

How does regulation affect the relation between family control and reported cash flows? Comparative evidence from India and the United States.

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ABSTRACT

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Research Question/Issue: We conduct a two-country study to understand (i) how family and non-family firms engage in classification shifting to manage reported operating cash flows in each country; (ii) how this behavior varies between the two countries; and (iii) how corporate governance regulation introduced independently in each country moderates the observed behavior.

Research Findings/Insights: We find that family ownership has different effects on quality of cash flow reporting in the two countries. Furthermore, country-level regulation moderates these effects differently. In particular, (i) firms in both countries engage in manipulating operating cash flows, but the evidence is stronger in the United States; (ii) family firms in India engage in more shifting than non-family firms, but this is not observed in the United States; and (iii) family (non-family) firms in India increase (reduce) shifting, whereas only non-family firms in the United States increase shifting after regulation. Since non-family firms in India raise more external capital than family firms after regulation, we infer that family firms in India reacted to this competition for capital and resorted to shifting.

Theoretical/Academic Implications: Most studies assume that the incentives for family firm behavior are the same in different market settings. However, factors such as efficiency of public capital markets, enforcement of corporate laws and regulations, and other institutional practices can cause differences in family firm behavior across different market settings. We investigate the behavior of family and non-family firms in each of these markets and study how a feature of the national governance system, regulatory design, moderates this behavior.

Practitioner/Policy Implications: Our findings should be useful to global investors and regulators in both emerging and developed markets. The results indicate how similar regulation in the two different settings can trigger differences in the behavior of firms.

Keywords: Corporate Governance, Cash Flow Manipulation, Classification Shifting, Operating Cash Flows, Family Firms, Regulation

How does regulation affect the relation between family control and reported cash flows? Comparative evidence from India and the United States.

INTRODUCTION

In an increasingly globalized and connected world, investors have demanded improvements from the capital markets around the world due to a variety of reasons. Countries responded by improving their institutions and firms by improving their governance practices, with an overall goal of improving the national governance bundle (e.g. see Millar, 2014). Reforms were introduced in developed markets to restore investor confidence that was lost due to excessive managerial greed and in emerging markets to attract capital, primarily from foreign investors. In this paper, we investigate how a particular bundle, country-level regulatory design and firm-level family ownership, has impacted financial reporting quality of firms in two contrasting settings, India and the United States (US), where the role played by intergenerational business families and enforcement of investor protection laws differ significantly. Our goal is to examine if this bundle leads to different outcomes in these two markets.

We are not the first to examine a particular governance bundle to understand corporate behavior. Focusing on two specific firm-level agency problems, Aslan and Kumar (2014) investigate how national governance factors can be combined into national governance bundles to address costs associated with controlling shareholders and debt financing. Kim and Ozdemir (2014) find that national governance systems based on investor protection, rule of law, open market institutions act as complements or substitutes to how boards are structured to perform their role as creators and protectors of wealth. Using a sample of large transnational firms, Markarian, Parbonetti, and Previts (2007) find that non-

Anglo Saxon firms have developed control mechanisms to emulate the Anglo-Saxon governance regime. We extend this literature to include the role of regulatory design.

We focus on family ownership since the literature has well documented that family owned businesses not only play an important role in emerging markets (Khanna & Palepu, 2000) but also continue to flourish in developed economies (see Anderson & Reeb, 2003). There are both benefits and costs to family control from the outside investor's perspective. Family members are actively involved in the business and thus able to monitor managers better (James, 1999); however, since they have substantial control through ownership and board representation, they extract private benefits (Shleifer & Vishny, 1997). Examining the role of national governance systems, Rees and Rodionova (2015) find that in liberal as compared to coordinated (i.e. open vs. closed) market economies, improvements in governance can lead to better environmental and social outcomes even when equity is closely held by institutional investors but not by families, thus pointing out the importance of diversified ownership. However, given informal mechanisms that exist in different parts of the world, some recent papers question whether national governance systems should converge (e.g. Buchanan, Chai, & Deakin, 2014; Millar, 2014). It is in this context we try to understand the efficacy of corporate governance regulation in these two countries by examining how family firms react to it. In particular, we examine how (i) family firms react to regulation as compared to non-family firms in each market; (ii) family firms react to regulation across these two markets; and (iii) family firms react to regulation as compared to their non-family counterparts across these two markets.

We use quality of operating cash flows, as reported, to assess the outcome of the governance bundle mentioned earlier. Since cash flows play an important role in contracting e.g. debt covenants and executive compensation, an increasing number of analysts have started to issue cash flow forecasts (DeFond & Hung, 2003). Further, stock prices react

positively when cash flow surprises are positive (Brown, Huang, & Pinello, 2013). Consequently, the probability of manipulation of operating cash flows has increased over the years (Mulford & Comiskey, 2005). We find that cash flow manipulation through classification shifting (i) occurs in both countries, but is stronger in the US; (ii) is higher for family firms than non-family firms in India, but not in the US; (iii) has increased for family firms in India subsequent to corporate governance regulation, and (iv) has decreased (increased) for non-family firms after regulation in India (the US) along with a simultaneous increase (decrease) of external financing.

CHOICE OF A TWO-COUNTRY SETTING

Two country studies are not uncommon in the regulation and governance literature. Huberman (2013) examines the effect of labor regulation in Belgium and Brazil in the 1920s; whereas both replaced labor with capital due to increased regulation, Belgium flourished by increasing labor productivity, thus becoming a better exporter whereas Brazil did not reap similar gains, primarily because international trade was collapsing due to increased tariffs. Elshandidy and Neri (2015) find that while firms with efficient boards in Italy and United Kingdom have better (mandatory and voluntary) disclosure of risk, firms with better boards in Italy that disclose risk voluntarily show improvements in liquidity. Lattemann, Fetscherin, Alon, Li et al. (2009) contrast the Corporate Social Responsibility (CSR) activities of firms in China and India finding that Indian firms communicate CSR due to rule-based rather than relation-based governance environment.

Multi-country studies have been carried out since it is difficult to conclude whether the results of single-country studies are generalizable. These studies use a large set of diverse countries (e.g. Leuz, Nanda, & Wysocki, 2003), exploring legal origins and other factors to understand the differences that exist. However, Black, De Carvalho, Khanna, Kim et al.

(2014) identify three limitations in multi-country studies: construct validity, lack of time series data and endogeneity. We resolve construct validity by designing our study to examine one country from two contrasting markets, developed and emerging. Our choice of countries, India and US, have a long history of corporate activity, with well populated databases archived over a sufficiently long time horizon. Finally, the endogeneity problem in a multi-country setting is eliminated in our study, since both the countries have been subjected to a similar natural experiment i.e. regulation. In addition, since these two countries have the same legal origin, similar political systems and history of family owned enterprises, any structural reasons that may cause differences in outcomes to a regulation are eliminated. So any dissimilarities we observe can probably be attributed to variation in enforcement and/or the influence of family firms in overall development of the economy.

FAMILY FIRMS, REGULATION AND ENFORCEMENT IN INDIA AND THE UNITED STATES

Family Businesses

Ownership by Indians in the corporate sector started in the 19th century with setting up of textile mills. Most of the corporate growth up until the middle of the 20th century was from family funds and retained earnings of these Indian owned companies (Goswami, 1989). Indian owners would retain control over the companies in addition to performing the other functions of a promoter. In contrast, given the strong rule of law and well-developed institutions in the United States, family firms are not expected to play a role in the corporate market. However, large family businesses have been around in the United States since the industrial revolution, with household names such as Kohler and S.C. Johnson being around since the mid-1800s. Using data from 1992-99, Anderson and Reeb (2003) report that 35% of the firms in the S&P 500, representing 18% of the equity are owned by founding families.

At present, about 34% (28%) of the Indian (US) firms are family-owned, accounting for approximately 27% (22%) of assets and 42% (23%) of profits. For our sample, we find that the ten largest family firms account for about 21% (12%) of the market capitalization. For the Indian sample, these firms span almost all major industries including information technology, financial services, manufacturing, etc. Insider ownership is considerably higher in the largest family firms in India compared to the corresponding non-family firms (52 vs. 32%) and is starkly higher than in the largest family firms in the US (52 vs 11.5%). This difference would be even wider, but for 51% and 25% insider stake in Wal-Mart Stores Inc. and Oracle Corp., respectively. And insider ownership in the largest non-family firms in the US is almost non-existent at less than 1%.

Corporate Governance Regulation

The Confederation of Indian Industry (CII), a leading association of businesses in India, took the first step in recommending desirable corporate governance practices by Indian companies in 1998. Subsequently, the Securities and Exchange Board of India (SEBI) and the Ministry of Corporate Affairs (MCA) took a number of initiatives over the next several years to improve the corporate governance systems and accounting practices of companies that resulted in two major outputs (i) Clause 49 of the Listing Agreement of the stock exchanges, which was initiated in 2000 and finalized in 2004, and became effective from 1st January, 2006 and (ii) updated Companies Act which became effective 29th August, 2013. Clause 49 requires a separate section in the annual report discussing formation of independent board and audit committees, adherence to the appropriate accounting standards, disclose any changes in the company's accounting policies, report any related party transactions and certification by company executives.

The United States has been traditionally viewed to have a market-based approach to corporate governance characterized by widely dispersed corporate ownership. Financial intermediaries such as auditors and analysts gather information and act as gatekeepers to the capital markets. An active market for corporate control disciplines poorly performing firms.¹ But major scandals such as Enron and WorldCom questioned the effectiveness of such market-based governance systems. The political reaction to these scandals, culminating in the passage of the Sarbanes Oxley Act (SOX) in 2002 fundamentally changed the style of corporate governance in the US. The main objectives of the law were to improve auditor independence, financial reporting and disclosure quality, corporate governance, securities research, and enforcement of federal securities laws, including use of criminal penalties (Jackson, 2010). Coates and Srinivasan (2014) review findings of more than 120 academic papers and conclude (i) that while direct costs of implementing SOX were high for small firms, it has gone down over time, (ii) there is no conclusive evidence on the indirect costs of SOX such as fewer initial public offerings or loss of foreign listings, and (iii) improvement in financial reporting quality is clearly a benefit of SOX, but research on causal attribution is weak.

Enforcement

While a large number of cases have been filed by the Company Law Board (CLB) to enforce the Companies Act in India, the legal system is extremely slow in dispensing judgment. As of 2003-04, 45,562 cases were pending judgment (Sarkar and Sarkar, 2012). From its inception in 2003 to 31st March, 2015, the Serious Fraud Investigation Office (SFIO) of the MCA has filed only 1,088 cases in designated courts, 61 cases before the professional accounting body (The Institute of Chartered Accountants of India, ICAI) and 16 cases before

the CLB. The Securities Laws are enforced by SEBI, and sanctions can involve monetary fines, cancellation of registration and prosecution of involved parties.

Sarkar and Sarkar (2012; see Table 2.8) report that while India ranked favorably in Efficiency of the Judicial System (8 vs. 10 for the US), it ranked poorly in Rule of Law (4.17 vs. 10 for the US). This suggests investor protection rules exist on paper in India with poor enforcement (Narayanaswamy, Raghunandan, & Rama, 2012). The World Bank's Report on the Observance of Standards and Codes on Accounting and Auditing in India (ROSC, 2004) also concludes that proper enforcement of laws and regulations in India is yet to be accomplished. In contrast, Karpoff, Lee, and Martin (2008) report that 28% of all individuals prosecuted for fraud by Securities and Exchange Commission and the Department of Justice in the US between 1978 and 2006 faced criminal charges, including average jail sentences of 4.3 years.²

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Performance and Transparency of Family Firms

Bertrand and Schoar (2006) ask the core question related to research on family firms - why do they exist? Are they in response to institutional and market voids, thus playing a beneficial role, or are they due to cultural factors that may be costly for corporate decisions and economic outcomes?

There are several reasons offered to support the efficiency argument for existence of family firms e.g. (i) such firms have a long-term perspective e.g. Le Breton-Miller and Miller (2006), (ii) can create good business as well as political connections (Faccio & Parsley, 2009) enabling easier access to resources and network benefits, (iii) have better brand identity and customer service (Micelotta & Raynard, 2011), and (iv) take more timely decisions (Kets de

Vries, 1993). However, family control can be detrimental as well, e.g. family owners may: (i) exploit other investors when the institutional environment is weak, or sustain corrupt politicians with whom they exchange favors (Morck & Yeung, 2004), (ii) use family representatives to exert influence, and increase agency costs to minority shareholders (e.g. Chen, Gray, & Nowland, 2013, in Taiwan), and (iii) engage in inter-corporate capital transfers harming minority shareholder when part of a business group (Lins & Servaes, 2002). These benefits and costs of family control have also been referred to as alignment and entrenchment effects in the literature (see Shleifer & Vishny, 1997).

The evidence on performance of family firms is mixed. Several studies have found performance of family firms to be superior e.g. Anderson and Reeb (2003) in the United States, Essen, Carney, Gedajlovic, and Heugens (2015) across 27 European nations; Khanna and Palepu (2000) for Indian business groups, Jin and Park (2015) in Korea. However, many other papers have found that family firms underperform e.g. Claessens, Djankov, Fan, and Lang (2002) using several Southeast Asian countries. Anderson and Reeb (2004) find that family controlled firms in the S&P 500 index with sufficient independent directors to represent outside shareholders, perform better than those with insider controlled boards.

The evidence on transparency by family firms is also mixed. In the United States, Anderson, Duru, and Reeb (2009) and Bardhan, Lin, and Wu (2015) find more internal control weaknesses and higher opacity in family firms; however, Ali, Chen, and Radhakrishnan (2007) find better earnings quality but fewer governance related disclosures. At the international level, several papers find that earnings management increases with the divergence of cash-flow and control rights e.g. Gopalan and Jayaraman (2012) using data from twenty-two countries; Bona-Sánchez, Pérez-Alemán, and Santana-Martín (2014) in Europe, when politicians are present on corporate boards. Choi, Lee, and Park (2013) find that CSR activities are abused by Korean firms to conceal poor earnings quality. Prencipe,

Bar-Yosef, Mazzola, and Pozza (2011) find that family firms in Italy engage in less income smoothing and CEO duality reduces it further. Independent (diligent) boards in Hong Kong (India) result in higher quality financial reporting (see Jaggi, Leung, & Gul, 2009; Sarkar, Sarkar, & Sen, 2008). Haw, Ho, and Li (2011) find evidence of classification shifting of core expenses to noncore special items in order to boost core earnings in eight countries in East Asia during 2001-04.

In summary, while the overwhelming evidence suggests lower transparency when ownership is concentrated and investor protection is low, there are pockets of evidence that family firms can provide better quality disclosures when they decide to allow external monitoring by appointing independent board of directors and Big 4 auditors. Furthermore, the concern for reputation capital for family firms is higher in emerging economies because it can affect the cost of capital not just for one firm, but for all firms in the business group e.g. in India, Khanna and Palepu (2000) report superior performance by business-group affiliated firms; Gopalan, Nanda, and Seru (2007) find that such firms provide financially weaker firms intragroup loans to avoid default and any negative spillover effects; Basu and Sen (2015) find that group affiliated firms act efficiently when transferring funds to other group firms.

Earnings Management and SOX

The disclosures required by SOX reveal that internal control weaknesses result in problems in current accrual accounts such as accounts receivable and inventory (Ge & McVay, 2005). Cohen, Dey, and Lys (2008) find that while discretionary accruals increased steadily from 1987 to 2002, these have declined significantly after the passage of SOX. This decline has been partially substituted with an increase in real earnings management, and firms use it more to meet or beat analysts' forecasts (Lobo & Zhou, 2006). In spite of higher real earnings management, overall earnings quality has improved in the US (e.g. Koh,

Matsumoto, & Rajgopal, 2008). However, the literature has not investigated whether the quality of reported cash flows has changed due to SOX.

Cash Flow Shifting

Although earnings quality is generally used to evaluate financial transparency, it may be more appropriate to examine operating cash flow quality when firms are private, have concentrated ownership, or is under family control (Anderson et al., 2009) or when capital is raised through the debt or equity markets (Lee, 2012). Lee (2012) finds that firms manipulate cash flows³ for several reasons for e.g. for inter-temporal smoothing, when in distress, or to meet analyst forecasts. Since our focus is on family firm behavior, we examine classification shifting in the cash flow statement in order to evaluate quality of accounting information.

Hypotheses Development

The first question we ask is whether the level of cash flow shifting is different between the two countries, and if yes, why and where is it higher? *Ceteris paribus*, weaker investor protection should lead to lower quality accounting. By that logic, it is expected that India will exhibit lower quality accounting. However, can we assume that fundamental information, in particular operating cash flows, is of equal importance to investors in both the countries? We know that emerging markets are less efficient relative to developed markets and exhibit higher stock price synchronicity, and thus use less firm specific information (Chan & Hameed, 2006). In this case, *ceteris paribus*, incidence of cash flow shifting will be higher in the US. Given the countervailing effects of these factors, it is difficult to say which country will exhibit a higher incidence of cash flow shifting. However, due to differences in these factors between the two countries, it is expected that they will exhibit different levels of cash flow classification shifting.

Hypothesis 1: Due to differences in the level of investor protection and the use of fundamental information by investors between India and the US, firms in the two countries exhibit different levels of cash flow classification shifting.

Chen, Hou, Li, Wilson et al. (2014) find that in an unfavorable regulatory environment, family firms avoid the attention of government resulting in lower sales and workforce growth rates than non-family firms. While Lodh, Nandy, and Chen (2014) find a positive association between family ownership and business innovation in India, Chrisman and Patel (2012) find a negative association for family firms in the US. With regard to transparency, US family firms exhibit better earnings quality (Ali et al., 2007), whereas Chinese family firms display poor quality (Ding, Qu, & Zhuang, 2011). This suggests that family firms in different countries may behave differently due to different governance environments in each country.

Hence, the next question we ask is whether family firms in each of the two countries exhibit different levels of cash flow shifting than their non-family counterparts? And if there are any differences, are these differences similar in the two countries? The answers to our questions depend on the combined effect of two factors: the level of investor protection and the importance of operating cash flows to investors of family vs. non-family firms. Given that family firms across the world share common attributes, such as own businesses from a long-term perspective (Anderson & Reeb, 2003; Le Breton-Miller & Miller, 2006) and prefer to use internal finance or borrow rather than dilute their ownership stake (Jin & Park, 2015), it appears that operating cash flows may be equally important to lenders in family firms in both countries. In such a situation, it is expected that on a relative basis, cash flow classification shifting by family firms will be higher in India due to weaker investor protection.

Hypothesis 2: Family firms in both countries exhibit higher amount of cash flow classification shifting than non-family firms in that country, but this result is stronger in India than in the US.

The last question we ask is what is the effect of corporate governance regulation on cash flow shifting in the two settings? There are a few issues related to the corporate governance regulation in the two countries that need to be considered in framing the hypothesis. All laws are strictly enforced in the US and SOX was no exception with provisions that allowed for sanction of criminal penalties, whereas the situation in India was lax. *Ceteris paribus*, it is expected that shifting will decrease more in the US.

However, another factor that maybe important is the after effect of regulation on the firms' ability to raise capital. Although the high costs of implementing SOX resulted in fewer public offerings (Jensen, Marshall, & Jahera Jr., 2012), it did not create advantages or disadvantages for a firm to raise capital. The situation in India was slightly different: Clause 49 was adapted to improve the markets in India so that more capital would flow into the country. Family firms, most of which are organized as business groups in India, through the legacy of their operations enjoyed a reputation in the capital markets (Gopalan et al., 2007; Khanna & Palepu, 2000), which standalone firms did not have. By implementing better corporate governance practices, Clause 49 is likely to have leveled the playing field for both groups of firms to access the capital markets. In essence, the comparative advantage enjoyed by group-affiliated family controlled firms in raising external capital might have been reduced by Clause 49. So we expect that family firms in India responded to this regulation by engaging in shifting in order to mitigate this loss of comparative advantage. And given that enforcement in India is weak, we expect family firms to have actually increased the amount of shifting after the regulation relative to the pre-regulation level.

Hypothesis 3: Family firms in both countries exhibit higher amount of cash flow classification shifting than non-family firms in that country, but shifting by family firms increases further after regulation in India and not in the US.

METHODOLOGY

Classification Shifting of Cash Flows

We follow the approach used by McVay (2006) in order to examine the existence of classification shifting. If it exists, we expect to see a negative association between the unexpected operating cash flows and investing/financing cash flows. We estimate unexpected operating cash flows as specified in Lee (2012) using the model developed by Dechow, Kothari, and Watts (1998). All variables are defined in Appendix 1.

$$OCF_{i,t}/AT_{i,t-1} = \beta_0 + \beta_1 (1/AT_{i,t-1}) + \beta_2 (SALE_{i,t}/AT_{i,t-1}) + \beta_3 (\Delta SALE_{i,t}/AT_{i,t-1}) + \epsilon_{i,t} \quad (1)$$

The above model is used for every industry-year combination with minimum 10 (15) observations for Indian (US) firms. Unexpected operating cash flows (UE_CFO) are calculated as the difference between reported operating cash flows and predicted operating cash flows. We examine evidence of classification shifting of cash flows using the following model. The coefficients are estimated using pooled data, with industry and time fixed effects.

$$UE_CFO_{i,t} = \alpha_0 + \alpha_1 CFF_{i,t} + \alpha_2 CFI_{i,t} + \alpha_3 ROA_{i,t} + \alpha_4 SIZE_{i,t} + \alpha_5 MTB_{i,t} + \alpha_6 DACC_{i,t} + \delta_{i,t} \quad (2)$$

If managers shift operating cash flows to financing (investing) cash flows or vice versa, we expect to see a negative slope for *CFF* (*CFI*). Operating cash flows can be affected by real actions, so we control for *ROA*; cash flows can be manipulated to either mask or substitute for accruals management (Zhang, 2006), so we control for *DACC*; *SIZE* and *MTB*

control for any variation due to firm size and growth opportunities. We use the model below to test whether the magnitude of cash flow shifting differs between family and non-family firms.

$$\begin{aligned} \text{UE_CFO}_{i,t} = & \alpha_0 + \alpha_1 \text{CFF}_{i,t} + \alpha_2 \text{CFI}_{i,t} + \alpha_3 \text{FF}_{i,t} + \alpha_4 \text{FF}_{i,t} * \text{CFF}_{i,t} + \alpha_5 \text{FF}_{i,t} * \text{CFI}_{i,t} + \alpha_6 \text{ROA}_{i,t} \\ & + \alpha_7 \text{SIZE}_{i,t} + \alpha_8 \text{MTB}_{i,t} + \alpha_9 \text{DACC}_{i,t} + \mu_{i,t} \end{aligned} \quad (3)$$

FF is equal to one if the firm belongs to a family, zero otherwise. The coefficients, α_4 and α_5 indicate whether the magnitude of shifting differs between family and non-family firms. The model below focuses on the effect of regulation on shifting for family and non-family firms.

$$\begin{aligned} \text{UE_CFO}_{i,t} = & \alpha_0 + \alpha_1 \text{CFF}_{i,t} + \alpha_2 \text{CFI}_{i,t} + \alpha_3 \text{REG}_{i,t} + \alpha_4 \text{REG}_{i,t} * \text{CFF}_{i,t} + \alpha_5 \text{REG}_{i,t} * \text{CFI}_{i,t} + \alpha_6 \\ & \text{FF}_{i,t} \\ & + \alpha_7 \text{FF}_{i,t} * \text{REG}_{i,t} + \alpha_8 \text{FF}_{i,t} * \text{CFF}_{i,t} + \alpha_9 \text{FF}_{i,t} * \text{CFI}_{i,t} + \alpha_{10} \text{FF}_{i,t} * \text{REG}_{i,t} * \text{CFF}_{i,t} \\ & + \alpha_{11} \text{FF}_{i,t} * \text{REG}_{i,t} * \text{CFI}_{i,t} + \alpha_{12} \text{ROA}_{i,t} + \alpha_{13} \text{SIZE}_{i,t} + \alpha_{14} \text{MTB}_{i,t} + \alpha_{15} \text{DACC}_{i,t} + v_{i,t} \end{aligned} \quad (4)$$

REG refers to regulation which is considered as the period after the introduction of Sarbanes-Oxley Act and Clause 49 in the United States and India, respectively. If a firm belongs to a year after 2002 (2006) in the United States (India), the dummy *REG* is one, zero otherwise. The coefficients on interaction variables ($\alpha_4, \alpha_5, \alpha_{10}$ and α_{11}) in the equation test the impact of regulation on cash flow misclassification.

Comparing Coefficients of India and the US

The models (2) – (4) above are estimated separately for each country, India and the US, to partially test each of the three hypotheses. However, each hypothesis also predicts the differences in behavior of sample of firms between the two countries. In order to test whether such differences exist, we calculate the differences in the coefficients of the corresponding

terms of each model between the two countries along with the t-statistics. The test statistic is computed as the difference between the two slopes divided by the standard error of the difference between the slopes, i.e. $t = (b_1 - b_2) / s_{b_1 - b_2}$, on $(n-4)$ degrees of freedom. The standard error of the difference between the slopes is $s_{b_1 - b_2} = \sqrt{(s_{b_1}^2 + s_{b_2}^2)}$.

Difference-in-difference Analysis

To understand the effect of regulation on the use of cash flow classification shifting by firms in the two countries, as an alternative to comparing the slope coefficients of the two countries in equation (4), we use a difference measure to test the effect of regulation on various corporate attributes related to classification shifting of cash flows. By subtracting the attribute values of each firm before the regulation from the corresponding values after the regulation, we allow for each firm to be its own control. This design is also consistent with “untreated control group design with pre-test and post-test” described in Cook and Campbell (1979, p. 103).

We conduct univariate tests of the difference of the *post - pre* measures between family and non-family firms, or between firms in India and the US. Using the difference measures (post-pre), we estimate the coefficients of the model below to evaluate our third hypothesis using an alternative approach compared to that mentioned above.

$$\begin{aligned} \Delta UE_CFO_{i,t} = & \alpha_0 + \alpha_1 \Delta CFF_{i,t} + \alpha_2 \Delta CFI_{i,t} + \alpha_3 IND_{i,t} + \alpha_4 IND_{i,t} * \Delta CFF_{i,t} + \alpha_5 IND_{i,t} * \Delta CFI_{i,t} \\ & + \alpha_6 FF_{i,t} + \alpha_7 FF_{i,t} * IND_{i,t} + \alpha_8 FF_{i,t} * \Delta CFF_{i,t} + \alpha_9 FF_{i,t} * \Delta CFI_{i,t} + \alpha_{10} FF_{i,t} * IND_{i,t} * \Delta CFF_{i,t} \\ & + \alpha_{11} FF_{i,t} * IND_{i,t} * \Delta CFI_{i,t} + \alpha_{12} \Delta ROA_{i,t} + \alpha_{13} \Delta SIZE_{i,t} + \alpha_{14} \Delta MTB_{i,t} + \alpha_{15} \Delta DACC_{i,t} \\ & + U_{i,t} \end{aligned} \quad (5)$$

IND is a dummy variable, which equals one for Indian firms and zero otherwise. The coefficients on interaction variables ($\alpha_4, \alpha_5, \alpha_{10}$ and α_{11}) in the equation test the impact of firm being located in India on how cash flow misclassification has changed due to regulation.

DATA AND SAMPLE SELECTION

We collect data from two different databases. The data for the Indian sample is obtained from Prowess, compiled by the Centre for Monitoring Indian Economy (CMIE). Prowess is the most comprehensive database of financial information on Indian companies, and has been used in several studies e.g. Khanna and Palepu (2000), Gopalan et al. (2007). The main source of data for Prowess is annual reports of individual firms. The data for the US is obtained from Compustat, which is compiled by Standard and Poors (S&P). For the US sample, the family firm information is obtained from combining the datasets used in Anderson and Reeb (2004), and in Anderson et al. (2009) and Anderson, Reeb, and Zhao (2012). The authors created the family firm indicator based on proxy information filed with SEC; they use 5% ownership by family as the cutoff to determine family control. For the India sample, we created the family firm status by examining if a firm's founder or their descendants are part of the board of directors. We go through the firm's history to make sure that the founder is an individual or group of individuals. The sample selection steps are outlined in Table 1.

/ INSERT TABLE 1 ABOUT HERE/

RESULTS

Descriptive Statistics and Univariate Analysis

The descriptive statistics for the two samples are provided in Table 2. Panel A contains means and medians for India and the US, and the associated differences in means. Panel B contains means for family and non-family firms in India and the US, and the associated differences. We find that the Indian firms compared to the US firms have (i) lower total assets, (ii) lower cash flow from operations, higher cash flow from financing and

investing, (iii) similar discretionary accruals, (iv) higher external financing, (v) lower market-to-book ratio, (vi) higher of return on assets, and (vii) lower unexpected operating cash flow. In essence, over the entire 15 year period, Indian firms appear to be cheaper and smaller, these invest more and raise more capital from external sources.

/ INSERT TABLE 2 ABOUT HERE/

Panel B suggests that in India, family firms compared to non-family firms (i) have higher (lower) total assets, (ii) generate more cash from operations, (iii) raise less finance from outside, (iv) have higher market-to-book ratio, (v) higher return on assets, and (vi) lower distress risk. Additionally, Indian family firms compared to the US family firms (i) have lower total assets, (ii) generate less cash from operations, (iii) invest considerably more, (iv) raise more finance from outside, (v) have higher return on assets, and (vi) lower market-to-book ratio. Overall, Indian family firms appear to be cheaper and smaller, these invest more and raise more capital from external sources than the US family firms.

Correlations

The contrasting attributes of family firms in two countries are evident from the correlation in Table 3. Family firms in India (the US) are positively (negatively) correlated with total assets, size, operating cash flows, unexpected operating cash flows, market-to-book ratio, and are negatively (positively) correlated with investing cash flows. Essentially, family firms in India are large, have higher total and unexpected operating cash flows, market valuation and invest more into their businesses. The contrasting effect of regulation in two countries is also evident from this table. The regulation dummy in India (the US) is positively (negatively) related to a firm's total assets, cash flows from financing, external financing, market-to-book ratio and negatively (positively) related to cash flow from investing. Taken together, this suggests that firms in India have become bigger, pricier, have raised more

external funding and have invested more after the passage of Clause 49, whereas the opposite has happened in the US after the passage of SOX.

/ INSERT TABLE 3 ABOUT HERE/

Regressions

The results in Table 4 use equation 2 to test Hypothesis 1. Using the full sample, we find there is strong evidence of classification shifting of cash flows in both countries since the slopes of cff and cfi are significantly ($<1\%$) negative, although the slopes are more negative for the US. The difference of the slopes of these two terms between the two countries (India – US) are $+0.087$ and $+0.223$, both statistically significant, indicating that there is more classification shifting in the US. These results confirm our first hypothesis. Given the countervailing effects of low investor protection and high stock price synchronicity in emerging markets, we did not make any prediction of which country will have higher incidence of shifting. That it is higher in the US suggests less reliance on cash flow information by Indian investors relative to US investors, resulting in less shifting in India even though the investor protection is weak in India.

/ INSERT TABLE 4 ABOUT HERE/

The two other panels in Table 4 examine the same model for two subsamples: firms that (i) have obtained external financing, i.e. $ext_fin > 0$ and (ii) are distressed, i.e. $zscore < 1.10$ ($zscore < 1.81$) for firms located in India (the US). We find that the slopes are steeper (flatter) for both countries in the distressed (external financing) sample than the full sample, indicating that on a relative basis, firms use this strategy more when these are in distress, consistent with the findings of Lee (2012). It is also interesting to note that distressed firms in the US are more likely to shift cash flows than the distressed Indian firms.

Table 5 shows the results of testing hypothesis 2 using equation 3. From the full sample results, we find that family firms in India, but not in the US, engage in more classification shifting than non-family firms (the slopes of cff and cfi are negative for both countries, but the slopes of $ff*cff$ and $ff*cfi$ are negative, -0.031 and -0.065, only for India). The difference of the slopes (India-US) between the two countries shows that non-family firms engage in more classification shifting in the US (0.073 and 0.227), but there is no significant difference between the two countries for the slopes of $ff*cff$ and $ff*cfi$. In summary, we find partial support for Hypothesis 2 for the full sample as Indian family firms engage in more shifting than Indian non-family firms, but our prediction for similar behavior by US family firms is not true. Additionally, we do not find the second part of our hypothesis to be true i.e. that this behavior is stronger for the Indian family firms compared to the US family firms.

/ INSERT TABLE 5 ABOUT HERE/

The results of the family firm behavior using the sub-samples for external financing and distress throw some interesting insights. In both countries, family firms do not engage in higher levels of shifting than non-family firms when in distress; however, in India and not in the US, firms engage in higher level of shifting when obtaining external financing (-0.034 and -0.067). The earlier results from equation 2 (Table 4) also hold using equation 3: for both sub-samples, between the two countries, the extent of shifting is lower in India than the US.

We test hypothesis 3 using equation 4. Results are given in Table 6. For the full sample, we find that while there is evidence of shifting by non-family firms before regulation in both countries (stronger in India than US, difference is -0.160 for cff), regulation reduces (increases) this behavior for non-family firms in India (the US) after regulation: slopes for $reg*cff$ and $reg*cfi$ are 0.039 and 0.056 for India and -0.274 and -0.321 for the US. Looking

at the subsamples, it becomes clear that these results are driven by firms raising external financing. The interaction with the family firm dummy ($ff*cff$ and $ff*cfi$) indicates that before regulation, family firms in both countries engage in similar levels of shifting. However, the interesting result is that after regulation, this behavior marginally increases among the Indian firms, as predicted by hypothesis 3. The incremental shifting occurs using investing cash flows: the slope of $ff*reg*cfi$ is -0.046 for India, and the difference (India-US) is -0.259, both significant at 10%.

/ INSERT TABLE 6 ABOUT HERE/

Once again, the subset results indicate that this result is due to firms that raise external financing. There are no significant differences in shifting between family and non-family firms before regulation in both India and the US. However, shifting has goes down after regulation in family firms in India ($ff*reg*cff$ is 0.372). Overall these results find support of hypothesis 3. The results for the distressed subset indicate that reputation concerns among family firms after regulation makes them reduce shifting ($ff*reg*cff$ is 0.372).

Difference-in-difference Analysis

A main concern of the regression analysis presented above is that of endogeneity i.e. were these results due to some inherent characteristics that we have not explicitly addressed? We use the difference method, using the same firm after (post) vs. before (pre) regulation, to eliminate any inherent characteristic as each firm is itself being used as its control. Additionally, in the univariate tests of the difference measures, we use sub-samples, allowing us to effectively examine the difference-in-difference values. We use a similar strategy in our regressions: use the difference metrics and interact with dummy variables for country, regulation and family affiliation (see equation 5).

/ INSERT TABLE 7 ABOUT HERE/

Table 7 shows the comparison of means of the difference measures (Post-Pre) of family/non-family (Panel A) and of India/US (Panel B). Combining the insights from the two panels, we note that market-to-book ratio (*mtb*) has increased substantially after regulation in India compared to the US across all firms (Panel B), with family firms in India showing a higher increase relative to non-family firms in India but no discernable difference for the US sample (Panel A); furthermore, as we noted earlier, cash flow from financing activities (*cff*) has increased in India but has gone down in US; these firms have received external funding (*ext_fin*), and have increased *z-score*.

The regression results in Panel C, indicate that overall, there is clear evidence of classification shifting using Model 1. Model 2 introduces a dummy for India (*IND*); the slope for $ind*\Delta cff$ is -0.186 and $ind*\Delta cfi$ is 0.321, indicating financing cash flows are being used to boost operating cash flows, whereas investing cash flows are actually reducing operating cash flows. Model 3 shows that family firms do not play any incremental role in classification shifting. Finally, Model 4, which is estimated using equation 5 indicates that family firms in India are engaging in incremental classification shifting ($ff*ind*\Delta cfi$ is -0.736) between the pre and post regulation periods. This is a confirmation of hypothesis 3.

These results extend the literature on convergence of national governance systems mentioned earlier (Markarian et al., 2007; Millar, 2014; Buchanan et al., 2014). The full-sample results in Table 4 combined with model 1 of Table 7 (Panel C) clearly indicate that shifting was happening in both countries before regulation, and has increased after regulation. But our incremental contribution is from models 2 and 4 (Table 7, Panel C), which show that subsequent to regulation (i) the two countries diverge in how to manipulate cash flows and (ii) family firms in India, but not in the US, increase manipulation. While Rees and Rodionova (2015) find that family firms do not improve CSR in open market economies, we

find that these firms reduce quality of their financial reports in an emerging economy when faced with regulation.

Robustness Tests

We conduct a number of robustness tests. We consider earlier cut-off years for creating the indicator variable for regulation in both countries. Clause 49 was revised after it was initially proposed; in our main analysis we use the date when the revised version was implemented. SOX was created as a reaction to the big accounting failures in the late 1990s, culminating in bursting of the tech bubble. It is possible that firms reacted in anticipation of the regulatory changes to follow, immediately after these scandals were discovered. To test for robustness, we considered Clause 49 to be effective in 2003 instead of 2006 and SOX to be effective in 2000 instead of 2003. We find all our findings remain unchanged and the significance of our results are actually stronger using the alternative cutoff dates.

We also examine the effect of external financing and distress using alternative definitions. To create the external financing subsample, instead of applying the criteria that $ext_fin > 0$ for a particular firm-year observation, we select firms that had the median value of ext_fin across all the years to be a positive number. This results in 7,166 (instead of 8,738) observations for US and 7,343 (instead of 11,030) observations for India. We find that all of our conclusions remain unchanged because of the alternative specification.

CONCLUSION

In this paper we examine whether family controlled firms in two distinct market settings, emerging and developed, behave differently with regard to classification shifting of cash flows. Most studies assume that the incentives for family firm behavior are the same in different market settings. However, factors such as efficiency of public capital markets,

enforcement of corporate laws and regulations, and other institutional practices can cause differences in family firm behavior across different market settings. We investigate the behavior of family and non-family firms in each of these markets and study how a feature of the national governance system, regulatory design, moderates this behavior.

We hypothesize that the level of cash flow classification shifting will be different between India and the US due to differences in investor protection and use of fundamental (cash flow) information by investors. The results confirm the first hypothesis. Our second hypothesis argues that family firms engage in higher level of shifting than non-family firms, and this behavior is stronger in India. We find partial support for this hypothesis, finding that family firms engage in more shifting than non-family firms in India, but not in the US. Our third hypothesis argues that family firms engage in more shifting, and this behavior increases after regulation for family firms in India, but not in the US. We find marginal support for this hypothesis, and on further examination find that firms which are raising external financing in India, engage in this kind of behavior.

The main insight from examining the issues from a regulatory lens is to gain an understanding of the efficacy of such regulation. Enforcement standards vary in different parts of the world, in different market settings. Our study attempts to make inferences about the role played by corporate governance regulation in two diverse market settings. It appears that non-family firms in India raised substantial external capital after the regulation.

Our results suggest that the magnitude of cash flow misclassification is likely to be less amongst the Indian firms as compared to that in the US. However, given the importance of external finance for the family firms, family firms in both the countries seem to manipulate more cash flows as compared to the non-family firms. Further, competition in the capital markets seems to have intensified after Clause 49, prompting family firms to increase their

magnitude of cash flow misclassification. Our findings should be of interest to investors and regulators interested in understanding emerging and developed markets.

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NOTES

1. The style of corporate governance in the US has changed over time (see Jackson, 2010). The 1960-70s was marked by managerial power, where ownership was dispersed, compensation was fixed but boards were dominated by insiders and the corporate control market was weak. The 1980s saw the advent of investor power, where ownership was dominated by institutions, stock options were used for compensation, boards were still dominated by insiders but the corporate control market was strong. The 1990s and 2000s saw the continuation of investor power, where ownership was still dominated by institutions, stock options were still used for compensation but boards became independent of insider influence and the role of corporate control market reduced to medium. Up until the 1990s, the information intermediaries i.e. auditors and analysts were weakly regulated, which changed in the 2000s as oversight became much stronger. In essence, the problem facing outside investors in the US was trying to monitor managers during the initial decades, but powerful executives with the use of stock options have increased their power through equity ownership in the recent years so much that a 'say on pay' provision was introduced in the Dodd-Frank Act of 2010.
2. Although Ramalinga Raju was charged in February 2009 for the massive accounting fraud at Satyam Computer Services Ltd. in India, the court convicted him in April 2015 for a seven year jail sentence, after six long years of deliberations. And this was perhaps the only criminal conviction in India for corporate fraud. In contrast, the corporate fraud cases in the US are prosecuted much faster, and criminal convictions against the executives are more frequent and stiffer. Bernie Ebbers of WorldCom and Jeff Skilling of Enron were each initially sentenced to approximately twenty five years in prison.
3. Managers can shift cash flows in several ways. e.g. Nautica Enterprises Inc. took advantage of flexibility in the Generally Accepted Accounting Principles (GAAP) and classified proceeds from sale of 'available-for-sale' securities as operating cash inflows rather than investing cash inflows. Enron Corporation once used loan proceeds to purchase treasury securities. Later, it sold these securities, and repaid the loan using sales proceeds. Though, there was no impact on financing and total cash flows, operating (investing) cash flows did increase (decrease) as sale (purchase) of treasury securities was classified as operating cash inflow (investing cash outflow). Dynergy, Inc. entered into a complex natural gas purchase contract with its unconsolidated subsidiary – ABG Gas Supply, Inc., where subsidiary borrowed \$300mn from CitiGroup, Inc. enabling it to sell gas at below-market rates to Dynergy. Dynergy sold this gas at market rate for 9 months in 2001, thereby temporarily boosting its operating cash flows. HealthSouth Corp. reported expenses paid for sponsorship and newspaper advertisements as a part of Property, Plant and Equipment (Mulford & Comiskey, 2005). Asbury Automotive Group, Inc. recorded change in notes payable for vehicle inventory as an operating activity rather than financing activity despite the fact that inventory was purchased from a manufacturer unaffiliated with the lender (see Hollie, Nicholls, & Zhao, 2011).

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Accepted Article

Appendix 1: Variable Definitions

at	Total assets.
cff	Net cash flow from financing activities in year t , scaled by total assets in year $t-1$.
cfi	Net cash flow from investing activities in year t , scaled by total assets in year $t-1$.
cfo	Net cash flow from operating activities in year t , scaled by total assets in year $t-1$.
dacc	Discretionary accruals estimated using Jones (1991).
ext_fin	External financing. $((\text{Total assets}_t - \text{Total assets}_{t-1}) - (\text{Retained earnings}_t - \text{Retained earnings}_{t-1})) / \text{Total assets}_{t-1}$
fcf	Net cash flow from financing activities in year t .
ff	Family firm. 1 if the firm belongs to a family, 0 otherwise.
icf	Net cash flow from investing activities in year t .
mtb	Market-to-book ratio. $(\text{Common shares outstanding}_t * \text{Fiscal year-end closing stock price}_t) / \text{Common Equity}_t$.
ocf	Net cash flow from operating activities in year t .
reg	Regulation. For Indian firms, 1 if year ≥ 2006 , 0 otherwise. For US firms, 1 if year ≥ 2003 , 0 otherwise.
roa	Profit after tax in year t , scaled by total assets in year $t-1$.
sale	Net sales.
size	Natural logarithm of total assets in year t .
ue_cfo	Unexpected operating cash flows estimated using equation one.
zscore	Calculated using Altman's (1968) model for the United States, and Altman's (2002) emerging market model for India.
Δ sale	Growth in sales. $(\text{Net sales}_t - \text{Net sales}_{t-1})$.

Accepted

Table 1 Sample Selection

	India		US	
	No. of firms	No. of firm-years	No. of firms	No. of firm-years
Initial Prowess sample with non-missing company code or National Industrial Classification code (India: 1990-2010; US: 1988-2010)	2,729	57,309	21,572	209,753
<u>Less:</u> Firm-years of firms with a change in fiscal-year end	747	15,687	1,720	23,262
	1,982	41,622	19,852	186,491
<u>Less:</u> Firm-years with negative sales or assets	0	661	1	95
	1,982	40,961	19,851	186,396
<u>Less:</u> Firm-years with missing values of variables used in the model for measuring unexpected operating cash flows	239	21,835	6,694	90,299
	1,743	19,126	13,157	96,097
<u>Less:</u> Firm-years with missing values of investing or financing cash flows	32	726	0	1
	1,711	18,400	13,157	96,096
<u>Less:</u> Firm-years in industry-years with observations less than n (minimum requirement for running industry-year regressions for estimating unexpected operating cash flows) (India: $n=10$; US: $n=15$)	117	1,533	144	1,883
	1,594	16,867	13,013	94,213
<u>Less:</u> Firm-years in financial services industries (India: NIC Codes: 64, 65 and 66; US: SIC Codes: 44 and 45)	121	634	104	864
	1,473	16,233	12,909	93,349
<u>Less:</u> Firm-years with missing values of control variables	33	786	2,674	18,024
	1,440	15,447	10,235	75,325
<u>Less:</u> Firm-years for which family affiliation could not be ascertained	10	100	8,483	60,596
Final sample (1995-2010)	1,430	15,347	1,752	14,729

Table 2 Descriptive Statistics

<i>Panel A</i>	India (n=15,347)			United States (n=14,729)			India-US
	Mean	Median	Std Dev	Mean	Median	Std Dev	Mean
<i>at</i>	6296.418	783.600	23315.938	5666.278	1224.305	16676.416	-5561.300***
<i>cff</i>	0.044	-0.012	0.250	-0.007	-0.020	0.133	0.051***
<i>cfi</i>	-0.099	-0.046	0.183	-0.077	-0.054	0.132	-0.022***
<i>cfo</i>	0.068	0.072	0.137	0.096	0.097	0.100	-0.028***
<i>dacc</i>	0.000	-0.003	0.138	0.036	0.021	3.174	-0.036
<i>ext_fin</i>	0.143	0.067	0.332	0.066	0.019	0.237	0.077***
<i>fcf</i>	106.622	-3.200	1623.779	-135.264	-15.780	870.201	137.000***
<i>ff</i>	0.352	0.000	0.478	0.352	0.000	0.478	0.000
<i>icf</i>	-521.258	-26.800	2379.822	-387.236	-64.531	1519.341	378.500***
<i>mtb</i>	1.085	0.515	1.988	2.658	2.067	3.577	-1.574***
<i>ocf</i>	532.409	33.900	2472.839	553.432	110.757	1571.617	-544.600***
<i>reg</i>	0.381	0.000	0.486	0.673	1.000	0.469	-0.292***
<i>roa</i>	0.054	0.042	0.107	0.026	0.045	0.121	0.027***
<i>size</i>	6.858	6.664	1.817	7.309	7.110	1.537	-0.452***
<i>ue_cfo</i>	-0.001	0.000	0.135	0.156	0.080	0.415	-0.158***
<i>zscore</i>	5.107	4.471	3.159	4.196	3.294	5.223	0.911***

<i>Panel B</i>	India			United States			India-US
	Non FF	FF	FF-Non FF	Non FF	FF	FF-Non FF	FF _{IN} -FF _{US}
<i>at</i>	4767.520	9109.490	4341.970***	6534.572	4065.634	-2468.939***	-3913.800***
<i>cff</i>	0.056	0.021	-0.035***	-0.006	-0.010	-0.005**	0.031***
<i>cfi</i>	-0.099	-0.099	0.000	-0.077	-0.078	-0.002	-0.021***
<i>cfo</i>	0.057	0.089	0.032***	0.095	0.098	0.003	-0.009***
<i>dacc</i>	0.000	-0.001	-0.001	0.015	0.075	0.059	-0.075*
<i>ext_fin</i>	0.152	0.126	-0.027***	0.070	0.057	-0.013***	0.068***
<i>fcf</i>	84.847	146.687	61.840**	-167.827	-75.237	92.590***	77.681***
<i>icf</i>	-342.669	-849.851	-507.182***	-438.903	-291.993	146.910***	277.800***
<i>mtb</i>	1.044	1.160	0.116***	2.771	2.451	-0.321***	-1.290***
<i>ocf</i>	372.861	825.965	453.104***	640.042	393.773	-246.269***	-380.000***
<i>roa</i>	0.050	0.061	0.011***	0.024	0.030	0.006***	0.031***
<i>size</i>	6.359	7.776	1.417***	7.492	6.973	-0.519***	0.803***
<i>ue_cfo</i>	-0.005	0.005	0.009***	0.171	0.130	-0.040***	-0.126***
<i>zscore</i>	5.368	4.663	-0.705***	3.977	4.610	0.633***	0.053
<i>n</i>	9943	5404		9549	5180		

Variables *at*, *fcf*, *icf* and *ocf* are in INR and USD for India and the US, respectively. All continuous variables are winsorized at 1% and 99%. Panel A contains means and medians for India and the US, and the associated differences in means. Panel B contains means for family and non-family firms in India and the US, and the associated differences. Values have been converted into USD for Indian firms before computing the differences between Indian and US firms (Exchange rate: INR 60/USD). Number of observations with available *zscore* are 13,173 (India) and 14,089 (US). * p<0.10, ** p<0.05, *** p<0.01

Table 3 Pearson (Spearman) Correlations above (below) the Diagonal

variable	at	ocf	icf	fcf	cfo	ue_cfo	cff	cfi	roa	size	mtb	dacc	ext_fin	ff	reg
at	1	0.826***	-0.786***	0.234***	0.063***	0.041***	0.004	-0.035***	0.086***	0.575***	0.101***	0.003	0.017**	0.089***	0.140***
ocf	0.572***	1	-0.761***	0.010	0.209***	0.159***	-0.059***	-0.049***	0.131***	0.475***	0.107***	-0.073***	-0.025***	0.088***	0.096***
icf	-0.621***	-0.507***	1	-0.471***	-0.102***	-0.080***	-0.110***	0.215***	-0.117***	-0.463***	-0.108***	0.016*	-0.104***	-0.102***	-0.156***
fcf	-0.062***	-0.428***	-0.217***	1	-0.125***	-0.081***	0.300***	-0.236***	0.033***	0.137***	0.045***	0.072***	0.246***	0.018**	0.138***
cfo	0.138***	0.758***	-0.309***	-0.419***	1	0.714***	-0.419***	-0.105***	0.230***	0.116***	0.039***	-0.519***	-0.269***	0.110***	-0.051***
ue_cfo	0.016**	0.540***	-0.183***	-0.322***	0.764***	1	-0.266***	-0.117***	0.196***	0.032***	0.055***	-0.669***	-0.140***	0.033***	0.003
cff	0.061***	-0.369***	-0.298***	0.885***	-0.492***	-0.385***	1	-0.740***	0.214***	0.053***	0.089***	0.294***	0.859***	-0.066***	0.134***
cfi	-0.201***	-0.255***	0.803***	-0.403***	-0.306***	-0.213***	-0.455***	1	-0.327***	-0.117***	-0.104***	-0.017**	-0.694***	0.001	-0.096***
roa	0.245***	0.264***	-0.378***	0.046***	0.326***	0.225***	0.069***	1	0.185***	0.185***	0.181***	0.292***	0.256***	0.049***	0.136***
size	1.000***	0.572***	-0.621***	-0.062***	0.138***	0.016**	0.061***	-0.201***	0.244***	1	0.160***	0.045***	0.095***	0.373***	0.254***
mtb	0.188***	0.109***	-0.226***	0.074***	0.069***	0.074***	0.104***	-0.195***	0.300***	0.188***	1	-0.002	0.110***	0.028***	0.230***
dacc	0.068***	-0.327***	0.001	0.270***	-0.480***	-0.605***	0.332***	0.011	0.240***	0.068***	0.018**	1	0.168***	-0.003	-0.011
ext_fin	0.165***	-0.124***	-0.372***	0.607***	-0.173***	-0.151***	0.690***	-0.506***	0.218***	0.165***	0.147***	0.133***	1	-0.039***	0.106***
ff	0.408***	0.301***	-0.229***	-0.108***	0.114***	0.020**	-0.070***	-0.047***	0.074***	0.408***	-0.011	0.010	-0.001	1	-0.026***
reg	0.259***	0.060***	-0.196***	0.120***	-0.045***	0.002	0.142***	-0.103***	0.138***	0.259***	0.372***	-0.022***	0.101***	-0.026***	1

Panel B: United States

variable	at	ocf	icf	fcf	cfo	ue_cfo	cff	cfi	roa	size	mtb	dacc	ext_fin	ff	reg
at	1	0.833***	-0.810***	-0.051***	0.040***	0.007	-0.023***	-0.013	0.080***	0.614***	0.051***	-0.005	0.021**	-0.071***	-0.055***
ocf	0.825***	1	-0.765***	-0.339***	0.196***	0.043***	-0.089***	-0.055***	0.163***	0.615***	0.110***	-0.004	-0.003	-0.075***	-0.014
icf	-0.671***	-0.677***	1	-0.236***	-0.114***	-0.012	-0.100***	0.204***	-0.089***	-0.460***	-0.061***	0.001	-0.111***	0.046***	0.061***
fcf	-0.304***	-0.433***	-0.030***	1	-0.118***	-0.040***	0.332***	-0.203***	-0.114***	-0.248***	-0.079***	0.001	0.210***	0.051***	-0.072***
cfo	0.212***	0.607***	-0.386***	-0.261***	1	0.125***	-0.219***	-0.388***	0.660***	0.221***	0.213***	0.001	0.023***	0.013	-0.009
ue_cfo	0.070***	0.193***	-0.131***	-0.055***	0.313***	1	0.012	-0.083***	0.072***	0.037***	0.082***	0.035***	0.047***	-0.047***	0.019**
cff	-0.086***	-0.273***	-0.199***	0.882***	-0.299***	-0.057***	1	-0.620***	-0.222***	-0.056***	-0.052***	0.004	0.702***	-0.016**	-0.033***
cfi	-0.142***	-0.268***	0.722***	-0.338***	-0.446***	-0.158***	-0.392***	1	-0.197***	-0.097***	-0.079***	-0.016**	-0.544***	-0.006	0.060***
roa	0.248***	0.468***	-0.32***	-0.220***	0.691***	0.215***	-0.232***	-0.330***	1	0.260***	0.194***	0.004	-0.106***	0.023***	0.061***
size	1.000***	0.825***	-0.671***	-0.304***	0.212***	0.070***	-0.086***	-0.142***	0.248***	1	0.130***	-0.019**	0.051***	-0.161***	-0.051***
mtb	0.239***	0.361***	-0.273***	-0.146***	0.413***	0.251***	-0.112***	-0.235***	0.483***	0.239***	1	-0.010	0.050***	-0.043***	-0.020**
dacc	-0.011	-0.032***	-0.004	0.019**	-0.037***	0.077***	0.021**	-0.020**	0.084***	-0.011	0.016*	1	-0.003	0.009	-0.011
ext_fin	0.072***	0.001	-0.326***	0.561***	0.063***	0.073***	0.653***	-0.490***	0.078***	0.072***	0.150***	0.003	1	-0.026***	-0.027***
ff	-0.172***	-0.126***	0.101***	0.051***	0	-0.069***	-0.006	-0.005	0.005	-0.172***	-0.080***	-0.005	-0.019**	1	-0.059***
reg	-0.040***	-0.034***	0.085***	-0.040***	0.002	0.003	-0.042***	0.081***	0.054***	-0.039***	0.005	-0.085***	-0.008	-0.059***	1

All continuous variables are winsorized at 1% and 99% by fiscal year. Variable definitions are given in Table 1. * p<0.10, ** p<0.05, *** p<0.01

Table 4 Misclassification of Cash Flows

Sample	Full		External Financing		Distressed	
	US	India	US	India	US	India
Country		India-US		India-US		India-US
cff	-0.263*** (-7.713)	-0.176*** (-39.650)	0.087** (-2.519)	0.036 (0.843)	-0.396*** (-5.227)	0.153* (-1.770)
cfi	-0.415*** (-11.858)	-0.192*** (-31.845)	0.223*** (-6.290)	0.179*** (4.087)	-0.557*** (-6.998)	0.242** (-2.405)
roa	0.211*** (-6.740)	0.526*** (-74.868)	0.315*** (-9.816)	0.249*** (6.052)	0.271*** (4.278)	0.241*** (-3.029)
size	0.011*** (-4.753)	-0.001** (-2.025)	-0.012*** (-5.026)	-0.009*** (-2.750)	0.014** (2.528)	-0.022*** (-3.428)
mtb	0.002** (-2.010)	0.000 (-0.785)	-0.002 (-1.613)	-0.003** (-2.282)	0.002 (1.516)	-0.000 (-0.082)
dacc	0.004*** (-3.808)	-0.681*** (-124.329)	-0.685*** (-123.015)	-0.674*** (-103.0)	0.006** (2.483)	-0.615*** (-15.060)
Constant	0.128** (-2.403)	-0.059*** (-10.883)	-0.186*** (-3.490)	-0.070*** (-11.282)	0.337*** (2.683)	-0.439*** (-3.311)
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
No. of observations	14729	15347	8738	11030	2924	332
Adjusted R-Square	18.1%	66.7%	18.5%	67%	19.0%	70.4%

The estimated coefficients for each country are from pooled regressions using equation 2: $UE_{CFO_{i,t}} = \alpha_0 + \alpha_1 CFF_{i,t} + \alpha_2 CFI_{i,t} + \alpha_3 ROA_{i,t} + \alpha_4 SIZE_{i,t} + \alpha_5 MTB_{i,t} + \alpha_6 DACC_{i,t} + \delta_{i,t}$. t-statistics are given in the parentheses. Variable definitions are given in Appendix 1. The external financing sample consists of firms where $ext_fin > 0$. The distressed sample consists of firms with $score < 1.10$ for India. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 5 Cash Flow Misclassification by Family and Non-family Firms

Sample Country	Full		External Financing		Distressed	
	US	India	US	India	US	India
cff	-0.242*** (-6.188)	-0.169*** (-34.907)	-0.177*** (-3.740)	-0.163*** (-30.315)	-0.397*** (-4.816)	-0.333*** (-5.512)
cfi	-0.401*** (-9.941)	-0.174*** (-25.824)	-0.357*** (-7.243)	-0.178*** (-24.183)	-0.528*** (-6.066)	-0.336*** (-5.001)
ff	-0.011 (-1.250)	-0.005*** (-2.680)	-0.007 (-0.544)	-0.005** (-2.217)	-0.032 (-1.555)	-0.006 (-0.528)
ff*cff	-0.076 (-1.150)	-0.031*** (-3.399)	-0.109 (-1.334)	-0.034*** (-3.365)	-0.043 (-0.243)	0.132 (1.261)
ff*cfi	-0.052 (-0.787)	-0.065*** (-5.629)	-0.067 (-0.836)	-0.067*** (-5.249)	-0.136 (-0.770)	-0.025 (-0.262)
roa	0.214*** (6.819)	0.525*** (74.587)	0.258*** (6.383)	0.504*** (60.393)	0.276*** (4.350)	0.500*** (10.338)
size	0.011*** (4.540)	-0.001** (-2.074)	0.010*** (2.967)	0.001 (1.090)	0.013** (2.242)	-0.007** (-2.314)
mtb	0.002* (1.960)	0.000 (0.648)	0.004*** (2.829)	0.001 (1.350)	0.002 (1.519)	-0.000 (-0.202)
dacc	0.004*** (3.819)	-0.680*** (-124.288)	0.004*** (2.877)	-0.674*** (-104.412)	0.006** (2.409)	-0.590*** (-14.136)
Constant	0.132** (2.476)	-0.058*** (-10.672)	0.179*** (2.820)	-0.068*** (-11.037)	0.347*** (2.759)	-0.106** (-2.495)
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
No. of observations	14729	15347	11030	8738	2924	332
Adjusted R-Square	18.1%	66.7%	18.5%	67.1%	19.0%	70.7%

The estimated coefficients for each country are from pooled regressions using equation 3: $UE_{CFO_{i,t}} = \alpha_0 + \alpha_1 CFF_{i,t} + \alpha_2 CFI_{i,t} + \alpha_3 FF_{i,t} + \alpha_4 FF_{i,t} * CFF_{i,t} + \alpha_5 FF_{i,t} * CFI_{i,t} + \alpha_6 ROA_{i,t} + \alpha_7 SIZE_{i,t} + \alpha_8 MTB_{i,t} + \alpha_9 DAC_{i,t} + \mu_{i,t}$. t-statistics are given in the parentheses. Variable definitions are given in Appendix 1. The external financing sample consists of firms where $ext_fin > 0$. The distressed sample consists of firms with $zscore < 1.81$ for the US and $zscore < 1.10$ for India. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 6 Cash Flow Misclassification by Family and Non-Family Firms before and after the Regulation

Sample	Full			External Financing			Distressed		
	US	India	India-US	US	India	India-US	US	India	India-US
cff	-0.032 (-0.439)	-0.192*** (-26.310)	-0.160** (-2.170)	-0.023 (-0.265)	-0.194*** (-23.392)	-0.171* (-1.938)	-0.165 (-0.625)	-0.243*** (-2.897)	-0.078 (-0.280)
cfi	-0.160** (-2.147)	-0.208*** (-21.020)	-0.048 (-0.632)	-0.139 (-1.517)	-0.227*** (-20.782)	-0.088 (-0.949)	-0.236 (-0.993)	-0.466*** (-4.389)	-0.230 (-0.881)
reg	0.030 (1.108)	0.020*** (3.997)	-0.010 (-0.361)	0.051 (1.435)	0.020*** (3.538)	-0.032 (-0.872)	-0.055 (-0.705)	0.105** (2.322)	0.160* (1.769)
reg*cff	-0.274*** (-3.338)	0.039*** (4.458)	0.314*** (3.797)	-0.204** (-2.076)	0.050*** (5.067)	0.254** (2.573)	-0.253 (-0.929)	-0.130 (-1.206)	0.123 (0.421)
reg*cfi	-0.321*** (-3.850)	0.056*** (4.582)	0.378*** (4.475)	-0.291*** (-2.866)	0.080*** (5.996)	0.372*** (3.625)	-0.326 (-1.321)	0.134 (1.138)	0.461* (1.683)
ff	-0.018 (-1.164)	-0.004* (-1.945)	0.013 (0.866)	-0.006 (-0.288)	-0.002 (-0.651)	0.004 (0.204)	0.005 (0.139)	0.006 (0.328)	0.000 (0.011)
ff*cff	-0.107 (-0.954)	-0.026* (-1.904)	0.081 (0.717)	-0.094 (-0.706)	-0.018 (-1.189)	0.076 (0.566)	0.027 (0.070)	-0.161 (-1.397)	-0.189 (-0.459)
ff*cfi	-0.224** (-1.982)	-0.041** (-2.447)	0.183 (1.603)	-0.164 (-1.201)	-0.021 (-1.126)	0.143 (1.040)	-0.357 (-0.962)	0.009 (0.052)	0.366 (0.896)
ff*reg	0.003 (0.167)	0.000 (0.095)	-0.003 (-0.147)	-0.008 (-0.306)	-0.006 (-1.380)	0.002 (0.084)	-0.055 (-1.329)	-0.026 (-1.145)	0.029 (0.621)
ff*reg*cff	-0.035 (-0.249)	-0.008 (-0.413)	0.027 (0.193)	-0.101 (-0.592)	-0.025 (-1.234)	0.076 (0.441)	-0.176 (-0.396)	0.372** (2.476)	0.548 (1.169)
ff*reg*cfi	0.212 (1.524)	-0.046** (-1.997)	-0.259* (-1.833)	0.088 (0.517)	-0.086*** (-3.384)	-0.174 (-1.014)	0.292 (0.687)	0.060 (0.296)	-0.232 (-0.494)
roa	0.218*** (6.943)	0.522*** (73.455)	0.303*** (9.415)	0.262*** (6.470)	0.499*** (59.251)	0.237*** (5.724)	0.285*** (4.471)	0.500*** (10.350)	0.214*** (2.678)
size	0.010*** (4.263)	-0.001** (-2.152)	-0.011*** (-4.577)	0.009*** (2.710)	0.001 (1.042)	-0.008** (-2.511)	0.012** (2.180)	-0.007** (-2.207)	-0.019*** (-2.960)
mtb	0.002** (1.994)	0.000 (0.641)	-0.002* (-1.648)	0.004*** (2.875)	0.001 (1.447)	-0.003** (-2.314)	0.002 (1.438)	0.002 (1.233)	-0.000 (-0.083)
dacc	0.004*** (3.780)	-0.678*** (-123.722)	-0.682*** (-122.421)	0.004*** (2.846)	-0.671*** (-103.915ss9)	-0.675*** (-102.517)	0.005** (2.346)	-0.589*** (-14.258)	-0.594*** (-14.367)

Constant	0.156*** (2.904)	-0.058*** (-10.483)	-0.214*** (-3.958)	0.204*** (3.157)	-0.070*** (-11.011)	-0.273*** (-4.218)	0.373*** (2.919)	-0.093** (-1.971)	-0.467*** (-3.421)
Industry fixed effects	Yes	Yes		Yes	Yes		Yes	Yes	
Year fixed effects	Yes	Yes		Yes	Yes		Yes	Yes	
No. of observations	14729	15347		8735	11030		2924	332	
Adjusted R-Square	18.2%	66.9%		18.5%	67.2%		19.1%	71.6%	

The estimated coefficients for each country are from pooled regressions using equation 4: $UE_CFO_{i,t} = \alpha_0 + \alpha_1 CFF_{i,t} + \alpha_2 CFI_{i,t} + \alpha_3 REG_{i,t} + \alpha_4 REG_{i,t} * CFF_{i,t} + \alpha_5 REG_{i,t} * CFI_{i,t} + \alpha_6 FF_{i,t} + \alpha_7 FF_{i,t} * REG_{i,t} + \alpha_8 FF_{i,t} * CFF_{i,t} + \alpha_9 FF_{i,t} * REG_{i,t} * CFF_{i,t} + \alpha_{10} FF_{i,t} * REG_{i,t} * CFI_{i,t} + \alpha_{11} FF_{i,t} * REG_{i,t} * CFF_{i,t} + \alpha_{12} ROA_{i,t} + \alpha_{13} SIZE_{i,t} + \alpha_{14} MTB_{i,t} + \alpha_{15} DACC_{i,t} + v_{i,t}$. t-statistics are given in the parentheses. Variable definitions are given in Appendix 1. The external financing sample consists of firms where $ext_fir > 0$. The distressed sample consists of firms with $zscore < 1.81$ for the US and $zscore < 1.10$ for India. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 7 Difference-in-difference Analysis (Effect of Regulation)

Panel A: Comparison of means: Family and non-family firms

Sample	FF	Non FF	Diff.	t	n (F)	n (Non FF)
mtb						
US	0.105	0.181	-0.076	-0.58	602	912
India	1.191	0.625	0.566	4.26**	358	693
roa						
US	0.024	0.027	0.003	0.54	602	912
India	0.017	0.021	0.004	0.68	358	693
cfi						
US	0.019	0.021	0.002	0.33	602	912
India	0.010	0.008	0.002	0.21	358	693
cff						
US	0.012	0.016	0.004	0.71	602	912
India	0.023	0.031	0.008	0.73	358	693
size						
US	0.213	0.259	0.046	1.59	602	912
India	0.835	0.797	0.038	0.74	358	693
dacc						
US	0.126	0.088	0.038	0.43	602	912
India	0.011	0.011	0.001	0.10	358	693
ue_cfo						
US	0.013	0.003	0.015	0.99	602	912
India	0.006	0.004	0.002	0.32	358	693
ext_fin						
US	0.014	0.017	0.003	0.27	602	912
India	0.011	0.030	0.019	1.23	358	693
zscore						

Panel B: Comparison of means: India and US firms

Sample	India	US	Diff.	t	n (In d)	n (US)
mtb						
Non-Family	0.625	0.181	0.444	3.78**	693	912
Family	1.191	0.105	1.087	7.55**	358	602
roa						
Non-Family	0.021	0.027	0.006	1.20	693	912
Family	0.017	0.024	0.007	1.12	358	602
cfi						
Non-Family	0.008	0.021	0.029	4.41**	693	912
Family	0.010	0.019	0.029	3.82**	358	602
cff						
Non-Family	0.031	0.016	0.047	5.46**	693	912
Family	0.023	0.012	0.035	4.10**	358	602
size						
Non-Family	0.797	0.259	0.538	14.08**	693	912
Family	0.835	0.213	0.622	14.07**	358	602
dacc						
Non-Family	0.011	0.088	0.077	1.56	693	912
Family	0.011	0.126	0.114	1.56	358	602
ue_cfo						
Non-Family	0.004	0.003	0.001	0.13	693	912
Family	0.006	0.013	0.019	1.50	358	602
ext_fin						
Non-Family	0.030	0.017	0.047	3.63**	693	912
Family	0.011	0.014	0.025	1.89*	358	602
zscore						

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US	1.91 6	- 2.37 0	0.45 4	1.3 4	568	893	Non- Family	0.01 0	- 2.37 0	2.36 0	8.98	** *	590	893
India	0.05 4	- 0.01 0	0.06 4	0.3 6	334	590	Family	0.05 4	- 1.91 6	1.97 0	7.16	** *	334	568

Panel C: Regressions

Variable	Model 1		Model 2		Model 3		Model 4	
	Estimate	t Value	Estimate	t Value	Estimate	t Value	Estimate	t Value
Intercept	-0.009	-1.55	-0.008	-1.24	-0.006	-0.84	0.001	0.08
Δcff	-0.314	-7.05	-0.155	-2.04	-0.316	-6.23	-0.165	-1.68
Δcfi	-0.477	-8.73	-0.592	-7.55	-0.484	-7.50	-0.740	-7.32
ind			-0.001	-0.05			-0.010	-0.81
ind* Δcff			-0.186	-1.97			-0.143	-1.23
ind* Δcfi			0.321	3.01			0.542	4.17
ff					-0.008	-0.88	-0.021	-1.71
ff*ind							0.024	1.22
ff* Δcff					0.002	0.02	0.014	0.09
ff* Δcfi					0.018	0.16	0.348	2.29
ff*ind* Δcff							-0.251	-1.14
ff*ind* Δcfi							-0.736	-2.99
Δroa	0.346	7.70	0.369	8.13	0.345	7.65	0.367	8.03
$\Delta size$	0.014	2.05	0.019	2.63	0.013	2.01	0.019	2.66
Δmtb	-0.002	-1.16	-0.002	-1.24	-0.002	-1.13	-0.003	-1.36
$\Delta dacc$	-0.003	-0.75	-0.004	-1.13	-0.003	-0.75	-0.004	-1.03
No. of observations	2565		2565		2565		2565	
Adjusted R-Square	6.3%		7.7%		6.2%		8.0%	

For every firm, all variables in the Panels A, B and C are measured as the difference between the average value of the variable across all the years after regulation (Post) minus the average value across all the years before regulation (Pre). Panel A compares the means of these difference measures (Post-Pre) for the family and non-family firms, separately for the sample of firms in India and in the US. Panel B compares the means of these difference measures (Post-Pre) for firms in India and the US, separately for the sample of family firms and non-family firms. Panel C presents the regression results using the difference measures specified in equation 5: $\Delta UECFO_{i,t} = \alpha_0 + \alpha_1 \Delta CFF_{i,t} + \alpha_2 \Delta CFI_{i,t} + \alpha_3 IND_{i,t} + \alpha_4 IND_{i,t} * \Delta CFF_{i,t} + \alpha_5 IND_{i,t} * \Delta CFI_{i,t} + \alpha_6 FF_{i,t} + \alpha_7 FF_{i,t} * IND_{i,t} + \alpha_8 FF_{i,t} * \Delta CFF_{i,t} + \alpha_9 FF_{i,t} * \Delta CFI_{i,t} + \alpha_{10} FF_{i,t} * IND_{i,t} * \Delta CFF_{i,t} + \alpha_{11} FF_{i,t} * IND_{i,t} * \Delta CFI_{i,t} + \alpha_{12} \Delta ROA_{i,t} + \alpha_{13} \Delta SIZE_{i,t} + \alpha_{14} \Delta MTB_{i,t} + \alpha_{15} \Delta DACC_{i,t} + \delta_{i,t}$. Models 1-3 are partial models, whereas model 4 is the full model specified by equation 5. Variable definitions are given in Appendix 1. *IND* is a dummy variable, which equals 1 for Indian firms and 0 otherwise. * p<=0.10, ** p<=0.05, *** p<=0.01.

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