>	Pre- Clause-49	Post- Clause-49	Difference	t-stat	No. of Obs.
DPR (Control)	0.1492	0.1443	-0.0049	1.0139	1944
DPR (Treated)	0.1741	0.1756	0.0015	0.1953	7749
Difference in Differences (DiD)			0.0064	0.3013	
Panel B: <i>(period of [t-3, t+3] for Section-23E imposition)</i>	Pre- Section-23E	Post- Section-23E	Difference	t-stat	No. of Obs.
DPR (Control)	0.1467	0.1396	-0.0071	1.65	2096
DPR (Treated)	0.1582	0.1310	-0.0272	-8.97***	10105
Difference in Differences (DiD)			-0.0201	-7.79***	

Table 4. Difference-in-Differences Analysis – Base Results

This table shows the results of four fixed effects panel regressions, as shown in equations 1 and 2 in the text. The dependent variable is the Dividend Payout Ratio (DPR). The independent variable of interest in Columns 1 and 2 is DiD_CL49 – an interaction term between an indicator variable, $Treat_i$, which takes the value of one for firms affected by Clause-49 and listed as or before 2000 and zero otherwise, and an event indicator variable, $After_{CL49}_t$, which takes the value of one for years after adoption of Clause-49 in the year 2000 was applicable to the treated firms to the latest of 2004 and zero otherwise. The main independent variable of Columns 3 and 4 is DiD_S23E – an interaction term between variable, $Treat_i$, and an event indicator variable, $After_{S23E}_t$, which takes the value of one for years after Section-23E was applicable (2005-2007) and zero otherwise. Firm controls include Size, Leverage, ROA, Tobin's Q, Volatility, FII, DII, Buy-back dummy and firm-specific trends. Variables are as defined in the notes to Table 1 and winsorized at 5% and 95%. Year FE is Year Fixed Effects and Firm FE is Firm Fixed Effects. t-statistics are reported in parentheses. Standard errors are clustered at firm level and the levels of significance are indicated as follows: * at 10%; ** at 5% and *** at 1%. Data source: CMIE. Sample period for columns 1 and 2 is 1998-2004 and for 3 and 4 is 2002-2007.

	Dependent Variable: Dividend Payout Ratio (DPR)			
	[1]	[2]	[3]	[4]
DiD_CL49 [$Treat_i \cdot After_{CL49}_t$]	0.02 (0.64)	0.03 (1.27)		
DiD_S23 [$Treat_i \cdot After_{S23E}_t$]			-0.03*** (-3.56)	-0.05*** (-4.17)
Size		-0.07*** (-6.69)		-0.05*** (-3.42)
Leverage		0.01 (0.17)		0.09 (1.63)
ROA		-0.02*** (-5.29)		-0.02*** (-5.30)
Tobin's Q		0.01* (2.25)		0.01* (2.13)
Volatility		-0.00 (-0.87)		-0.00 (-0.15)
Buy-back dummy		0.01 (0.24)		0.03 (0.75)
FII				0.12* (1.71)
DII				-0.03 (-0.82)
Year FE	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES
Firm-specific trend	YES	YES	YES	YES
Adj. R ² (within)	0.02	0.24	0.10	0.24
No. of Firms	1201	1201	805	805
No. of observations	7036	7036	3089	3089

Table 5. Firm characteristics of Treated and Control Groups

This table shows the mean and standard deviation of control variables of the sample firms classified into four different groups based on the applicability of Clause-49 for the pre-enforcement period (2002-2004). Variables are defined in the notes to Table 2. Group 1 firms are large-cap companies listed as flag "A" category in the Bombay Stock Exchange Ltd. (BSE). Group 2 firms are mid-cap companies that have paid-up capital greater than INR 100 million or net worth greater than or equal to INR 250 million. Group 3 firms are low-cap firms that have paid-up capital between INR 100 million and 30 million. Group 4 are control firms with paid-up capital less than 30 million. As defined in section 4, Groups 1-3 are subject to Clause-49 (treated group), whereas Group 4 is not (control group). Source: CMIE

Category		Treated Group (1, 2, 3 and combined)			Control Group (4)
Clause-49 Group	Group1	Group 2 (Leverage-Matched Treated Group)	Group 3 (Size-Matched Treated Group)	Groups 1, 2 & 3 combined	Group 4
Size	8.38 (1.03)	6.01 (1.50)	3.68 (1.05)	5.38 (1.98)	3.68 (1.18)
Leverage	0.54 (0.19)	0.58 (0.26)	0.53 (0.31)	0.55 (0.28)	0.58 (0.37)
Tobin's Q	1.56 (0.81)	0.98 (0.53)	0.79 (0.52)	0.91 (0.61)	0.78 (0.51)
ROA	0.15 (0.05)	0.13 (0.05)	0.11 (0.06)	0.13 (0.06)	0.11 (0.06)
Volatility	0.03 (0.01)	0.05 (0.03)	0.09 (0.03)	0.07 (0.04)	0.08 (0.04)
FII	0.07 (0.08)	0.02 (0.03)	0.03 (0.04)	0.04 (0.06)	0.04 (0.04)
DII	0.13 (0.10)	0.07 (0.08)	0.04 (0.06)	0.06 (0.09)	0.06 (0.09)
No. of firms	126	828	870	1824	438

Table 6: Difference-in-Differences Panel Regression – Alternative Treated and Control Groups

This table shows the results of four fixed effects panel regressions as shown in equations 1 and 2 in the text. The dependent variable is the Dividend Payout Ratio (DPR). Columns 1 and 2 present the results for the size-matched sub-sample and columns 3 and 4 report the results for the leverage-matched sub-sample. DiD_CL49 is an interaction term between an indicator variable, $Treat_i$ which takes the value of one for firms affected by Clause-49 and listed as or before 2000 and zero otherwise, and an event indicator variable, $After_{CL49}_t$ which takes the value of one for years after Clause-49 was applicable to treated firms to the latest of 2004 and zero otherwise. DiD_S23E is an interaction term between variable $Treat_i$ and an event indicator variable, $After_{S23E}_t$ which takes the value of one for years after Section-23E was applicable (2005-2007) and zero otherwise. Firm controls include Size, Leverage, ROA, Tobin's Q, Volatility, FII, DII, Buy-back dummy and firm-specific trends. Variables are as defined in the notes to Table 1 and winsorized at 5% and 95%. Year FE is Year Fixed Effects and Firm FE is Firm Fixed Effects. t-statistics are reported in parentheses. Standard errors are clustered at firm level and the levels of significance are indicated as follows: * at 10%; ** at 5% and *** at 1%. Data source: CMIE

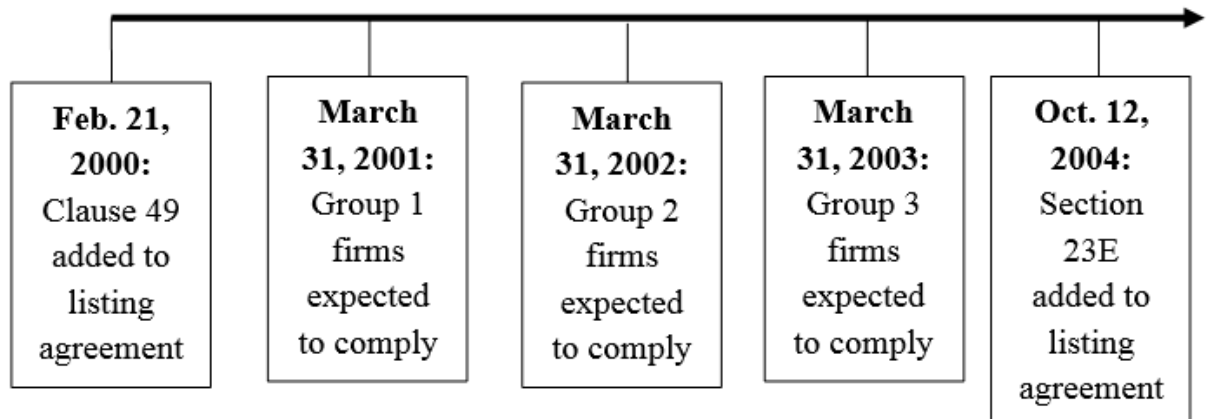
Treated Control	Size-Matched DiD Groups 3 and 4 Firms		Leverage-Matched DiD Groups 2 and 4 Firms	
	[1]	[2]	[3]	[4]
DiD_CL49 [$Treat_i . After_{CL49}_t$]	-0.03 (-0.81)		0.02 (0.55)	
DiD_S23E [$Treat_i . After_{S23E}_t$]		-0.06*** (-4.22)		-0.05*** (-3.67)
Size	-0.09 (-1.19)	-0.01 (-0.25)	-0.02*** (-5.41)	-0.07** (-2.53)
Leverage	0.04 (0.21)	-0.07 (-0.60)	0.09 (1.10)	0.07 (0.95)
ROA	-0.01 (-1.09)	-0.02 (-1.04)	-0.02 (-1.05)	-0.01 (-1.47)
Tobin's Q	0.04 (1.04)	0.03 (1.28)	0.02 (1.49)	0.02 (2.09)
Volatility	-0.27 (-0.97)	0.01 (0.22)	-0.05 (-0.24)	-0.05 (-0.51)
FII		-0.30 (-1.21)		0.10 (1.43)
DII		0.04 (0.46)		-0.01 (-0.31)
Buy-back dummy	-0.15 (-1.11)	-0.03 (-0.33)	-0.01 (-0.20)	0.00 (0.12)
Firm-Specific Trend	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES
Adj. R ² (within)	0.27	0.28	0.26	0.26
No. of firms	268	172	775	387
No. of observations	878	474	2886	1432

Table 7: Difference-in-Differences Analysis – Robustness Checks

This table shows the results of four fixed effects panel regressions. The dependent variable is the Dividend Payout Ratio and all variables are as reported in Table 1. Columns 1 and 2 report the DiD regression results for two false experiments with one year before and one year after the true event year, 2004. Column 3 reports the DiD regression for alternative (narrow) period and column 4 presents the results from first difference regression as shown in equation 3. DiD_B is an interaction term between an indicator variable $Treat_i$ which takes the value of one for firms affected by Clause-49 and listed as or before 2000 and zero otherwise, and the categorical variable of false-event, $After_FE_{2003}$, which takes the value of one for year 2004-2005, and zero otherwise. DiD_A is an interaction term between $Treat_i$ and a dummy variable with the false event year, $After_FE_{2005}$ which takes the value of one for years 2006-2007. DiD_S23E is an interaction term between $Treat_i$ and the true event dummy, $After_S23E_t$ which takes the value of one for years after Section-23E was applicable (2005-2006) and zero for years 2003 and 2004. The coefficients in the fourth column represent the results of the first difference regression. Firm controls include Size, Leverage, ROA, Tobin's Q, Volatility, FII, DII, Buy-back dummy and firm-specific trends. Variables are as defined in the notes to Table 2 and winsorized at 5% and 95%. Year FE is Year Fixed Effects and Firm FE is Firm Fixed Effects. t-statistics are reported in parentheses. Within-Adjusted R^2 are reported for regressions in columns 1 to 3 whereas column 4 reports Adjusted R^2 . Standard errors are clustered at firm level and the levels of significance are indicated as follows: * at 10%; ** at 5% and *** at 1%. Data source: CMIE.

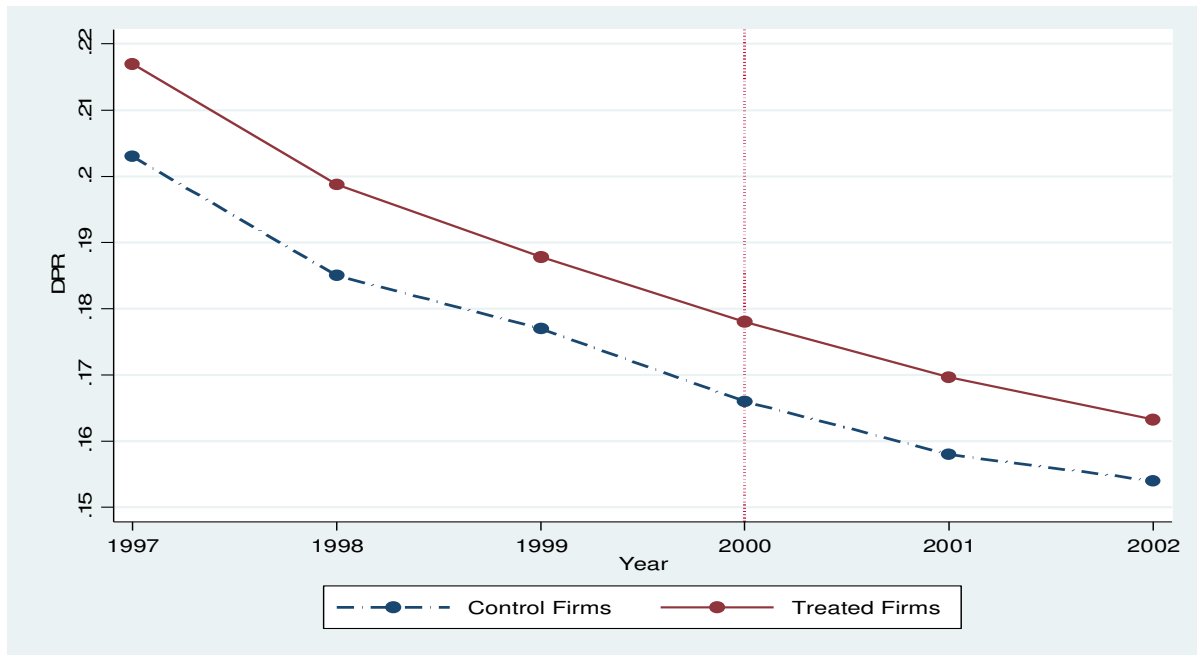
	False Experiment for 2003	False Experiment for 2005	Alternative Period 2003-2006	First Differences for 2002-2007
	[1]	[2]	[3]	[4]
DiD_B [$Treat_i \cdot After_FE_{2003}$]	-0.02 (-0.45)			
DiD_A [$Treat_i \cdot After_FE_{2005}$]		0.05 (1.34)		
DiD_S23E [$Treat_i \cdot After_S23E_t$]			-0.10*** (-3.55)	-0.09*** (-5.33)
Size	-0.05* (-2.05)	-0.03*** (-3.54)	-0.03*** (-3.25)	-0.03*** (-3.01)
Leverage	0.01 (1.36)	0.01** (2.08)	0.02* (1.95)	0.02** (2.26)
ROA	-0.01 (-1.56)	-0.01*** (-5.89)	-0.01** (-4.40)	-0.01*** (-4.28)
Tobin's Q	0.02 (1.10)	0.02 (1.99)	0.03* (2.90)	0.02*** (1.63)
Volatility	-0.00 (-0.09)	-0.00 (-0.19)	-0.00 (-0.75)	-0.01 (-1.64)
FII	0.02 (1.56)	0.01 (1.05)	0.02* (1.92)	0.02* (1.93)
DII	0.09 (0.49)	-0.04 (-1.25)	-0.02 (-0.68)	-0.02 (-0.73)
Buy-back dummy	-0.00 (0.04)	-0.01 (-0.31)	-0.02 (-0.88)	-0.01 (-0.03)
Firm-specific trend	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Firm FE	YES	YES	YES	NO
Adj. R^2 (within)/ Adj. R^2	0.39	0.37	0.41	0.42
No. of firms	512	755	695	583
No. of observations	1327	1906	1638	1814

Figure 1. Implementation Schedule of Clause-49.



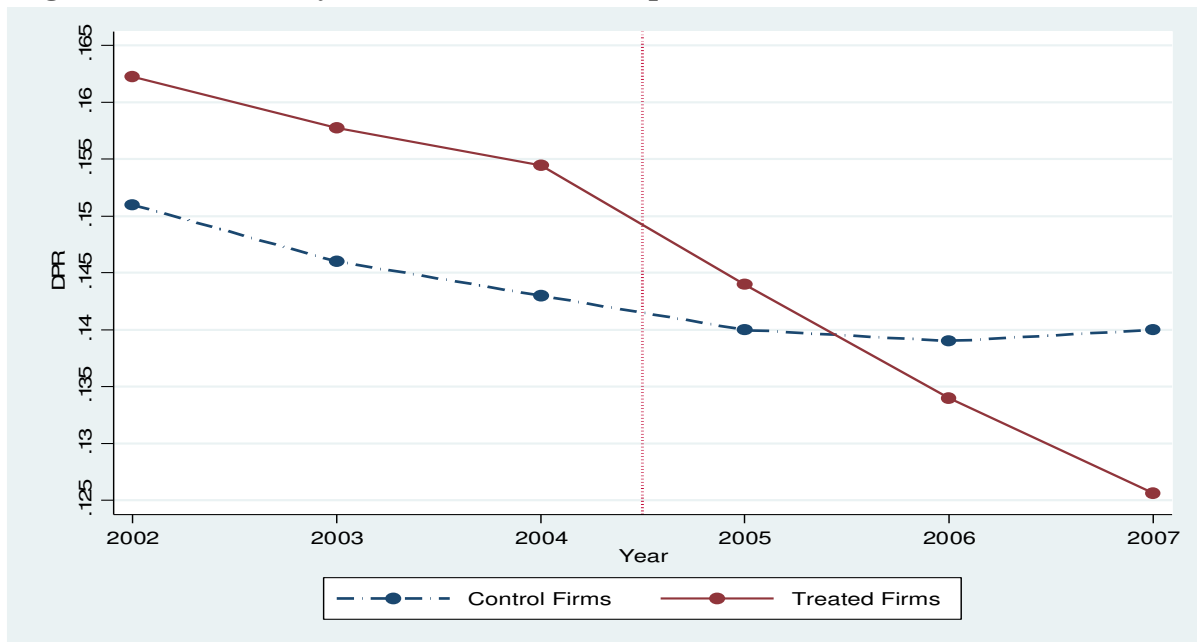
Note: A timeline of the Clause-49 and Section-23E enforcement.

Figure 2: Dividend Payout Ratios and the Introduction of Clause-49



Note: The graph shows the average annual Dividend Payout Ratios (DPR) of treated and control groups of Clause-49 regulation for the period of 1997-2002. DPR is the ratio of total dividend paid to total profit after tax, as defined in Table 1. Treated Group firms are defined as those with paid-up equity capital of more than INR 30 million or with net worth of more than INR 250 million as of or before 2004, or those that were listed after April 2000. All other firms are classified as Control Group firms. The vertical bar represents the year of enactment of Clause-49 in 2000.

Figure 3: Dividend Payout Ratios and the Adoption of Section-23E



Note: The graph shows the average annual Dividend Payout Ratios (DPR) of treated and control groups of Clause-49 regulation for the period of 2002-2007. DPR is the ratio of total dividend paid to total profit after tax as defined in Table 1. Treated Group firms are defined as those with paid-up equity capital of more than INR 30 million or with net worth of more than INR 250 million as of or before 2004, or those that were listed after April 2000. All other firms are classified as Control Group firms. The vertical bar represents the year of adoption of Section-23E.

Appendix-1

Stylized Mandated Provisions of Clause-49

1. Requirement of independent directors:

- 50% of board directors are required to be independent in the case where the Chairman is the executive director and one third (33%) if the Chairman is a non-executive.
- Definition of Independent Directors: Independent directors are defined as those not having any material pecuniary relationship with company, not related to Board members or one level below Board and no prior relationship with the Company for the last three years. Nominee Directors of Financial Institutions are considered to be independent.

2. Board requirements and limitations:

- Board is required to meet four times a year (with a maximum of three months between meetings).
- Limit on the number of committees a director can be on is 10, but only 5 for which a director can be the Chair of the committee.
- Code of conduct is required.

3. Composition of audit committee:

- The committee should have at least three directors, two of which are required to be independent.
- All the members of the audit committee should be financially literate.
- At least one member of the audit committee should have accounting or financial management experience.

4. Role and power of audit committee:

- The committee should conduct a minimum of four meetings in an accounting year with a gap between two meetings not exceeding four months.
- The major role of the committee is to review statutory and internal audits, and obtain outside legal or other professional advice and review whistle-blower programmes, if any.

5. Disclosures:

The clause requires firms to disclose the following:

- Related party transactions,
- Accounting treatments and departures,
- Risk management,
- Annual report, including discussion of internal controls adequacy, significant trends, risks, and opportunities,
- Proceeds from offerings,
- Compensation for directors (including non-executives, and obtain shareholders' approval),
- Details of compliance history for the last three years, and corporate governance reports (and disclose adoption, if any, of mandatory and non-mandatory requirements),
- Corporate governance reports.

6. Certifications by CEO and CFO:

- Financial statements,
- Effectiveness of internal controls, and
- Inform audit committee of any significant changes in the above.

7. Certifications by auditor or company secretary:

- Compliance with corporate governance.