CORPORATE GOVERNANCE, ENFORCEMENT, AND FIRM VALUE: EVIDENCE FROM INDIA

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Abstract

This paper contributes to the analysis of the effects of corporate governance reforms and enforcement on stock market development and firm value using a sequence of corporate governance reforms in India. The reforms (referred to as Clause 49 of the listing agreement) were implemented in stages over the period 2001-2003, with a large number of firms being completely exempt from the new rules. Severe financial penalties for violations were introduced in 2004, providing an opportunity to test the effect of enforcement independently of the substantive law. Employing a large sample of 4335 firms over the 1998-2006 period, the paper uses a difference-in-difference approach, comparing firms that were subject to Clause 49 (and its enforcement regime) with a control group of firms that were not subject to Clause 49. Controlling for various relevant factors, and for firm-specific time trends, the paper finds a large and statistically significant positive effect (amounting to about 10% of firm value) of the Clause 49 reforms, in combination with the 2004 sanctions. This result is robust to various checks, and in particular continues to hold when comparing only the smaller firms that were subject to Clause 49 and the larger firms among those that were not subject to Clause 49. The paper also explores the channels through which this increase in firm value may have occurred, focusing on the prevalence of tunneling within business groups before and after the reforms.

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I. INTRODUCTION

The connection between corporate governance and stock market development has become a topic of intense debate within and across law, finance and economics. It has spurred an explosion of research into what types of legal systems are associated with stock market growth, what are the pre-conditions for stock market growth, what kinds of legal reforms are associated with such growth, and what are the conditions under which such legal reforms arise. Although the literature initially focused on the legal origins of a country's legal system (e.g., civil law or common law) and methods of protecting minority shareholders, the discussion has now turned to the importance of enforcement. Much of the literature that has begun to focus on the role of enforcement studies more developed markets (e.g., US, UK, Europe and Japan), and there has been little analysis of the importance of enforcement in the context of emerging markets, which are usually characterized as suffering from weak and corrupt enforcement. Studying emerging markets may then provide important insights into how stock market growth and law are inter-connected and further what kinds of legal reforms might be most beneficial to enhancing the growth of stock markets in emerging markets.

This paper investigates the potential connection among corporate governance reforms, enforcement, and firm value in a large emerging market, namely India. The analysis employs financial statement and other data from the Prowess database for a large sample of 4335 Indian firms over the period 1998-2006. It uses as its source of exogenous variation a sequence of reforms to India's corporate governance regime, beginning in 2000. In that year, Clause 49 (of the stock exchange listing agreement for publicly-traded corporations) was introduced, mandating greater board independence, enhancing disclosure requirements, and increasing the power of audit committees for affected firms. Importantly, however, not all Indian corporations were subject to Clause

49, and even among affected firms, not all were immediately subject to the new provisions. A small number of very large firms were expected to comply by 2001, a larger number of medium-sized firms were expected to comply by 2002, and the remainder of the affected firms (which were mostly quite small in size) were expected to comply by 2003. Firms that were outside all three of these groups were not expected to comply with Clause 49. These unaffected firms were generally smaller than the affected firms. However, the legal criteria for being subject to Clause 49 were framed in terms of firms' paid up share capitalization, which is only imperfectly correlated with size as measured e.g. by the book value of assets. Thus, there was considerable overlap in terms of asset size between the smaller firms subject to Clause 49 and the larger firms among those that were not subject to the new rules.

As Clause 49 was framed as a change to the listing agreement, the initial penalty for violations was delisting. However, in 2004, India's securities laws were amended to introduce large financial penalties for directors of firms that were found to be in violation of Clause 49. The introduction of these severe sanctions was quite separate in time from the dates on which firms became subject to the new rules (2001-2003). This provides an unusual opportunity to not only test the effect of the substantive law, but also to test the effects of enforcement (independently of the effect of the substantive law).

The paper's primary hypothesis concerns the impact of the 2004 sanctions on firm value (as measured by Tobin's q). The analysis uses a difference-in-difference approach, comparing a treatment group of firms that were subject to Clause 49 (and hence to the new enforcement regime from 2004 onwards) with a control group of firms that were not subject to Clause 49 (or to its enforcement regime). The regression specification controls for various relevant factors, and for firm-specific time trends in q (so that the estimated effect represents the extent to which a Clause 49 firm's value

deviates from its underlying trend following the introduction of the sanctions, relative to the corresponding deviation for unaffected firms). Using this approach, the paper finds a large and statistically significant positive effect (amounting to about 10% of firm value) of the Clause 49 reforms, in combination with the 2004 sanctions. This result is robust to various checks, and in particular continues to hold when comparing only the smaller firms that were subject to Clause 49 and the larger firms among those that were not subject to Clause 49.

This result suggests that, while firms always had the option of voluntarily adopting governance provisions similar to those in Clause 49, they benefited from the ability to commit (e.g. to not expropriating minority shareholders) that was provided by the external public enforcement mechanism. The paper also explores the channels through which this increase in firm value may have occurred, focusing in particular on the prevalence of "tunneling" (the transfer of cash from controlled to controlling firms within business groups). This test draws on an approach originally developed by Bertrand, Mehta, and Mullainathan (2002) for identifying tunneling among Indian business groups.

Part II provides a literature review identifying the areas of scholarship in which this paper makes contributions. Part III details the development of corporate governance reform in India while laying out the groundwork for our empirical tests. Part IV describes the data and provides summary statistics. Part V elaborates on the empirical specifications and what we will be testing. Part VI provides results. Part VII interprets and extends the results. Part VIII concludes.

II. LITERATURE REVIEW

Our study contributes to the literature in a number of ways. Most fundamentally, we contribute to the growing literature on the relationship between the law and stock market development, in particular addressing the central question of whether there is a

causal relationship between better corporate governance and firm value. In addressing this issue, we focus in particular on the role of enforcement. Finally, we examine the channels through which stronger governance and enforcement might raise firm value and foster stock market development, focusing on whether legal reforms can influence the level of minority expropriation (or "tunneling").

The question of the relationship between the law and stock market development has generated a tremendous literature in the last few years. The modern discussion starts with the seminal articles of La Porta, Lopez-de-Silanes, Shleifer & Vishny (1997, 1998) (hereafter LLSV), which find that countries with a common law legal system tend to have, amongst other things, more developed stock markets, better stock market liquidity, and higher firm market values than countries with a civil law legal system. LLSV (and others) further suggest that the common law's greater protection of property rights (especially those of smaller shareholders) and its lighter regulatory hand (which facilitates private ordering) is more conducive to the growth of stock markets than the civil law.

Although scholars debate whether it is the "legal origins" of a legal system (common law or civil law) that matter, most agree that law is important to stock market development (Rajan & Zingales, 2001; Roe, 2006; Coffee, 2002). In addition, there is increasing evidence outside the US of a relationship between governance and firm value.[1] Black, Jang & Kim (2006) construct a corporate governance index for a cross-section of Korean firms, and use an instrumental variables approach to argue that this index has a positive causal effect on the market value of Korean firms.[2] Black, Kim, Jang & Park (2005) extend this analysis to a longitudinal setting by using a Korean

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[1] Gompers, Ishii & Metrick (2003) (GIM) find that better governance is correlated with higher market values in the US. Bebchuk, Cohen & Ferrell (2005) find similar results when they use only a subset of the GIM governance index, measuring entrenchment.

[2] Their instrument is firm size because the Korean reforms only applied to firms above a certain asset size. Their identification strategy thus relies on the discontinuity created by the applicability of legal provisions above a threshold specified in terms of asset size.

Corporate Governance Index that spans seven years; they find that the Index is significant and positively associated with higher market values.

The question raised by these findings is how do governance rules affect firm value and market development? Recent scholarship has increasingly stressed the role of enforcement. Law enforcement may be beneficial because it provides investors with assurances about the credibility of firm disclosures by imposing sanctions for misleading or inaccurate disclosures (Daines & Jones 2007), protects investors' property rights against expropriation, signals government attitudes about acceptable governance standards and what areas may bear the brunt of enforcement scrutiny (Milhaupt & Pistor, 2008), and provides investors with a sense that they can have their grievances addressed in some efficacious manner (Coffee, 2007; Roe & Siegel, 2007; Jackson & Roe, 2007; Bhattacharyya & Daouk, 2002). These factors encourage smaller investors to invest in firms, which in turn leads to better stock market development.

As the focus turns to enforcement, scholars have started examining what aspects of enforcement matter most. Although early studies identified private enforcement (civil litigation by investors) and disclosure as being critical (La Porta, Lopez-de-Silanes & Shleifer, 2006),[3] more recent studies suggest that public enforcement (or a mix of public and private enforcement), as measured by enforcement staff, budgets and penalties imposed, may better correlate with stock market development (Jackson & Roe (2007); Coffee (2007)).[4]

Our study contributes to this literature by exploiting specific features of the Indian reforms to examine the specific effects on firm value of the government

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[3] The authors find that laws making private enforcement easier and laws requiring disclosure (thereby making market enforcement easier) benefit stock markets in a sample of 49 countries they examine.

[4] One question that is raised by this is why some countries have better enforcement than others. One explanation is that countries with more developed stock markets have better enforcement because the players in the market lobby for it (Coffee, 2002). Under this view enforcement and stock market development have a much more bi-directional relationship – better stock market development leads to constituencies forming that would desire greater enforcement and greater enforcement can induce more investors to enter the market.

threatening severe sanctions for violations of corporate governance rules. Because severe sanctions were imposed some time after the substantive law reforms, we can test the independent effect of enforcement in India. We find that this is correlated with higher firm value, suggesting that public enforcement *per se* can be beneficial.[5] We also explore the mechanisms through which enforcement may influence firm value and market development, drawing on a literature that suggests that the value of corporate law is that it helps to reduce minority expropriation or "tunneling" of assets from the controlled firm to the controlling firm.[6] In particular, we use an approach originally developed by Bertrand, Mehta and Mullainathan (2002) (hereafter BMM) to test for the existence of tunneling within Indian business groups, in order to analyze the impact of the corporate governance reforms (and their enforcement) on the prevalence of tunneling.[7]

Finally, this paper also contributes to the literature on the impact of Indian governance reforms. Black & Khanna (2007) conduct an event study of the adoption of Clause 49. They rely on the phased implementation schedule, in which "large" firms were required to comply before "small" firms, and report positive returns to a treatment group of large firms relative to a control group of small firms, around the first important legislative announcement. Balasubramanian, Black & Khanna (2008) conduct a detailed survey of Indian firms to assess whether better governance is correlated with

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[5] Moreover, these effects are present even when we note that better disclosure was already required under Indian Law before the sanction changes came into effect. This suggests that just the threat of the sanction was having the effect since enhanced disclosure was already required.

[6] For example, Khanna, Kogan and Palepu (2006), study instances of minority shareholder expropriation by Indian firms. Bae, Kang & Kim (2002) find evidence of tunneling in Korea via mergers by the controlled firm. Baek, Kang & Lee (2006) find evidence that dilutive equity offerings can be a form of tunneling in Korean Chaebols (business groups). There are a series of papers on tunneling in the Chinese stock markets (see e.g., Cheung, Jing, Rau & Stouraitis (2007), Jiang, Lee & Yue (2006), Ming & Wong (2003)). In addition, Atanasov, Black, Ciccotello & Gyonshev (2007) examine tunneling in the form of dilutive equity offerings and below market freezeout mergers in Bulgaria. They find that after a 2002 Bulgarian law reform targeting both types of tunneling minority shares are worth more and firms seem to be performing better.

[7] BMM do not focus on a particular method of tunneling (as the Atanasov *et al*. and Korean papers do). If controllers can substitute between methods of tunneling then the BMM measures have somewhat broader appeal.

better firm performance; their early findings, based on survey responses from 370 firms in 2006, suggest that better governed firms tend to have higher Tobin's *q*.

III.   CORPORATE GOVERNANCE REFORM IN INDIA: THE RISE OF CLAUSE 49.

Before examining the Indian evidence we need some background on the legal developments forming the basis of our study. Below, we sketch in broad terms the ambitious corporate governance reforms enacted in India over the last decade or so (for greater detail see Khanna (2008)).

A.   *Pre-1991 Corporate Governance System in India*

India, unlike a number of emerging markets, has had actively functioning stock markets since 1875 and a fairly detailed corpus of corporate and securities laws (Bagchi (1972), Rungta (1970)).[8] By most accounts, India's pre-Independence (pre-1947) corporate governance placed it in an enviable position amongst many post colonial countries. However, following Independence the Indian government put in place a number of policies that had the effect of weakening corporate governance in India.

First, the government's policies weakened competition which contributed to the inefficiency of a number of firms and reduced their incentives to have better governance.[9] The government nationalized many industries (thereby limiting entry into them) and implemented a large scale licensing regime (the "license raj") which further served to limit domestic competition by requiring licenses for starting or expanding a business (Goswami, 2003). The government restricted foreign entry and investment into Indian markets via trade barriers and explicit limits on foreign investment (Mohan

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[8] See the Indian Companies Act 1866; Indian Companies Act 1882; Indian Trusts Act 1882; Indian Companies Act 1913; Reserve Bank of Indian Act 1934; 1956 Indian Companies Act (in the process of being re-written); 1956 Securities Contracts (Regulation) Act (defines powers and conduct for stock exchanges); 1985 Sick Industrial Companies (Special Provisions) Act (bankruptcy provisions for financially distressed companies – also being re-written); 1992 Securities and Exchange Bureau of India (SEBI) Act (sets up SEBI – regulator of stock markets). For more discussion of the growth of Indian Industry since the beginning of the 20th Century see Morris (1983)., Note that even prior to the 1866 Act there were corporations in India, primarily in the Bengal (Calcutta) area.

[9] Soon after Independence the Indian government enacted a series of Industrial Policy Resolutions which entrusted the state with much greater responsibility for managing the economy (Mohan & Aggrawal (1990))

& Aggrawal (1990), Goswami (2003)). This served to further insulate Indian firms from competition.

Second, the government nationalized many financial institutions and became the primary provider of capital, both in the form of debt and equity, through Developmental Finance Institutions (DFIs). This was problematic from a corporate governance standpoint because the DFIs played little to no monitoring role. The employees of the DFIs were not assessed based on whether the firms they provided funding to made a profit, but rather on the total amount of loans that had been made. This, of course, created an incentive to maximize the amount of loans rather than providing loans to businesses with viable business plans. Moreover, the DFIs often favored management due to a variety of reasons including corruption and political gain (Goswami (2003); Chakrabarti (2005); World Bank (2005)).

Third, the other contributors of capital had limited ability to monitor management. Non-DFI (i.e., private) creditors could exercise only limited oversight given the very slow pace of bankruptcy proceedings in India (Anant & Goswami (1995), Goswami (1996)).[10] Minority shareholders (non-DFI shareholders) faced considerable obstacles in enforcing their rights in court, including lengthy judicial delays, irregularities in share transfer registration, opaque disclosure and ownership structure (motivated primarily by tax evasion strategies[11]) and potential government limits or interference in the transfer of control.[12]

This led to considerable looting by management and promoters, but the system was insulated from some negative financial and employment consequences by the slow

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[10] It could easily take 10 years to liquidate a firm (Anant & Goswami (1995), Goswami (1996)). Indeed, it was not very common for private creditors to provide credit to anyone but blue chip companies or companies backed by government guarantees.

[11] There were very high tax rates for corporations and individuals, which led to a tremendous amount of tax evasion achieved by devising highly complicated cross-holding structures. This had the by-product of making ownership structure even more opaque to minority shareholders.

[12] The government could block share transfers that might result in a change in the board that the government considered "prejudicial to the interest of the company or the public interest".   Cite to specific provisions.

bankruptcy system and by the fact that the state could take over failing businesses and keep them afloat to maintain employment. The employment dislocation that would otherwise follow such policies thus did not eventuate and thereby reduced the political cost of supporting inefficient management (Anant & Goswami (1995)).[13]

This is a recipe for dysfunctional corporate governance and that is precisely what India had. From the outside India had the laws and the legal system to enforce corporate governance but the operation of the system, inconsistent disclosure, and largely ineffective boards of directors led to a failing system of governance. Indeed, Indian firms looking for capital had to rely primarily on internal sources or on the capital provided by the DFIs (Bhattacharyya & Rao, 2005, World Bank Report, 2005).

B. *Liberalization and Corporate Governance Reform (1991 to present)*

The sheer weight and cost of the overall economic and regulatory system came crashing down on the Indian economy in 1991 when the Indian government, in response to a financial crisis, embarked upon a general program of liberalization. Liberalization was to take the form of selling off some of the SOEs and beginning to sell off or rationalize the state's interests in other firms. Further, the DFIs were now to be assessed on "bottom line" measures rather than the amount of loans sanctioned.[14] Moreover, trade barriers were to be reduced, foreign investment permitted (and even encouraged) and the "license raj" to be eased thereby permitting for increased domestic and foreign competition (Goswami (2003), Krueger (?)). Thus, post-1991 India would have new competitive spaces opening up (where the SOEs would no longer be the sole providers of goods or services), old industries becoming more competitive with the inflow of foreign competition and new domestic competition, and government

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[13] This of course increased the effective debt burden of the state.

[14] Indeed, the DFIs were no longer provided the kind of subsidized access to funds they had in the past and they were sometimes merged with private entities (World Bank Report (2005)). The primary DFIs before 1991 were: - IFCI, ICICI, IDBI, UTI, LIC, GIC and Public Sector Banks. Now there are 3 sets of Institutional Investors – the DFIs, new private sector Mutual Funds, and Foreign Institutional Investors.

institutions more motivated by efficiency than before. Following this the government created the securities market regulator – the Securities & Exchange Board of India (SEBI) in 1992 and slowly granted it increasing powers and the mandate to regulate the stock markets in India.[15] This was significant because SEBI could take on an adjudicatory role and thereby relieve some pressure on the court system and provide more timely resolution of disputes.

It is against this backdrop that corporate governance reform would develop in India. Although the mid-1990s saw the first incursions into reforming the stock markets and governance,[16] the watershed event is generally perceived to be SEBI's promulgation of Clause 49 of the stock exchange listing agreement in 2000. In the next few paragraphs I examine how Clause 49 came to be, what its critical elements are, and what has followed in its aftermath.

The first steps toward Clause 49 came in 1998 when the Confederation of Indian Industry (CII) – a large Industry association – proposed a voluntary code of corporate governance for Indian firms. This was followed in quick measure by SEBI forming the Kumar Mangalam Birla Committee (KMBC) to suggest changes in the listing agreement of the stock exchanges to address corporate governance concerns. The KMBC's draft set of recommendations came out on October 1, 1999 and became effective as Clause 49 of the listing agreement with the Exchanges on February 21, 2000 – a stunning 5 months later. Firms failing to meet the requirements of Clause 49 could be delisted. The details of Clause 49 are provided in Appendix 1, but a quick overview is provided below.

Clause 49 had both requirements and recommendations. In the required camp were a number of reforms designed to enhance the independence of boards. This involved prescribing minimum percentages of independent directors (50% or 33%

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[15] Cite to 1992 Act.

[16] The reforms started almost with the creation of SEBI in 1992, but some of the key regulations were the SEBI Takeover Code 1997 (dealing with acquisitions of control primarily) and the SEBI Disclosure & Investor Protection Guidelines 1999 (addressing public issuances of securities).

depending on whether the Chairman was an executive director) and significantly tightening up the definition of "independence". In addition to this, Clause 49 mandated the number of meetings per year, expected boards to develop a code of conduct and imposed limits on the number of directorships a director could simultaneously hold.

Clause 49 also enhanced the power of the audit committee by requiring financial literacy, experience and independence of its members, and by expanding the scope of activities on which the audit committee had oversight. Executives were also expected to be more personally involved in corporate affairs as seen by the requirements for certification by the Chief Executive Officer (CEO) and Chief Financial Officer (CFO) of financials and overall responsibility for internal controls. This was combined with considerably enhanced disclosure obligations (on many things including accounting treatment and related party transactions) and enhanced requirements for holding companies when overseeing their subsidiaries. These series of changes appear aimed at making Boards and Audit Committees more independent, powerful and focused monitors of management. Moreover, the enhanced disclosures would aid institutional and foreign investors in monitoring management as well. Clause 49 was received with much fanfare and was followed by many conferences, events and debates on its reach, application and interpretation.[17]

Clause 49's provisions were not expected to be implemented immediately, rather, it provided a phased-in implementation schedule where certain firms (essentially large ones) were expected to comply earlier than mid sized firms which were expected to comply earlier than small sized firms. Specifically, firms that were

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[17] Following the promulgation of Clause 49 a number of further committees were formed (e.g., Naresh Chandra Committee, Department of Company Affairs Report, Malegam Committee, and the Narayana Murthy Committee) which made a number of recommendations that lead, in 2004, to further changes in the listing requirements. Additionally, amendments were made to the Statutory Companies and the corporate governance of banks was reformed. Certain proposals are still under consideration.

listed on the Bombay Stock Exchange under the listing flag "A" were expected to comply by March 31, 2001.[18] These are generally the largest corporations in the Indian economy, and are referred to in the remainder of the paper as "Group 1" firms. Firms that were outside this group, but had paid up share capital of at least Rs. 10 *crores* (roughly US$2,500,000)[19] or net worth of at least Rs. 25 *crores* (roughly US$6,250,000) at any time in the company's history, were expected to comply by March 31, 2002. Paid-up share capital is the number of shares outstanding, multiplied by the "face value" of the shares (i.e. the price at which the share certificates were originally issued). Net worth is a similar concept, but also incorporates the face value of preferred stock, and adjusts for the firm's retained earnings and various reserves.[20] The firms expected to comply in 2002 are referred to below as "Group 2" firms. Finally, other firms with paid up share capital of at least Rs. 3 *crores* (roughly US$750,000) were expected to comply by March 31, 2003; these firms are referred to below as "Group 3" firms. Importantly, Clause 49 was not intended to apply to all publicly-traded and listed firms in India, with those firms with paid up share capital below Rs. 3 *crores* being completely exempt from its provisions.[21] This sequence of reforms is illustrated by the timeline in Figure 1. The characteristics (in terms of assets size) of the different categories of firms are discussed in more detail below, after the dataset is introduced.

These reforms established how governance was to change in India and their violation could lead to de-listing, but no other financial penalties. Although potentially significant, de-listing is less personally painful for executives than direct financial penalties and the threat of imprisonment. Thus, for our purposes, the next important

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[18] Companies in the S&P CNX Nifty Index on the National Stock Exchange were also required to comply by March 31, 2001. All companies in this index are also Group A firms on the Bombay Stock Exchange.

[19] In India a *crore* means 10 million Rupees; thus, for instance, 10 *crores* is identical to 100 million Rupees (roughly US$2,500,000) and 25 *crores* is 250 million Rupees (roughly US$6,250,000).

[20] The definitions of net worth and paid up capital come from Prowess.

[21] In this respect, Clause 49 differs from the Sarbanes-Oxley reforms in the US. The unaffected firms play a crucial role in this paper's empirical strategy, as described below.

reforms were the adoption of direct financial penalties for violation of Clause 49's requirements. In 2004 the Securities Contracts (Regulation) Act 1956 was amended to include section 23E that imposed significant financial penalties for violations of the listing agreement (up to Rs. 25 *crore* (roughly USD 6,250,000) for a violation).[22]

Since 2005 there has not been much in the way of significant corporate governance changes to either the listing agreement or the statute.[23] The general perception appears to be that compliance with the new rules is spotty and lackluster.[24] In any case, there were no enforcement actions until September 2007 when SEBI initiated its first enforcement and investigation proceedings against firms for violations of Clause 49.[25] We are still awaiting the results of these proceedings. Of course, it is plausible that the threat of enforcement may affect behavior even if there are no actual enforcement actions.

IV. DATA

The data for this study is obtained from Prowess, a database that is maintained by the Center for Monitoring the Indian Economy (CMIE). Prowess reports financial statement, share prices, and other relevant data for publicly-traded Indian corporations. Prowess data is typically available only for a limited window of years; this analysis uses

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[22] Inserted by Securities Laws (Amendment) Act, 2004, S.11 (which takes effect from Oct. 12, 2004).

[23] The J. J. Irani Committee's (2005) recommendations suggested changes to the Statutory Corporate Law. Although not yet enacted, if these reforms are adopted by the Indian Parliament then their changes will apply to all firms in India (not just those listed on the exchanges). The proposed changes are summarized in Appendix 1 and compared to the changes wrought by Clause 49. The Irani Committee tightens up certain things and loosens others relative to Clause 49, the overall sense is that the statutory law will permit greater customization and self regulation (e.g., requiring shareholder approvals for executive compensation) for all companies. Moreover, this will be accompanied by greater protections for smaller shareholders, especially in merger transactions. Finally, the process of enforcement is to be streamlined, the bankruptcy system upgraded, and the actual legal provisions rationalized and simplified (eliminating redundancies and so forth).

[24] *See No Exemption on Clause 49,* THE ECONOMIC TIMES, 31 August 2006 (noting that the SEBI Chief M. Damodaran thought compliance with Clause 49 was very low) ; *SEBI Wants SEs to Act Against Firms Defying Clause 49*, THE FINANCIAL EXPRESS, 31 August 2006; R. Bijith, *Half of BSE listed Cos Yet to Comply with Clause 49*, THE INDIAN EXPRESS, January 3, 2007.

[25] *See* Ashish Rukhaiyar, *Navratnas Join Listing Rule Violators,* THE ECONOMIC TIMES, 13 Sept., 2007; *SEBI Pulls up 20 Clause 49 Violators*, THE ECONOMIC TIMES, 12 Sept., 2007.

data for the period 1998-2006. While the estimating samples are generally smaller due to missing values for some variables, the basic sample includes 28,672 observations at the firm-year level over this period, on 4335 firms. Prowess variables are reported as of December 31 of each year; thus, any legal changes occurring during a given calendar year are assumed to be reflected in that same year's financial data (e.g. the sanctions introduced in October, 2004 are assumed to affect Prowess variables reported for 2004).

The primary dependent variable of interest in this analysis is Tobin's q, used (as is standard in the corporate finance literature) as a proxy for firm value. For firm i in year t, Tobin's q is defined as:

$$q_{it} = \frac{(\text{Book value of debt})_{it} + (\text{Book value of preferred stock})_{it} + (\text{Market value of common stock})_{it}}{(\text{Book value of assets})_{it}}$$

(1)

The book value of debt is proxied by the Prowess variable "borrowings," and the book value of preferred stock by the Prowess variable "preference capital." The book, rather than market, value of preferred stock is used because preferred stock is very thinly traded, if at all. The market value of common stock uses data from Prowess on share price and on the number of common shares outstanding. The denominator uses the Prowess variable "total assets."

The formulation in Eq. (1) corresponds closely to standard definitions of q in the literature (e.g. Kaplan and Zingales, 1997; Gompers, Ishii, and Metrick, 2003), with some caveats. First, deferred tax liability is omitted in Eq. (1); however, a definition of q incorporating deferred tax liability is used in robustness checks.[26] Second, it is possible that some recently-issued debt is omitted by Prowess in its "borrowings" variable and reported instead as "current liabilities." To address this possibility, the basic analysis uses current liabilities as a control variable, and a definition of q incorporating current

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[26] Footnote about results when deferred tax liability is included.

liabilities is used in robustness checks.[27]   The values of q (as defined in Eq. (1)) calculated from the Prowess data include some obvious outliers; for instance, the maximum observed value is 1009.2. Thus, in the basic analysis below, q is Winsorized from above at the 5% level. The results, however, are generally similar when q is Winsorized from above at the 1% level.

The central independent variable of interest captures the application of the Clause 49 rules and enforcement provisions. As was pointed out in the discussion above, the implementation of Clause 49 took place through a number of steps. In 1999, the set of firms that would eventually be subject to Clause 49 was identified. However, compliance was not expected to be immediate. The largest firms (those listed under flag "A" at the Bombay stock exchange) were expected to comply in 2001 (Group 1). Another, much larger, group of medium-sized firms were expected to comply in 2002 (Group 2). Finally, the remaining Clause 49 firms (the smallest in size) were expected to comply in 2003 (Group 3).[28] Thus, the most precise "reform" variable (denoted R_{it}) is time-varying, and takes on the value 1 when firm i is subject to Clause 49 in year t, and zero otherwise. Thus, for instance, a Group 2 firm (expected to comply in 2002) would have $R_{it} = 0$ for 1998-2001 and $R_{it} = 1$ for 2002-2006.

However, the enforcement provisions (involving severe financial penalties) were introduced in 2004 when all the firms that would ever be subject to Clause 49 were already expected to be in compliance. Thus, while R_{it} is used in some supplementary analyses, the basic analysis uses a measure that is a simpler, non-time-varying indicator (denoted $CL49_i$) that takes on the value 1 if firm i was ever subject to Clause 49, and 0 otherwise. This variable is used to construct a proxy for the applicability of severe

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[27] Footnote about results when current liabilities is included.
[28] These various groups of firms are readily identified using the Prowess variables for "net worth" and "paid-up share capital"; Prowess also reports the Bombay stock exchange listing flag.

penalties for violation of Clause 49[29](namely, the interaction between $CL49_i$ and an indicator for the years 2004-2006 – see Eq. (2) below).

An obvious concern with this paper's empirical design is the comparability of those firms that were subject to Clause 49 and those that were not. To address this issue, Table 1 reports the asset sizes of each of these subgroups of firms.[30] Note that the legal criteria for the application of Clause 49 were defined in terms of paid-up share capital and net worth. Table 1 reports instead a simple and intuitive summary characteristic of firms – total assets. The criteria for the application of Clause 49 are positively correlated with total assets, but only imperfectly so; thus, there is a considerable amount of overlap in asset size between smaller firms subject to Clause 49 and those not subject to it. As shown in Table 1, Clause 49 firms are generally larger in terms of asset size than other firms. This is particularly true of Group 1 firms, which are extremely large relative to all other subgroups. Group 2 firms, while considerably smaller than those in Group 1, are also substantially larger than the non-Clause 49 firms. This is not so true, however, for Group 3 firms, which are defined by Clause 49 as those with paid-up share capital exceeding Rs. 3 *crores* (roughly US$750,000). If attention is restricted to those non-Clause 49 firms that fall just below the 3 *crore* cutoff (specifically, those with paid-up share capital between 1.5 and 3 *crores*), then these firms and the Group 3 firms have essentially identical mean asset size. The robustness checks below use this overlap in size to construct more precise tests of the central hypothesis, focusing only on firms of similar size.

Summary statistics for the basic estimating sample, which consists of 28,672 observations at the firm-year level over the period 1998-2006 on 4335 firms, are reported

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[29] We treat the severe sanction increases as a method to enhance enforcement and hence use the terms interchangeably.

[30] Note that Table 1 uses all observations for which data on total assets exists, not just the estimating sample for the regression analysis.

in Table 2. Note that this represents only about half the observations in Prowess for financial statement data, because of the more limited availability of share price data used to construct q. Also, missing values for many of the control variables reduce the sample size in many of the regressions. Note also that the regressions (as described below) are implemented in first differences, leading to the loss of the first year's observations even in the most basic specification.

V.   EMPIRICAL SPECIFICATION

The central hypothesis of the paper concerns the interaction between corporate governance reforms and enforcement provisions. As described above, different groups of firms became subject to the Clause 49 reforms over the period 2000-2002. By 2003, all firms that were affected by the 2000 Clause 49 reforms were expected to be in compliance with its provisions. However, there was no enforcement of these rules, except through the threat of delisting. The aim of the basic analysis is to test the impact of the stronger enforcement provisions that took effect in 2004 (involving severe financial penalties). These applied to all Clause 49 firms (but not of course to firms that were not subject to the reforms).

In testing the hypothesis that stronger enforcement of Clause 49 provisions led to an increase in firm value, the basic empirical specification is the following:

$$q_{it} = \beta(CL49_i * Post2003_t) + \mathbf{X}_{it}\gamma + \mu_i + g_i t + \delta_t + v_{it} \qquad (2)$$

where q_{it} is Tobin's q (defined as in Eq. (1) above) for firm i in year t. $CL49_i$ is an indicator variable for those firms that were subject to Clause 49 by 2003. Note that, strictly speaking, the applicability of Clause 49 is a time-varying variable, with the rules applying to different firms at different times. However, all of this variation occurred before 2003, and so plays no role in this particular test (this additional variation is used in some supplementary analyses – see below). $Post2003_t$ is an indicator for years

following 2003 (i.e. 2004-2006). The terms μ_i and δ_t are firm and year fixed effects, respectively, and ν_{it} is the error term.

$\mathbf{X}_{it}$ is a vector of control variables. In the basic specification, it includes the following. Changes in firm size over time are controlled for using sales.[31] Revenue from exports is often viewed as a particularly powerful sign of successful performance by Indian firms, and so total exports are included as a further control. A number of variables are included to correct for potential mismeasurement of q. Given the issue of whether the full book value of debt is captured by the "borrowings" variable in Prowess (see above), current liabilities are included as a control. Intangible assets may be poorly measured in the book value of assets (the denominator in Eq. (1)), so the two measures of research and development (R&D) expenditures provided in Prowess (R&D on the capital account and R&D on the current account) are included, along with advertising expenses. Finally, to control for changes over time in the risk associated with a firm's stock, a measure of stock price volatility is also included.[32] A number of additional control variables are used in robustness checks, as described below.

The basic approach used in Eq. (2) is a differences-in-differences approach, where the hypothesis is that $\beta > 0$, with Clause 49 firms constituting the "treatment" group and unaffected firms the "control" group. An important class of alternative explanations for any increase in firm value among Clause 49 firms is that, being larger and presumably more successful, these firms may have experienced more rapid growth in value for reasons unrelated to the reforms. Thus, it is vital to include (in addition to firm fixed effects and year effects) the firm-specific time trends $g_i t$; here, g_i represents the firm-specific growth rate in q for firm i (thus, the specification in Eq. (2) could be

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[31] Prowess also reports a "net sales" variable that deducts payments of indirect taxes; the results are consistent using net sales rather than sales.

[32] The volatility measure uses monthly data on firms' stock prices. For firm i in year t, it represents the standard deviation of firm i's monthly price across the months of year t; this is annualized, and scaled by firm i's mean (annual) stock price in year t.

described as a "random growth" or "random trend" model). Hence, the estimated effect β represents the extent to which a Clause 49 firm's value deviates from its underlying trend following the reforms, relative to the corresponding deviation for unaffected firms.[33]

The specification in Eq. (2) can be implemented using estimation in first differences (see Wooldridge, 2002). This involves estimating:

$$\Delta q_{it} = \beta\Delta(CL49_i{}^*Post2003_t) + \Delta\mathbf{X}_{it}\gamma + g_i + \zeta_t + \eta_{it} \tag{3}$$

where $\Delta q_{it} = q_{it} - q_{i,t-1}$, and other changes are defined analogously; ζ_t is the year effect and η_{it} the error term in the first-differenced model (representing the changes in δ_t and v_{it} , respectively). Note that the firm effect μ_i in Eq. (2) drops out of Eq. (3). However, the firm-specific trend g_i can be estimated by including a firm effect in the estimation of Eq. (3).

VI. RESULTS

The results using the specification described above are reported in Table 3. In the first column, the specification is that in Eq. (3), excluding the firm-specific trend g_i (note that this first-differenced specification is essentially equivalent to one including firm and year effects). Using the full dataset of over 4000 firms over the period 1998-2006, there is a positive and statistically significant association between the Clause 49 enforcement provisions and firm value (this and all subsequent results use robust (White, 1980) standard errors that are clustered at the firm level).[34] Adding firm-specific time trends (Column 2) does not substantively change this result. In column 3, the basic set of controls is added. While this reduces the sample size considerably due to the

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[33] It might be thought that in many contexts, q (being essentially a ratio of market to book valuation) would not exhibit a time trend, tending to converge towards one. However, in this dataset, there is a marked tendency for q to increase over time; for instance the mean (Winsorized) q in 1998 is about 0.7, while that in 2006 is about 1.2.

[34] Footnote about Bertrand, Duflo and Mullainathan (2004) . . .

unavailability of data on some of the controls,[35] the basic result is strengthened: Clause 49 enforcement appears to lead to a positive effect on the value of affected firms (relative to unaffected firms), and this effect is statistically significant at the 1% level. The magnitude of this effect is also substantial: the estimated coefficient of 0.08677 implies an increase in q of nearly 0.09 due to Clause 49 enforcement. This represents about 10% of the mean value of q (Winsorized at 5%) in the entire dataset of 0.87. It is even larger relative to the mean q (about 0.7) for Clause 49 firms in 2003.[36] The control variables in column 3 generally have the expected signs; for instance, the coefficient on the volatility measure is negative. Others (such as the apparently negative effect of sales) may be more surprising, but none of the coefficients on the controls are statistically significant.[37]

This basic result is robust to a variety of checks. The set of firms in Columns 1-3 includes all corporations for which data is available, including government-owned firms (SOEs) and firms in which foreign corporations own controlling stakes.[38] These are included in the basic analysis, as Clause 49 in theory applied to them as well. However, it might be the case that foreign-controlled firms follow home country governance rules, and so are unlikely to be affected by the reforms. SOEs may in practice be insulated from the reforms or from their enforcement,[39] and in any event may not solely be motivated by profit maximization (Goswami (2003)). However, as shown in column 4, the results are robust to omitting foreign-controlled and government-controlled firms from the sample.

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[35] For instance, the monthly stock price data used to compute the volatility measure is unavailable for 2006, so including this control eliminates that year from the estimating sample.

[36] This is the "average treatment effect on the treated" (ATT).

[37] Scaling the control variables (apart from volatility and sales, which proxies for firm size) by the book value of assets does not affect the basic results.

[38] Foreign-controlled firms are identified as those reported as "Private (Foreign)" in the business group data, while government-owned firms are reported as either "Central Govt. - Commercial Enterprises" or "State Govt. - Commercial Enterprises."

[39] The recent enforcement proceedings in India suggest that SOEs will not be exempt from enforcement. *See* Rukhaiyar, *supra* note 26.

Column 3 only includes a basic set of controls, but the basic results are robust to the addition of a variety of other controls, such as additional measures of accounting performance. For instance, adding profits before depreciation, interest and taxes (PBDIT; a standard measure of accounting performance used for instance by Bertrand *et al*. (2002)) or a measure of accounting returns (PBDIT divided by the book value of assets) does not affect the basic results. A concern with any regression modeling firm value is that q may be affected by forward-looking information about firms' future prospects that is observable to investors but not to the researcher. These unobservable factors can be proxied by future sales growth (computed as the change in sales from year t to year $(t + 1)$, divided by sales in year t). Adding this variable to the specification leads to highly consistent results.[40]

The control group of unaffected firms in Columns 1-3 of Table 3 includes all corporations for which data is available. For a variety of reasons, the smallest firms in the dataset may not constitute good controls for the generally much larger firms that are subject to Clause 49. One approach to addressing this problem is to restrict attention to those non-Clause 49 firms that are relatively close to the cutoff for the applicability of Clause 49. Column 1 of Table 4 reports the results using a sample that excludes all firms with a maximum value of paid-up share capital below Rs. 1.5 *crores* (roughly US$375,000).[41] The basic result remains significant, and the coefficient is even larger than in the basic specification. Thus, it appears that the result in Table 3 is not driven by the presence in the control group of some extremely small firms.

As discussed above, there were three groups of firms subject to Clause 49: a small group of very large firms (with listing flag A on the Bombay stock exchange) that

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[40] Footnote about using market/book and market/sales as the dependent variable …

[41] The Clause 49 rules refer to whether a firm has *ever* had a value of paid-up share capital exceeding Rs. 3 *crores*, so the sample cutoff is formulated similarly to include all firms that *ever* (at any point in the sample period) had a value of paid-up share capital exceeding Rs. 1.5 *crores*.

were expected to comply in 2001 (Group 1), a larger group of medium-sized firms that were expected to comply in 2002 (Group 2), and a large group of smaller firms that were expected to comply in 2003 (Group 3). Group 3 firms were defined as having a value of paid-up share capital exceeding Rs. 3 *crores*. As shown in Table 1, Group 3 firms (while subject to Clause 49) are fairly comparable in terms of asset size to those firms that were not subject to Clause 49. In particular, mean asset size is essentially the same for Group 3 firms as for non-Clause 49 firms with a maximum value of paid-up share capital above Rs. 1.5 *crores* (these are the non-Clause 49 firms that fall closest to the cutoff for the applicability of the rules).

The central challenge associated with inferring the causal impact of the reforms is of course the ability to identify a valid comparison group for those firms subject to the reforms. The largest firms in the Indian economy (Group 1) were all subject to Clause 49, and there is clearly no good unaffected comparison group for these firms. What the discussion above suggests, though, is that there may be a reasonable comparison group for the smaller firms subject to Clause 49. Thus, column 2 of Table 4 reports the results of a specification that excludes the Group 1 firms (i.e. 165 very large firms). The comparison group remains the non-Clause 49 firms that fall closest to the cutoff for the applicability of the rules (those with a maximum value of paid-up share capital above Rs. 1.5 *crores*). Again, the results are highly robust, suggesting that the estimated effect of Clause 49 enforcement is not driven by factors peculiar to the very large firms in the dataset. Finally, column 3 of Table 4 also excludes the medium-sized firms (Group 2). This reduces the sample by about 1000 firms (in addition to the 165 Group 1 firms that are also excluded), and leaves a remaining group of Clause 49 firms (Group 3) that is highly comparable in terms of asset size to the control group (non-Clause 49 firms with a maximum value of paid-up share capital above Rs. 1.5 *crores*). Even in this setting, the basic result is robust, and indeed the coefficient is larger in magnitude than in Table 3.

Notwithstanding the robustness of the results in Table 4, there remains a potential concern about differences between Clause 49 and non-Clause 49 firms in terms of the criteria used in the law. Specifically, even among a set of firms with roughly similar asset sizes (such as Group 3 and non-Clause 49 firms with paid up share capitalization over 1.5 *crores*), does the fact that some of these firms have larger paid up share capitalization confound the results? Recall that paid up share capitalization is essentially the product of the number of shares outstanding and the "face value" at which shares were originally issued. These were determined at the time of incorporation in the past or when the shares were originally issued (often decades before the sample period in this analysis). Thus, for this to confound the results, it would have to be the case that firms that had higher paid up share capitalization at the time of incorporation or when shares were issued would have therefore experienced an increase in q (unrelated to the Clause 49 reforms) in 2004, relative to firms that had lower original paid up share capitalization, but similar asset size as of 2004. Clearly, this seems highly unlikely, especially given the various controls for changes in firm characteristics in 2004 that are employed.

VII. INTERPRETATION AND EXTENSIONS

Thus, it appears that the basic result reported in Table 3 is quite robust to restricting both the set of affected firms and the control group of unaffected firms to those that are closer in size to the threshold established for the application of the new corporate governance rules. Moreover, it should be remembered that the analysis allows for firm-specific trends in q, and so even firms of very different sizes can serve as reasonable controls, as long as their trends in q are not affected by some other confounding factor that coincides with the reforms. Overall, the results suggest that the stronger sanctions created in 2004 led to a significant increase in the value of affected firms relative to that of unaffected firms.

This conclusion raises an immediate question: if the reforms had the ability to raise firm value, why had firms not simply adopted provisions such as appointing outside directors and engaging in broader disclosure voluntarily? Of course, controlling shareholders may not necessarily wish to maximize firm value, as they also care about private benefits of control. However, the debate in India prior to the reforms strongly suggests that firms were very interested in gaining access to capital from outside shareholders (especially foreign investors) (Khanna (2008)). Even so, voluntary adoptions of stronger governance provisions at the firm level may not in themselves be sufficiently credible to investors, as the only sanctions on firms that renege are reputational. Rather, it appears that a mandatory set of governance rules, backed up by strong enforcement provisions, was perceived to be necessary in order to realize the potential gains in firm value from better governance.

This interpretation of our findings may help account for one of the unusual features of the adoption of Clause 49, namely, that the reform process was initiated and supported by private industry rather than triggered by an Enron-like scandal (Goswami (2003)). [42] The CII drafted the first voluntary corporate governance code in India and it was that code that formed the basis for the eventual Clause 49.[43]   This code was somewhat unusual because it placed constraints on the same managers and controlling shareholders who comprised the membership of CII. However, industry pushed for governance reform because access to capital was necessary to take advantage of the opportunities created by liberalization. The CII code in many respects was designed to attract foreign investors to Indian firms as many of its provisions are based on "best practices" at the international level. However, the voluntary code was not perceived to have generated a very high level of foreign investor interest and we see CII lobbying

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[42] There were some scandals in the Indian markets, but none that seemed to trigger the Clause 49 reform process. The stock market scandals often involved misdealings by brokers and traders rather than the more standard corporate governance concerns.

[43] See CONFEDERATION OF INDIAN INDUSTRY, DESIRABLE CORPORATE GOVERNANCE: A CODE (1998).

SEBI to enact governance reform.   Enacting these reforms as law was apparently necessary to bolster the credibility of governance reform.   Presumably, making governance part of the law would enhance its credibility and probably provide some enforcement mechanism. In essence, Indian firms wished to tie their hands with respect to governance practices, and could only do so by becoming subject to a stronger enforcement regime.

These results also point to a further question: if corporate governance reforms and enforcement increased firm value, what was the channel through which this effect operated? One possibility is that the reforms led to reduced diversion from minority shareholders, for instance in the form of tunneling. Bertrand *et al*. (2002; hereafter BMM) develop a general approach to identifying tunneling within business groups. While they propose a number of tests, the simplest and most intuitive is the following. Consider a given exogenous shock to the earnings of firms in a given industry. This shock should affect the reported earnings of a stand-alone (non-group) firm more than it does the reported earnings of a group firm. Suppose that the group firm is one in which the controlling shareholders have low cash flow rights; then, they will have an incentive to tunnel money out of the firm (through high-interest loans, the manipulation of transfer prices, or various other means). Similarly, if the group firm is one in which the controlling shareholders have high cash flow rights, it will also have reduced sensitivity to industry-level shocks, as money is tunneled into the firm regardless of its industry's performance.

BMM implement their test through the following specification:

$$y_{it} = \beta_0 \hat{y}_{it} + \beta_1 (GRP_i * \hat{y}_{it}) + \mathbf{X}_{it}\gamma + \mu_i + \delta_t + \nu_{it} \tag{4}$$

where y_{it} is firm i's income in year t, and $\hat{y}_{it}$ is a measure of the exogenous shock experienced by firm i's income in year t (calculated using industry-level average income for that year). GRP_i is an indicator variable for firms that are reported by Prowess as

belonging to a business group, $\mathbf{X}_{it}$ is a vector of controls, μ_i is a firm effect, δ_t is a year effect, and v_{it} is the error term. Tunneling is inferred to exist under this approach if $\beta_1 < 0$.

The most straightforward approach to testing the hypothesis that Clause 49 reforms (and in particular their enforcement from 2004) reduced tunneling is to run Eq. (4) separately on subsamples of the data before and after the introduction of financial sanctions (i.e. for the periods 1998-2003 and 2004-2006). A more formal test can be constructed by augmenting Eq. (4) as follows:

$$y_{it} = \beta_0 \hat{y}_{it} + \beta_1(GRP_i * \hat{y}_{it}) + \beta_2(CL49_i * Post2003_t) + \beta_3((CL49_i * Post2003_t) * (GRP_i * \hat{y}_{it}))$$

$$+ \mathbf{X}_{it}\gamma + \mu_i + \delta_t + v_{it} \tag{5}$$

Here $CL49_i * Post2003_t$ is the interaction term that represents whether firm i in year t is subject to the Section 23E financial penalties for Clause 49 violations adopted in 2004. The central question is whether the relative under-response of group firms to industry-level shocks is reduced by Clause 49 enforcement (i.e. $\beta_3 > 0$).

[Findings To Come].

VIII. CONCLUSION **[To be completed]**

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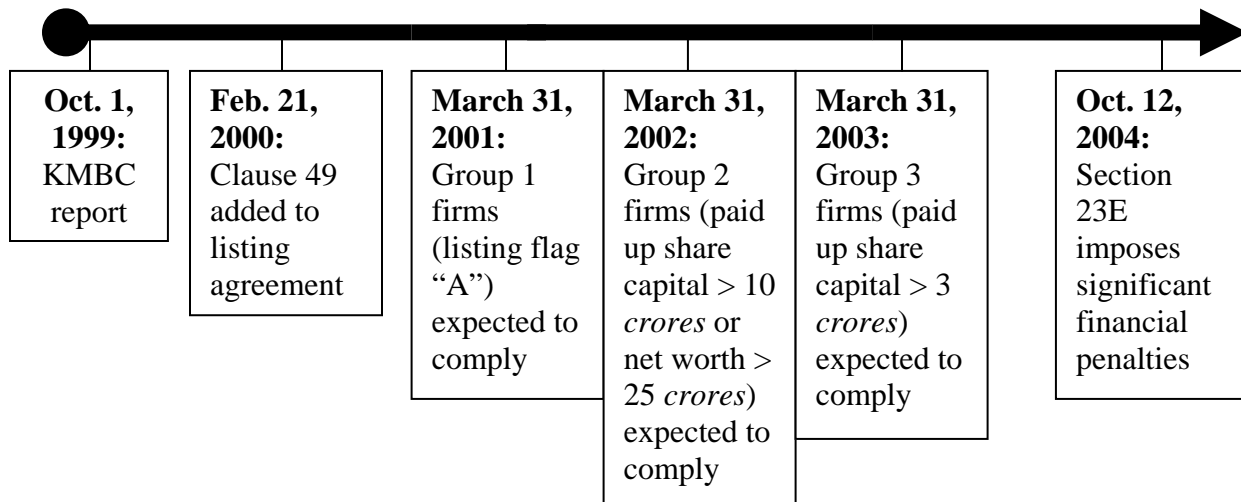
Figure 1: A Timeline of Clause 49 Reforms

| Oct. 1, 1999: KMBC report | Feb. 21, 2000: Clause 49 added to listing agreement | March 31, 2001: Group 1 firms (listing flag "A") expected to comply | March 31, 2002: Group 2 firms (paid up share capital > 10 *crores* or net worth > 25 *crores*) expected to comply | March 31, 2003: Group 3 firms (paid up share capital > 3 *crores*) expected to comply | Oct. 12, 2004: Section 23E imposes significant financial penalties |

Table 1: Sizes of Clause 49 and non-Clause 49 Firms

	Number of (Firm-Year) Observations	Mean of Total Assets (in *crores* of Rupees)	Standard Deviation
All firms	56026	582.58	6099.93
All Clause 49 firms	40442	799.94	7167.60
Clause 49: Group 1 (application in 2001)	1730	10126.52	31165.76
Clause 49: Group 2 (application in 2002)	19545	733.14	3475.74
Clause 49: Group 3 (application in 2003)	19167	26.25	72.5
All Non-Clause 49 firms	15584	18.50	92.13
Non-Clause 49 firms with max share cap > 1.5 *crores*	4208	27.21	138.47

Table 2: Summary Statistics

Variable	Mean	Standard Deviation	Number of (Firm-Year) Observations
Tobin's q (Winsorized at 5% from above)	0.87	0.67	28672
(Clause 49)*(Post2003)	0.29	0.46	28672
Sales (Rs. *crores*)	356.56	3261.19	25415
Exports (Rs. *crores*)	36.26	352.77	25415
Current Liabilities (Rs. *crores*)	92.61	943.50	28672
R & D, capital account (Rs. *crores*)	0.32	5.18	28672
R & D, current account (Rs. *crores*)	18.80	506.44	28512
Advertising Expense (Rs. *crores*)	1.82	15.66	28672
Volatility	1.08	1.10	18550

Table 3: Corporate Governance Reforms, Enforcement, and Firm Value – Basic Results

Changes in:	(1) All Firms	(2) All Firms	(3) All Firms	(4) Excluding Foreign and Government Controlled Firms
		Dependent variable: Changes in Tobin's q (Winsorized at 5% from above)		
(Clause49-firm) *(Post-2003)	0.06592 (0.02141)***	0.05583 (0.02384)**	0.08677 (0.03255)***	0.07952 (0.03342)**
Sales			-0.00001 (0.00001)	-0.00003 (0.00001)**
Exports			-0.00002 (0.00002)	0.00002 (0.00002)
Current Liabilities			-0.00004 (0.00002)*	-0.00002 (0.00003)
R & D (capital account)			-0.00105 (0.00067)	-0.00092 (0.00067)
R & D (current account)			-0.00001 (0.00001)	-0.00003 (0.00001)***
Advertising Expense			-0.00036 (0.00028)	-0.00121 (0.00027)***
Volatility			-0.00227 (0.00440)	-0.00109 (0.00518)
Year Effects?	Y	Y	Y	Y
Firm-Specific Time Trends?	N	Y	Y	Y
No. of Obs.	22964	22964	12869	11818
No. of Firms	4087	4087	2642	2471
R-squared	0.08	0.10	0.19	0.19

Robust standard errors (clustered at the firm level) in parentheses; * significant at 10%; ** significant at 5%; *** significant at 1%

Table 4: Corporate Governance Reforms, Enforcement, and Firm Value – Robustness Checks using More Comparable Groups of Firms

	(1)	(2)	(3)
	Dependent variable: Changes in Tobin's q (Winsorized at 5% from above)		
Treatment Group:	All Clause 49 Firms	Group 2 and 3 (Medium and Small) Clause 49 Firms	Group 3 (Small) Clause 49 Firms
Control Group:	Non-Clause 49 Firms with Max Share Cap > 1.5 *crores*	Non-Clause 49 Firms with Max Share Cap > 1.5 *crores*	Non-Clause 49 Firms with Max Share Cap > 1.5 *crores*
Changes in:			
(Clause49-firm)	0.13711	0.12035	0.11772
*(Post-2003)	(0.04436)***	(0.04425)***	(0.04966)**
Sales	-0.00001	-0.00001	0.00014
	(0.00001)	(0.00006)	(0.00004)***
Exports	-0.00002	0.00001	-0.00044
	(0.00002)	(0.00007)	(0.00082)
Current	-0.00004	-0.00028	-0.00192
Liabilities	(0.00002)*	(0.00008)***	(0.00090)**
R & D (capital	-0.00104	0.00027	0.02963
account)	(0.00067)	(0.00015)*	(0.03160)
R & D (current	-0.00001	-0.00019	-0.00149
account)	(0.00001)	(0.00005)***	(0.00039)***
Advertising	-0.00036	-0.00188	-0.00060
Expense	(0.00028)	(0.00073)*	(0.00634)
Volatility	-0.00123	-0.00169	-0.00379
	(0.00459)	(0.00510)	(0.00489)
Year Effects?	Y	Y	Y
Firm-Specific Time Trends?	Y	Y	Y
No. of Obs.	12553	11461	5183
No. of Firms	2565	2400	1402
R-squared	0.19	0.21	0.21

Robust standard errors (clustered at the firm level) in parentheses; * significant at 10%; ** significant at 5%; *** significant at 1%