MOTIVES FOR AND CONSEQUENCES OF RELATED PARTY TRANSACTIONS BEFORE INITIAL PUBLIC OFFERINGS

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Abstract: Our objective in this paper is to examine the use of related party sales to manage earnings in the year before an initial public offering. We conduct our analysis with a sample of 253 Indian IPOs from the years 1999-2009. We estimate cross-sectional regressions of related party sales (RPS) in the year before the offering on measures for the incentive to avoid a loss and the incentive to avoid earnings declines, insider ownership, and several control variables. We find that IPO firms use RPS to avoid losses and that RPS are an increasing function of inside ownership. Evidence that these firms use RPS to avoid earnings declines is not robust across specifications. Additionally, the use of RPS to avoid losses and earnings declines are driven by transactions with corporate entities such as subsidiaries and joint ventures. There is no evidence that RPS to key managers are used to inflate earnings before the offering.

In supplemental analysis, we find that pre-IPO related party sales is of low quality – it is not significantly related to operating cash flows both in the offering year and in the following year. To assess the valuation of these sales, we estimate regressions of market capitalization based on the offer price and the first-day closing price on related party sales and standard control variables from the IPO valuation literature. Our evidence indicates that consistent with related party sales being unrelated to future cash flows, valuations are not significantly related to these sales.

1. Introduction

The ability of insiders to manage earnings upward in the year before or the year of an initial public offering (IPO) has been the subject of several studies. A majority of these studies examine accruals-based earnings management. Early studies in this literature conclude that that pre-IPO accruals are managed upward. For example, Friedlan (1994) and DuCharme, Malatesta, and Sefcik (2001) find that pre-IPO discretionary accruals are positive. More recent work questions these findings and concludes that IPO firms are conservative in their reporting (Ball and Shivakumar, 2008; Venkataraman, Weber and Willenborg, 2008). Additionally, researchers argue that testing for earnings management with discretionary accruals is confounded by an alternate and more benign explanation for positive discretionary accruals around IPOs – accruals tend to increase in response to the infusion of funds related to the IPO (Armstrong, Foster, Taylor, 2015).

Our objective in this paper is not to evaluate whether *accruals* are opportunistic around IPOs. Rather, we examine an alternative but less-studied method for managing earnings upward – the use of *related party sales*. Related parties include founders of the firm and top management as well as firms to which the IPO firm is related as investor or as investee – holding companies, associates and joint ventures, subsidiaries, and group companies. Because buyer and seller are closely related, these non-arm's length transactions provide the advantage of ease and flexibility in achieving earnings targets. Additionally, unlike accruals, they are less likely to be influenced by the influx of funds from the offering.

Our first research question is whether IPO firms use related party sales to avoid reporting losses and earnings declines before the offering. Prior research argues that based on stakeholder use of information-processing heuristics and prospect theory, firms will be motivated to attain these goals (Burgstahler and Dichev, 1997). Second, we assess if the magnitude of related party sales is increasing in the level of inside ownership. This prediction

would be consistent with the argument of Leuz, Nanda, and Wysocki (2003) that insiders would use earnings management to conceal poor performance in an attempt to protect their private control benefits. We also study the consequences of related party sales for the pricing of these firms and their post-IPO performance.

Besides investigating a relatively unexplored form of earnings management, we study it in a setting where managerial motivations to inflate earnings are relatively strong. The Indian institutional setting has three features which are likely to increase managerial motivation to manage earnings upward before IPOs. First, regulations of the Securities Exchange Board of India (SEBI) require that a firm applying for listing should have a track record of profitability in at least of three of the five years before the IPO. Thus, firms have a strong motivation to manage earnings to avoid losses and earnings declines – to satisfy listing requirements. Second, the type of investors to whom IPO shares are to be allotted is determined by SEBI regulations. According to these regulations, in a book-built issue, shares are to be allotted to three types of investors – retail investors, non-institutional investors, and qualified institutional investors in the ratio of 35: 15: 50. The presence of a significant proportion of retail and non-institutional investors, who are considered less sophisticated than institutions, increases the chances that earnings management will be ignored when the offering is priced. The third feature of interest is that pre-offering shareholders are subject to a mandatory lock-in as per SEBI regulations. That is, they are not allowed to sell twenty percent of their pre-IPO shareholdings for up to three years after the IPO. For their remaining shareholdings, the lock-in period is one year. Given these restriction, the amount raised from the IPO becomes even more important to their wealth, increasing the incentive to manage earnings before the IPO.

We conduct our analysis with a sample of 253 Indian IPOs from the years 1999-2009. Based on manually-collected data from IPO prospectuses, we document that, as a fraction of firm sales, mean related party sales increases from 7.0% three years before the offering to 9.5% in the year before the offering. Additionally, mean related party expenses as a fraction of sales declines from 6.1% to 4.4% over this period. Combining the effect of sales and expenses, the profit from these transactions as a fraction of sales increases from a mean of 0.9% to 5.1% over the three years before the IPO.

We estimate cross-sectional regressions of related party sales (RPS) in the year before the offering on measures for the incentive to avoid a loss and the incentive to avoid earnings declines, insider ownership, and several control variables. We find that IPO firms use RPS to avoid losses and that RPS are an increasing function of inside ownership. Evidence that these firms use RPS to avoid earnings declines is not robust across specifications. Additionally, the use of RPS to avoid losses and earnings declines are driven by transactions with corporate entities such as subsidiaries and joint ventures. There is no evidence that RPS to key managers are used to inflate earnings before the offering.

We conduct tests comparing the tendency of business group firms and standalone firms in our IPO sample. Business group firms have opposing motivations to engage in earnings management. The controlling owners of a group are likely to exploit their power over group firms and use related party sales to the detriment of minority shareholders. Alternately, group firms' concern about group reputation might deter them in increasing related party sales before the IPO. We find that group firms do engage in more related party sales than other firms. Further, consistent with the reputation story, group firms are less likely than other firms in using related party sales to avoid earnings declines.

In supplemental analysis, we find that pre-IPO RPS is of low quality – it is not significantly related to operating cash flows both in the offering year and in the following

year. To assess the valuation of RPS, we estimate regressions of market capitalization based on the offer price and the first-day closing price on RPS and standard control variables from the IPO valuation literature. Our evidence indicates that consistent with related party sales being unrelated to future cash flows, valuations are not significantly related to these sales.

Our study contributes to the literature on earnings management around IPOs. Unlike most studies on earnings management around IPOs, which at most analyze data for the year before the offering, we provide descriptive evidence on RPS for three years before the offering. Our work complements two studies on the use of related party sales by Chinese IPO firms - Aharony, Wang, and Yuan (2010) and Chen, Cheng and Xiao (2011). Both these studies emphasize correlations between RPS and earnings to conclude earnings management. In contrast, we hypothesize and evaluate if meeting targets and increases in inside ownership induce earnings management via RPS. Further, both the Chinese studies examine only RPS between the IPO firms and their holding companies. Our study examines a broader set of related parties and distinguishes between key managerial employees' RPS and inter-corporate RPS.

Our study also adds to a growing literature on related party transactions (RPTs) by mature listed firms (Jiang, Lee, and Yue, 2010; Jiang and Wong, 2010; Kohlbeck and Mayhew, 2010). Compared to RPTs of listed mature firms, their usage by young IPO firms and their consequences for valuation and future performance has received very little attention. We seek to redress this gap. Additionally, by examining RPTs of Indian firms, our work complements recent work on RPTs that focuses on U.S. and China.

The rest of this paper is organized as follows. In section 2, we develop hypotheses linking related party sales to (a) the incentive to avoid losses and earnings declines and (b) the level of inside ownership. In section 3, we review the related prior literature, and in section 4 we describe our sample selection and data sources. Section 5 presents our empirical analysis, and Section 6 contains our conclusions.

2 Use of related party sales to increase earnings before IPOs

The distinguishing feature of related party sales (RPS) is the ease with which they can be executed and the flexibility they offer to increase earnings. Consider the case of sale of goods to a related party as an example. Here, both the transaction quantity and the unit price are under the control of that party because she is on both sides of the transaction. Additionally, in contrast to arm's length sales, search costs and time, marketing costs, and customer retention costs are eliminated. With real earnings management, firms' ability to increase profits is constrained by factors or parties that are outside its control. For example, when over-production is used to reduce cost of goods sold, the unit costs that influence the impact on earnings are partly controlled by outside parties or immutable because they relate to past events.

The advantage of ease and flexibility might suggest that RPS would be exploited to the hilt by all IPO firms to boost profits. However, excessive RPS-based earnings management is unlikely to occur before IPOs, for several reasons. First, potential investors are likely to interpret RPS as evidence of opportunistic behavior by insiders. This negative perception could lower IPO prices. Second, related party sales may be viewed as posing a higher collection risk than would sales to non-related parties, again leading to downward

valuation.[1] Third, it would be difficult for firms to signal credibly about the quality of RPS.[2] Fourth, governance mechanisms such as auditors and independent directors could deter insiders from engaging in these transactions. Finally, in India, an additional deterrent is that the nature and the amounts of RPS are tabulated in a transparent manner in IPO prospectuses. Hence, investors will be able to make an unambiguous assessment of their impact on bottom-line profits.

Overall, managers will choose a level of RPS that balances the ease and flexibility advantage against potential downward valuation because of negative perceptions. Because our priors on which of these effects will dominate are imprecise, we do not offer a signed prediction on the average magnitude of RPS for the entire sample of IPOs. However, we expect that firms will choose to increase RPS in two settings where the motivation to inflate earnings would dominate possible costs associated with RPS. We turn to discuss these settings.

The first motivation is the desire to avoid reporting losses and earnings declines before the IPO. Burgstahler and Dichev (1997) offer two reasons for why firms would want to avoid these outcomes. First, they appeal to prospect theory and loss aversion which suggest that decision-makers' value functions are asymmetric around reference points – losses and declines hurt more than gains and increases feel good. Second, they predict that avoiding losses and earnings declines are likely to reduce transaction costs with stakeholders such as customers, suppliers, and employees. In our setting of Indian IPOs, we expect that managers will use earnings

[1] Our assumption is that some RPS will yield zero future cash collections (fictitious sales) and some RPS are of low quality and will be only partially collected. When the firm's auditors observe the uncollected receivables in the post-IPO period, they will require write-offs causing profits to decline. Thus, RPS increase earnings in year -1 and are likely to be associated with earnings declines in the post-IPO period. Our assumption about how RPS affects current and future earnings is similar to that of the model of earnings management described in Stein (1989).

[2] Our reading of the prospectuses indicate that firms make no attempt to signal about the quality of these transactions. On the contrary, several firms list related party transactions as one of the risk factors associated with the offering.

management with RPS to avoid losses and earnings declines for a third reason. SEBI regulations require that a firm applying for listing should have a track record of profitability profitability in at least of three of the five years before the IPO.[3] Thus, our first hypothesis is: hypothesis is:

H1: IPO firms will use RPS to avoid losses and earnings declines in the year before the IPO.

The second variable that is likely to influence the magnitude of RPS is the level of insider ownership. Beginning with Grossman and Hart (1988) and Zingales (1994), researchers in finance have studied the private benefits of control that insiders enjoy. In a widely-cited study, Leuz, Nanda, and Wysocki (2003) argue that insiders would use earnings management to conceal poor performance in an attempt to protect their private control benefits. In our setting, there are three reasons why a higher level of ownership is likely to increase earnings management. First, if earnings management is successful, higher levels of ownership will be associated with greater wealth gains at the time of the offering. Second, at higher levels of ownership, the power that insiders wield might render governance mechanisms such as independent directors ineffective. Third, in India, pre-IPO shareholders are subject to a three-year mandatory lock-in after the IPO. That is, they are not allowed to sell their shareholdings for up to three years after the IPO. Given this restriction, the amount raised from the IPO becomes even more important to insider wealth, increasing the incentive to manage earnings before the IPO as a function of their stake in the firm. This reasoning leads to the following hypothesis:

H2: The use of RPS to manage earnings is increasing in the levels of insider ownership.

To obtain additional insights into which types of related parties are involved in RPS-based earnings management, we examine two related party types: key managerial personnel

[3] Similar pre-IPO profitability listing requirements are enforced in China and Japan. In contrast, several economies including Australia, Canada, the U.S., and the UK. do not require pre-IPO profitability as a pre-condition for listing.

and corporate entities. Key managerial personnel and corporate related parties differ on three dimensions that are likely to influence on their respective likelihoods of engaging in RPS. First, corporate entities are likely to be larger and have more resources at their disposal than individuals, and hence their ability to purchase from the IPO firm would be higher. Second, because purchases are business expenses, corporate related parties can claim them as deductions and thus reduce their tax payable. In contrast, it seems unlikely that key managers can deduct these purchases when computing taxable income.[4] Third, because key managers would be perceived as being much closer to the firm than would corporate entities, related party sales to the former would be viewed as less arm's length than those with corporate entities. Thus, IPO firms are more likely to sell to corporate entities than to key managerial personnel to reduce the likelihood of downward valuations. Based on these arguments, we predict and expect that IPO firms are more likely to engage in RPS with corporate entities than with key managers to avoid losses and earnings declines.

We also examine whether the magnitude of related party sales depend on whether the IPO firm is part of a business group. A business group (BG) is a distinct organizational form, that are fairly common in emerging economies such as India. BGs bring together two or more legally independent firms through common ties (Chittoor, Kale, and Puranam, 2014). There are two views on the earnings quality of BG firms. Under the first view, BG firms are likely to have lower earnings quality than would non-group firms. Specifically, the voting and cash flow rights of group firms tend to diverge which creates a conflict between the controlling shareholders in the group and the minority shareholders of specific BG firms. This motivates controlling owners to engage in transactions to the detriment of minority shareholders. Bertrand, Mehta, and Mullainathan (2002) provide evidence that controlling shareholders of Indian BGs engage in tunnelling, or moving profits from firms where they have low cash

[4] For a list of deductions that individuals in India can claim see: https://www.bankbazaar.com/tax/tax-deduction-and-types.html

flow rights to those where they have high cash flow rights. In our context, controlling owners could exploit their power to engage in RPS to the detriment of the minority shareholders of the IPO firm.

An alternate view about BG firms' earnings quality is that it is likely to be higher than that of standalone firms. This stems from the fact that group firms are concerned about the overall reputation of the group. Individual group firms are unlikely to make financial reporting decisions that could adversely affect the group's reputation. Specifically, if RPS are considered poor quality earnings, BG firms are less likely to engage in RPS to meet earnings targets. In light of these alternate views, we do not make a signed prediction about the relation between RPS and BG status. Rather, we look to the data to assess which of these alternate views dominate.

To supplement our tests of earnings management, we provide two additional analyses. First, we examine the effect of RPS on future cash flows, a relation that accounting regulators emphasize when discussing earnings quality. Second, we study how RPS is valued in setting the offer price and at the close of the first date of trading. If RPS are viewed as value-destroying because they are indicative of past and future wealth transfers from minority investors, they are likely to be valued negatively (Kohlbeck and Mayhew, 2010; Jiang Lee, and Yue, 2010). A second view is that related party sales are beneficial to the firm because they are economically efficient transactions (Kohlbeck and Mayhew, 2010). If related parties are managers, the income from RPS could be viewed as part of their compensation, and therefore it would motivate them to work harder. Additionally, RPS could reduce transaction costs such as search costs and costs of retaining customers (Kohlbeck and Mayhew, 2010). Under this view, RPSEs would be valued positively. Our empirical analysis sheds light on which of these two views prevail when valuing RPS.

Our focus in this paper is on related party sales because their effect on bottom-line earnings is unambiguous. We consider but do not analyze related party expenses even though their reduction could lead to higher earnings. The reason for this decision is that a significant fraction of these expenses related to purchase of goods which have an ambiguous effect on profits. Specifically, purchases are expensed only when the underlying goods are sold or consumed under the matching concept; until then they remain as inventories.

3 Prior Literature

Our research is at the intersection of two streams of research – earnings management before IPOs and the motives and consequences of related party transactions. In this section, we summarize the findings from these streams and our potential contributions.

3.1 Earnings Management around IPOs

The ability of managers to inflate earnings in the year before or in the year of an IPO has been the subject of several studies. A majority of these studies examine accruals-based earnings management (AEM) (Aharony, Lin, and Loeb, 1993; Friedlan, 1994; Teoh, Wong, and Rao, 1998; Aharony, Lee, and Wong 2000; DuCharme, Malatesta, and Sefcik, 2001; Ball and Shivakumar, 2008; Venkataraman, Weber, and Willenborg, 2008; Cecchini, Jackson, and Liu, 2012; Armstrong, Foster, and Taylor, 2015). Darrough and Rangan (2005) study one form of real earnings management (REM) – R&D cuts – before IPOs. We contribute to this literature by examining a relatively under-studied form of earnings management - the use of RPS in the year before the offering.

Given our focus on RPS before IPOs, our study is most closely related to two studies of Chinese IPOs. Aharony, Wang, and Yuan (2010) study a sample of 185

Chinese IPO firms from the years 1998-2001. They document a positive association between return on assets in the year of the IPO and change in sales to parent companies during that year. Additionally, they find that this change in sales is positively associated with the PE ratio based on the IPO offer price. However, this initial favorable reaction is temporary; the 12-month and 24-month buy-and-hold returns following the offering date are negatively related to the offering-year change in sales to parent companies. These findings lead them to conclude that (a) Chinese IPO firms opportunistically manage earnings via related party sales, but (b) investors fail to understand the negative implications of these transactions until one or two years after the offering date. Aharony, Wang, and Yuan (2010) also find that IPO firms that record sales to their parents in the offering year are more likely to lend to their parent companies in the subsequent year. They interpret this evidence as suggesting that offering year earnings management is a predictor of subsequent wealth transfers from minority investors to controlling shareholders.

Chen, Cheng and Xiao (2011) study 257 Chinese IPOs during the years 1999 and 2000 and examine RPS with the IPO firms' controlling shareholders. They find that RPS is positively associated with firm's operating performance in the year before the offering year. In the post-IPO period, mean RPS declines and is associated with poor operating and stock return performance.

Unlike most studies on earnings management around IPOs, which at most analyze data for the year before the offering, we provide descriptive evidence on RPS for three years before the offering. Both the Chinese studies on IPO-related earnings management emphasize correlations between RPS and earnings to conclude earnings management. In contrast, we hypothesize and evaluate if meeting targets and increases in inside ownership induce earnings management via RPS. Further, both the Chinese studies examine only RPS between the IPO

firms and their holding companies. Our study examines a broader set of related parties and distinguishes between key managerial employees' RPS and inter-corporate RPS.[5]

3.2 Related Party Transactions

Our work is also related to a growing literature on related party transactions (RPTs) by mature listed firms. The papers in this literature have concentrated primarily on U.S. or Chinese firms.

Research on RPTs in the U.S. has investigated three issues: their frequency, whether they are associated with fraud, and their impact on firm value. Gordon, Henry, and Palia (2004) and Kohlbeck and Mayhew (2004) show that, for samples drawn from 2001 and 2002, RPT frequencies are quite high, ranging from 63% to 80%. Evidence on the relation between RPTs and fraud is mixed. Gordon and Henry (2005) find that abnormal accruals are unrelated to a majority of RPTs. Similarly, Henry, Gordon, Reed, and Louwers (2012) report that RPTs are relatively infrequent in their sample of SEC enforcement actions. Inconsistent with the notion that RPTs increase the risk of fraud, Kohlbeck and Mayhew (2016) document that audit fees are 9% lower for firms that disclose RPTs. However, Cullinan, Du and Wright (2006) find that firms that grant loans to executives are significantly more likely to misstate revenues than those that do not. Similarly, Kohlbeck and Mayhew (2016) find that accounting restatements are positively related to loans, guarantees, and consulting arrangements, when a director, officer, or major shareholder is the counterparty.

In general, the U.S. evidence on the valuation of RPTs suggests that investors value these transactions negatively. Kohlbeck and Mayhew (2010) find that market

[5] Key managerial employees include the employees themselves, their relatives, and the entities that they control. Inter-corporate RPS includes RPS with holding companies, associates and joint ventures, and firms that belong to the same business group as the IPO firm or that share a common parent (group companies/fellow subsidiaries).

value of equity and Tobin's Q are negatively related to disclosure of RPTs and that this relation is magnified for loans to officers and directors. Ryngaert and Thomas (2012) find that transactions that predate the counterparty to the firm becoming a related party are not associated with operating performance and are positively related to firm valuation. However, RPTs that occur after the counterparty becomes a related party are inversely associated with profitability, result in share price declines, and are associated with a higher likelihood of financial distress.

While research on RPTs in the U.S. is scant, a slew of studies has investigated the causes and consequences of these transactions in China. Related party transactions or balances have been shown to be positively associated with membership in a business group (Jian and Wong, 2003) and controlling shareholder ownership levels (Jiang, Rao, and Yue, 2015). RPTs are also motivated by the need to increase earnings to meet ROE thresholds specified by regulators (Jian and Wong, 2003; Jian and Wong, 2010; Ying and Wang, 2013). Meeting these bright-line rules enable firms to maintain listing status or qualify for capital-raising through rights issues.

RPTs have also been shown to be negatively related to several other governance-type variables. The list of such variables includes board member stock ownership (Jiang, Rao, and Yue, 2015), blockholder and institutional ownership (Gao and Kling, 2008; Berkman, Cole, and Fu, 2008; Jiang, Lee and Yue, 2010; Jiang, Rao and Yue, 2015), the proportion of independent directors on the board (Lo, Wong, and Firth, 2010), CEO-Chairman duality (Lo, Wong, and Firth, 2010), and the presence of financial experts on the audit committee (Lo, Wong, and Firth, 2010). Further, RPTs have been shown to be related to firm size (Berkman, Cole, and Fu, 2008; Jiang, Lee, and Yue, 2010), leverage (Jiang, Lee, and Yue, 2010), and profitability and growth prospects (Berkman, Cole, and Fu, 2008).

In general, RPTs are perceived as value-destroying by Chinese investors and are associated with declines in subsequent operating performance. Evidence of the negative investor effects is provided through event studies around the announcement of RPTs (Cheung, Jing, Lu, Rau and Stouraitis, 2009).[6] Additionally, RPTs are shown to be negatively related to market capitalization, Tobin's Q, and subsequent operating performance (Berkman, Cole, and Fu, 2010; Jiang, Lee and Yue, 2010).

Empirical evidence on the effects of RPTs have been documented in a few other countries: France (Nekhilli and Cherif, 2011), Hong Kong (Cheung, Rau and Stouraitis, 2006), Israel (Amzaleg and Barak, 2011), Malaysia (Wahab, Haron, Lok, Yahya, 2011), and Taiwan (Lin, Liu and Keng, 2010). These studies' findings tend to mirror those obtained for China: RPTs are associated with lower market valuations and subsequent operating performance.

In the Indian context, for a sample of listed firms for the years 2009-2011, Srinivasan (2013) documents that related party sales are negatively associated with contemporaneous return on assets. Additionally, she finds that related party transactions are lower in companies audited by big auditors.

Compared to RPTs of listed mature firms, their usage by young IPO firms and their consequences for valuation and future performance has received very little attention. We seek to redress this gap. Additionally, by examining RPTs of Indian firms, our work complements recent work on RPTs that focuses on U.S. and China.

4 Sample and Data

4.1 Sample

[6] Peng, Wei and Yang (2011) find that the sign of the market reaction to RPT announcements depends on the motive for engaging these transactions. They report a negative market reaction to RPTs by firms that are expected to issue new shares (consistent with tunneling) and a positive market reaction to RPTs by firms that are likely to delist because of poor performance (consistent with propping).

An initial sample of 592 IPOs for the years 1999-2009 is obtained from the Thomson Reuters SDC Platinum New Issues Database (SDC). In Table 1, we report the type and number of IPOs that are excluded to arrive at our final sample. Our filters are similar to those applied in prior research on IPOs - we exclude financial firms, private placements, offerings that are not underwritten, and one follow-on offering. The basic unit of observation on SDC is an offering tranche; while some IPOs have a single tranche, others have more than one tranche. To achieve a sample of unique IPOs (one observation per firm), we eliminate 67 tranches that relate to multiple-tranche IPOs. We also exclude 178 firms for which IPO prospectuses are unavailable on www.sebi.gov.in or that would not qualify based on the aforementioned filters.[7] Our empirical tests require annual RPT data; 22 firms do not report such data, and we exclude them leaving us with a final sample of 253 IPOs.

[Insert Table 1 here]

Table 2 presents the time-series of offering frequencies for the sample period. Relatively few IPOs enter the sample before 2003 and IPO volume peaks in 2007 before declining during the years of the financial crisis.

[Insert Table 2 here]

4.2 Variables and Data Sources

Indian companies are required to tabulate their RPTs in prospectuses for five fiscal years before the offering. These requirements are contained in Accounting Standard 18 – Related Party Disclosures, which recently under IFRS convergence has been relabelled as Indian AS 24. Based on prospectus disclosures, we identify five types of related parties and twelve types of transactions/balances. The related party types are: (a) key managerial personnel, their relatives, and entities that they control (KMP); (b) holding companies; (c) subsidiaries; (d) associates and joint ventures, and (e) firms that belong to the same business

[7] We read prospectuses to check if a firm would be eliminated based on the screens.

group as the IPO firm or that share a common parent (group companies/fellow subsidiaries). We manually collect data for the following nine types of transactions for five fiscal years: (a) Sales and other income (RPS); (b) Purchases and Expenses; (c) Loans Given; (d) Loans Received; (e) Equity Invested; (f) Equity Received; (g) Dividends; (h) Asset Purchases; and (i) Asset Sales. We also collect data on net ending balances for three accounts: (a) Net Accounts Receivable or Payable (b) Net Loans Receivable or Payable (c) Net Equity Invested. We code net receivable (payable) balances as positive (negative) numbers. Because we have five related party types, twelve transaction types, and up to five years of pre-IPO fiscal years, our RPT data matrix consist of 300 columns of data for 253 firms. Additionally, we collect data on managerial remuneration paid to KMPs for five pre-IPO years, when reported.

In addition to RPT data from prospectuses, we obtain offering-related variables from SDC, data on pre-IPO financials, governance, and other firm characteristics from prospectuses, and post-IPO financial and industry-level variables from the Centre for Monitoring the Indian Economy Private Limited (CMIE) Prowess Database. We next provide more information on these variables.

SDC is our data source for the following six offering-related variables: offer price; offer date; primary, secondary, and total shares offered; and shares outstanding after the offering. When these variables are missing, we filled in their values from prospectuses. We replace SDC data with values from the prospectuses whenever there is a disparity between the two information sources. We also collect the first-day close price from SDC and fill in missing values from the CMIE Prowess Database.

Turning to the financial statement data, we manually collect the following six variables for years -1 to -3 relative to the offering date from prospectuses, whenever available: sales, income before extraordinary items, cash flows from operations, long-

term debt, book value of equity, and total assets. All numbers were coded in ₹million. We also collect three measures of governance structure from prospectuses: board size, the proportion of independent directors, and whether the CEO and the Chairman is the same individual. The other firm characteristics that we obtain are founding dates, the name of the auditor, and the name of the underwriter.

We define firm age as the difference between the offering year based on the offer date and the founding year. Consistent with a large body of auditing literature, we measure auditor reputation as a 1-0 dummy variable based on whether or not the firm's auditor is a big-N auditor or its affiliate in India. To measure underwriter reputation, we employ the method of Megginson and Weiss (1991).

The CMIE Prowess Database is our source for post-IPO financial data and industry market-to-book ratios. We obtain five years of post-IPO data for four variables: Sales, Income before Extraordinary Items, Operating Cash Flows, and Total Assets. We also compute industry median market-to-book ratio before the offer date as an indicator of growth opportunities.

Appendix A contains a list of variables used in the analyses and their definitions.

5. Empirical Results

5.1 Descriptive Statistics

Table 3 presents some descriptive statistics for our sample. The average market capitalization on the offer date (MCAP_OFFER) is ₹12.8 billion (or $289 million, using daily exchange rates on the offer date from https://www.federalreserve.gov). Offering proceeds average ₹2.2 billion (or $48.6 million), and the average offer price (OPRC) is ₹175 (approximately $4). On the close of the first day of trading, the average price (FIRST_CLOSE) is ₹225, providing an average initial day return (FIRSTDAY_RET) of

31%. Thus, the widely documented underpricing phenomenon obtains in this sample of Indian IPOs. On completion of the offering, the average insider ownership (INSAFT) is 58%, while that of 5% blockholders (BLAFT) is only 5.8%.

[Insert Table 3 here]

The average market-to-book ratio (INDMB) of IPO industries is 1.9 suggesting that investors expect these industries to grow rapidly. In terms of leverage (LTD_A), the mean debt-to-assets ratio before the offering is 30%. The average IPO firm is 14 years old, and the average underwriter rank (UWRANK) is 0.7. Twenty percent of the sample firms have big-N auditors (BIGAUD). Table 3 also provides data on certain governance characteristics. The average board size (BSIZE) is close to 8 and CEOs of forty percent of the firms are also board chairmen (CEODUAL). About half the directors are independent (PROPIND).

Table 4 reports median performance data over the years -3 to +5 relative to the offering year; year 0 is the fiscal year in which the IPO is completed. Median sales follows a secular trend growing from ₹448 million to ₹3,771 million; however, growth rates decline steadily over the same period from 39% to 16%. Median profitability measured as income before extraordinary items divided by ending total assets (ROA) grows from 4% in year -3 to 8% in year 0 when it peaks; subsequently, it declines from 7% in year 0 to 3% in year +5. The loss frequency data reported beneath the ROA numbers show a dramatic increase from pre-offering years (3% in year -1) to 25% in year +5. Thus, IPO firms operating performance declines significantly in the five years after the offering.

[Insert Table 4 here]

To understand the evolution of return on assets, we divide income into operating cash flows (OCF) and its non-cash complement, accruals (ACC). Interestingly, operating cash flows is the larger contributor to profitability in the year before the offering year (year -1):

median OCF divided by assets is 6%, whereas median ACC divided by assets is smaller at 2%. In the offering year and subsequent year (year 0 and +1), this pattern reverses. In these two years, median OCF divided by assets is only 0% and 1%, respectively; in contrast, median ACC divided by assets grows to 6% and 5%, respectively. In subsequent analysis, we return to explain whether the decline in operating cash flows in year 0 and +1 is related to year -1 RPS.

Table 5 presents mean values of related party transactions and balances from year -5 to year -1. Sample sizes range from 122 in year -5 to 253 in year -1. Mean related party sales (RPS) – our main variable of interest - grows about four-and-a-half times from ₹60.9 million to ₹268.2 million over the five-year period. As a fraction of firm sales, mean related party sales increases from 7.0% in year -3 to 9.5% in year -1. Mean related party expenses also increase, but not at the same rate as sales: it grows from ₹43.1 million to over twice that amount, ₹91.5 million. Interestingly, related party expenses as a fraction of sales declines from 6.1% to 4.4% from year -3 to year -1. Combining the effect of sales and expenses, the profit from these transactions as a fraction of sales increases from a mean of 0.9% to 5.1% in the three years before the IPO.

Table 5 also reports average dividends and remuneration paid before the offering year. Pre-IPO dividend payouts are meager consistent with these firm being cash-strapped. As a percentage of profit, mean dividends range 1% to 1.5% before the IPO. Additionally, mean managerial remuneration as a fraction of profit declines from 10% in year -3 to 6% in year -1. Because the corporate law in India allows up to 11% of the profit to be paid as remuneration, the declining remuneration percentages and payments that are lower than the legal maximum indicate (a) the importance of liquidity and (b) the desire to report increasing profits to new investors.

We capture but do not analyze in detail, a wealth of information of capital inflows and outflows between IPO firms and related parties. Table 5 provides mean values for loan and equity transactions and balances from year -5 to year -1. Mean loans given by the firm to related parties increases from ₹19.2 million to ₹88.7 million. Mean loans received from received from related parties are smaller than mean loans given and also increase over the same period, from ₹10.6 million to ₹26.4 million. The net effect of loans given and received is reflected in the end-of-year balances. IPO firms have net loan claims against related parties of ₹46.9 million at the end of year -1. However, as a fraction of total assets, this balance is minuscule; it averages a mere 0.4% of total assets. Average equity received from or invested in parties also have an increasing trend; their magnitudes are, in general, smaller than those related to loans received or given to related parties.

We also report mean trends for the net balance that related parties owe the firm for trade transactions – net accounts receivable. These are larger than loan balances, on average. However, as a fraction of assets, mean net accounts receivable is only 1.4% at the end of year -1.

5.2 Motives for RPS

In this subsection, we evaluate our two hypotheses: (a) RPS are used by IPO firms to avoid losses and earnings declines in year -1 and (b) The use of RPS to manage earnings is increasing in the levels of insider ownership.

To measure the incentive to avoid a loss, we define a dummy variable, PRERPT_INCDUM for year -1. This variable equals one if year -1 income before extraordinary items (IBEI) and before all related party sales and expenses is negative, and zero otherwise. To clarify, we subtract related party income and add back related party expenses from IBEI to define the dummy variable. Our maintained assumption is that firms estimate their profit without related party sales and expenses and then

choose a level of RPS to attain their profit goal. Our variable to capture the incentive to avoid earnings declines is defined similarly. We compute IBEI before related party sales and expenses (RPSE) in years -1 and -2 and then define a dummy variable that equals one if the change in pre-RPSE IBEI in year -1 is negative, and zero otherwise (PRERPT_CHINCDUM). Our second hypothesis relates RPS to inside ownership levels. We measure inside ownership (INSAFT) as the percentage of shares held by insiders on completion of the offering.

In addition to the main independent variables, we include several control variables that relate to governance characteristics and financial condition and performance. The governance variables are expected to reduce the amount of RPS. They are: BLAFT, the percentage of shares held by 5% blockholders after the IPO; BIGAUD, a dummy variable that equals one if the firm's auditor is one of the Big-N firms or their affiliates, zero otherwise; BSIZE, the size of the board; PROPIND, the percentage of the board's directors that are independent; CEODUAL, a dummy variable that equals one if CEO and the Chairman is the same individual, and zero otherwise. We also include the growth prospects measured by the median industry market-to-book ratio (INDMB), firm age (AGE), the year -2 long-term debt to assets ratio (LTDA) and the size of the firm measured as log of total assets at the end of year -1 (LOG_ASSETS) as additional control variables.

Table 6, Panel A reports the results of a tobit regression in which the dependent variable, RPTINC_A, is the year -1 related party sales divided by year -2 total assets. We use a tobit model because RPTINC_A is left-censored, with about 40% of the observations equalling zero. In our first regression, results in columns (1) – (3) indicate that RPTINC_A has a strong positive relation the incentive to avoid a loss, measured by PRERPT_INCDUM (t-statistic= 6.94). The results also show that RPTINC_A is increasing in the level of inside ownership; the coefficient on INSAFT is 0.68 (t-statistic = 3.02). Among the control

variables, LTDA is significantly and negatively related to RPTINC_A, suggesting that debt serves to deter related party sales. Additionally, RPTINC_A is negatively related to firm size, measured as the log of total assets (LOG_ASSETS), and INDMB. Larger firms and firms with better growth prospects engage in fewer related party sales.

[Insert Table 6 here]

In column (4) – (6), we report the results from an expanded regression, where we include PRERPT_CHINCDUM, our measure of the incentive to avoid earnings declines. Because this variable requires data for year -2 RPSEs, the sample size drops from 244 to 215. We also include three additional variables in this regression: LAG_RPTINC_A, PRERPT_SGRO, and PRERPT_OCF_A. LAG_RPTINC_A is the year -2 value of RPTINC_A and thus serves as a control for its time-series properties. PRERPT_SGRO is the year -1 change in sales before the change in RPS, divided by year -2 assets – it measures non-RPS related sales growth. PRERPT_OCF_A is operating cash flows in year -1 before RPSEs; that is, we subtract related party sales and add back related party expenses. Thus, we control for growth and liquidity that is not related to related party transactions. The results show that RPTINC_A continues to be positively related to both the incentive to avoid losses (t-statistic = 3.82) and inside ownership (t-statistic = 2.61). Further, the evidence supports the hypothesis that IPO firms use related party sales to avoid earnings declines; the coefficient on PRERPT_CHINCDUM is 0.10, with a t-statistic of 1.76. In the expanded model, board size (BSIZE) are is positively and significantly related to RPS at the 10% level.

For the results, thus far, we examine RPTINC_A for all related parties. In columns (7) – (9), we report on the determinants of RPTINC_A for key managerial personnel and in the last three columns, we report results when RPTINC_A relates to inter-corporate transactions. To define inter-corporate transactions, we compute the sum of sales to (a) the IPO firm's holding company, (b) associates and joint ventures, and (c) firms that belong to

the same business group as the IPO firm or that share a common parent (group companies/fellow subsidiaries). We do not include sales to subsidiaries because these will be eliminated in consolidation and hence will not influence consolidated profits of the firm.

The results for key managers indicate that RPS to them are used to avoid earnings declines; the effect of PRERPT_CHINCDUM is positive with a coefficient of 0.10 (t-statistic = 2.16). However, neither the loss incentive nor inside ownership influence the level of KMP related RMP income. For inter-corporate transactions, RPTINC_A is positively related to both the incentive to avoid losses (t-statistic = 2.72) and the incentive to avoid earnings declines (t-statistic = 2.70). Again, inside ownership is not significantly related to inter-corporate RPS (p-value = 0.15). Among the control variables, age is positively related to RPTINC_A in the KMP regression, and board size is negatively related in the inter-corporate regression.

Overall, the evidence suggests that IPO firms use related party income, especially to corporate entities, to avoid losses and earnings declines in the year before the offering. While inside ownership is positively related to related party income from all parties, the evidence is not robust when we partition RPS into sales to key managers and to corporate entities.

5.3 Evidence on Business Groups

Next, we turn to analyse whether firms belonging to business groups (BG firms) differ from other firms in terms of the magnitude of pre-IPO RPS. As discussed earlier BG firms could have higher amounts of RPS to expropriate from minority shareholders or could have lower RPS amounts because of concerns about their group's reputation for quality financial reporting.

To assess which of these alternate views describe BG firms in our sample, we code a dummy variable, BGDUM, based on whether or not a firm is affiliated to a business group as

reported in the Prowess database. We then estimate regressions of RPS in year -1, where we augment the model reported in Table 6 with three variables: BGDUM, the interaction between BGDUM and the incentive to avoid a loss (PRERPT_INCDUM), and the interaction between BGDUM and the incentive to avoid an earnings decline (PRERPT_CHINCDUM).

In untabulated results, when we examine RPS to all related parties (not bifurcated into key managers and corporate entities) we find that BGDUM is significantly and positively related to RPINC_A. This is consistent with the idea that business group firms engage in more RPS than do standalone firms. The coefficients on the interaction between PRERPT_INCDUM and BGDUM, and PRERPT_CHINCDUM and BGDUM are not significant at conventional levels. Thus, the evidence suggests that group firms and standalone firms do not differ in their propensity to engage in RPS when faced with a loss or earnings declines.

When we examine the relation between RPS and BGDUM and the interaction terms, separately for key managers and corporate entities, we obtain additional insights that are lost by aggregating RPS across all party types. Specifically, we find that for intercorporate RPS, group firms' incentive to avoid earnings declines is lower than that of standalone firms. This suggests that group firms care about reputation effects to other group firms and this deters them from engaging in earnings manipulation via RPS.

In terms of earlier results (reported in table 6), the inclusion of the business group dummy does not alter our findings related to the incentive to avoid a loss and inside ownership. However, the inclusion of BGDUM and the two interaction terms renders PRERPT_CHINCDUM insignificant. Thus, IPO firms use RPS primarily to avoid losses. Evidence that they use RPS to avoid earnings declines is somewhat weak.

5.3 RPS and future operating cash flows

In this subsection, we examine the effect of RPTINC_A in year -1 on operating cash flows in year 0 and year +1. Recall that operating cash flows in these two post-IPO years declined considerably compared to pre-IPO years.

Columns (1) to (3) in Table 7 report results from a regression in which the dependent variable is operating cash flows in year 0 divided by year -1 total assets (OCF_A_0). The independent variables include operating cash flows in year -1 divided by year -2 total assets (OCF_A_1-), RPTINC_A, and several control variables. Our control variables overlap with the variables employed in the RPTINC_A regressions reported in Table 6. They include INSAFT, BLAFT, BIGAUD, BSIZE, PROPIND, CEODUAL, INDMB, AGE, LTDA, and LOG_ASSETS. There are two differences from the RPTINC_A regression: (a) long-term debt to assets ratio is measured at the end of year -1 instead of at the end of year -2 and (b) the log of offering proceeds (LOGPROCEEDS) is included as an additional variable. Firms with higher proceeds are likely to generate higher subsequent operating cash flows.

[Insert Table 7 here]

The results indicate that RPTINC_A is not significantly related to offering year cash flows. Its coefficient is 0.01 (t-statistic = 0.09). In columns (4) to (6), we report results with operating cash flows in year +1 is the dependent variable (OCF_A_1+). The only change is that, on the right-hand side, we replace OCF_A_1- with OCF_A_0. RPTINC_A is negatively related to year +1 cash flows, although not at statistically significant levels (t-statistic = -0.76). These findings suggest that the related party income recorded in year -1 is of poor quality as it does not translate into realized future cash flows.

As a robustness check, we estimate the future cash flow regressions in differences. In particular, we replace the level of operating cash flows in year -1, 0, and +1 with their changes, deflated by lagged total assets. We also replace the level of year -1 related party income with its change and deflate the latter by year -2 assets (CH_RPTINC_A). These

results are reported in the last six columns of Table 7. The results mirror those from the levels regressions. CH_RPTINC_A is not significantly related to year 0 cash flow changes (t-statistic); it is negatively related to year +1 cash flow changes, but its coefficient is not significant at the 10% level (t-statistic = -1.61, p-value = 0.11). Overall, our findings indicated that pre-offering related party sales do not translate into increases in future cash flows, suggesting that these sales are of poor quality.

Among the control variables, post-IPO inside ownership (INSAFT) is positively and significantly related to cash flows in year 0 and year +1 in both the levels and changes specifications. Block ownership (BLAFT) is positively related to year +1 operating cash flow levels and changes, and auditor quality (BIGAUD) is positively related to year 0 cash flow levels and changes and year +1 cash flow changes. We also find that AGE is positively related to year +1 cash flows in levels and changes; older firms tend to more profitable in year +1.

5.4 RPS and Offering valuations

We next investigate the valuation of RPS on the offering date and the close of the first day of trading. If RPS is viewed as value-destroying because it is indicative of past and future wealth transfers from minority investors, it is likely to be valued negatively. A second view is that related party sales are beneficial to the firm because they are economically efficient transactions. Under this view, RPS would be valued positively by IPO investors.

Table 8 reports valuation regressions where the dependent variable is the market capitalization deflated by total assets in year -1, consistent with the model estimated by Jiang, Lee, and Yue (2010) on valuation of RPTs. We measure market capitalization based on the offer price (MCAP_OFFER_A) as well as the closing price on the first day of trading (MCAP_DAY1_A). The main independent variables are RPTINC_A and CHRPTINC_A. Consistent with prior research on IPO valuation, we include year -1 income before

extraordinary items and book value of equity, both deflated by year -1 assets (Jiang, Lee, Yue, 2010). Our additional controls are similar to those in the RPTINC_A and future cash flow regressions: INSAFT, BLAFT, BIGAUD, BSIZE, PROPIND, CEODUAL, INDMB, AGE, LTDA, LOG_ASSETS. We also include underwriter reputation (UWRANK) as prior research has shown that it influences IPO valuation (Aggarwal, Bhagat, and Rangan, 2009).

[Insert Table 8 here]

The results show that pre-IPO RPS is not significantly related to offering valuations. When offer price based market valuations are examined, the coefficient on RPTINC_A is -0.91 and is not significant at the 10% level (t-statistic = -0.73). The coefficient on CHRPTINC_A equals 3.09 and is again statistically not significant (t-statistic = 1.20). Thus, offer prices are set without a significant weight attached to related party sales. The lack of statistical significance of the level and change in RPS remains when the first-day close price is used to value the firm. The coefficient on RPTINC_A is -2.29 (t-statistic = -1.61) and that on CHRPTINC_A equals 4.23 (t-statistic = 1.48). Thus, first-day investors also do not attach much importance to related party sales.

Consistent with prior research, pre-IPO income enters positively in the valuation regression. Both post-offering ownership variables, INSAFT and BLAFT, are positively related to valuation, suggesting that investors view retention by pre-offering shareholders as a favourable signal. The other variables that positively influence valuation are industry growth prospects (INDMB) and underwriter reputation (UWRANK). Further, increases in firm size (LOG_ASSETS) and board size (BSIZE) are associated with lower IPO valuations.

6 Conclusions

Our objective in this paper is to examine the use of related party sales to manage earnings in the year before an initial public offering. Related parties include founders of the

firm and top management as well as firms to which the IPO firm is related as investor or as investee – holding companies, associates and joint ventures, subsidiaries, and group companies. Because buyer and seller are closely related, these non-arm's length transactions provide the advantage of ease and flexibility in achieving earnings targets.

We conduct our analysis with a sample of 253 Indian IPOs from the years 1999-2009. Based on manually-collected data from IPO prospectuses, we document that, as a fraction of firm sales, mean related party sales increases from 7.0% three years before the offering to 9.5% in the year before the offering. Additionally, mean related party expenses as a fraction of sales declines from 6.1% to 4.4% over this period. Combining the effect of sales and expenses, the profit from these transactions as a fraction of sales increases from a mean of 0.9% to 5.1% over the three years before the IPO.

We estimate cross-sectional regressions of related party sales (RPS) in the year before the offering on measures for the incentive to avoid a loss and the incentive to avoid earnings declines, insider ownership, and several control variables. We find that IPO firms use RPS to avoid losses and that RPS are an increasing function of inside ownership. Evidence that these firms use RPS to avoid earnings declines is not robust across specifications. Additionally, the use of RPS to avoid losses and earnings declines are driven by transactions with corporate entities such as subsidiaries and joint ventures. There is no evidence that RPS to key managers are used to inflate earnings before the offering.

In supplemental analysis, we find that pre-IPO RPS is of low quality – it is not significantly related to operating cash flows both in the offering year and in the following year. To assess the valuation of RPS, we estimate regressions of market

capitalization based on the offer price and the first-day closing price on RPS and standard control variables from the IPO valuation literature. Our evidence indicates that consistent with related party sales being unrelated to future cash flows, valuations are not significantly related to these sales.

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Appendix A. Variable definitions

Variable definitions are presented in the order in which they appear in tables in the paper. All financial data items obtained are audited historical numbers. In general, all flow numbers were measured over twelve months; however, to minimize data loss, when a firm reported either 13 months or 11 months of data, we converted those numbers into 12 month values. If a firm reported flow numbers for more than 13 months or less than 11 months, we set those numbers to missing. Additionally, if a firm changed its fiscal year, data for the year of the fiscal year change was set to missing. For stock numbers, we collected the numbers reported on the fiscal year end date; if the *only balance sheet* numbers available were reported on a date other than the fiscal year end date, we set those numbers to missing. SDC refers to the Thomson Reuters SDC Platinum New Issues Database and CMIE Prowess refers to the Prowess Database of the Centre for Monitoring the Indian Economy Private Limited.

Variable	Definition
MCAP_OFFER	Product of shares outstanding after the IPO and offer price (Source: SDC)
PROCEEDS	Product of shares issued in IPO and offer price (Source: SDC)
OPRC	IPO final offer price (source: SDC)
FIRST_CLOSE	Last price on the close of the first day of trading (Source: SDC and CMIE Prowess)
FIRSTDAY_RET	(FIRST_CLOSE – OPRC) / OPRC
INSAFT	Percentage of Shares outstanding after the offering held by promoters, their relatives, and entities controlled by promoters (Source: IPO Prospectuses)
BLAFT	Sum of the percentage of shares outstanding after the offering held by non-promoter owners who own at least 5% of the shares outstanding (Source: IPO Prospectuses)
INDMB	The median industry market-to-book ratio. To measure industry MB, for each IPO firm, we obtain the market capitalizations at the end of the month before the offering date for all firms in that firm's country that had the same 2-digit SIC code (industry-peers). We chose two-digit SIC codes to minimize data loss because of industries having too few firms. For these industry peers, we obtain the book value of equity in the most recent year relative to the month-end at which market capitalization is measured. We compute market-to-book ratio as market capitalization divided by book value equity. Market capitalization and income before extraordinary items are from CMIE Prowess.
LTD_A	Ratio of long-term debt to total assets. Long-term Debt is the sum of all interest-bearing debt that was reported in the non-current liabilities section of the balance sheet: notes, debt, borrowings, capital lease obligations. Because we are interested in the role of debt as a source of monitoring, we exclude loans from related parties. Long-term-debt and total assets are obtained from IPO Prospectuses.
AGE	Difference between offering year based on offer date and the founding year (Source: IPO Prospectuses)
UWRANK	To measure underwriter reputation, we employ the method of Megginson and Weiss (1991). For each underwriter j and for every year *t*, we define x_{jt} as the three-year moving average (*t*-3, *t*-2, *t*-1) of IPO proceeds. Then, for the set of underwriters I, for the year t, the Megginson-Weiss rank for underwriter *j* is: $\frac{\log(x_{jt})}{Max_{j\in I}[\log(x_{jt})]}$

	(Source for Underwriter name and IPO Proceeds: SDC)
BIGAUD	Dummy Variable that equals 1 if the firm's auditors is one of the Big-N firms or their affiliates, zero otherwise. (Source: SDC and IPO Prospectuses)
BSIZE	Number of directors on the board (Source: IPO Prospectuses)
CEODUAL	Dummy variable that equals 1 if CEO and the Chairman are the same individual, 0 otherwise (Source: IPO Prospectuses)
PROPIND	Percentage of the board that consists of independent directors (Source: IPO Prospectuses)
RPTINC_A	Sales and other income to related parties during year -1 divided by total assets at the end of year -2. This variable is calculated for all related parties, for key managerial personnel, and for corporate related parties. Corporate related parties include associates and joint ventures, holding companies, group companies, and fellow subsidiaries (Source: IPO Prospectuses).
PRERPT_INCDUM	Dummy Variable that equals 1 if Year -1 Income before Extraordinary Items - Sales and other income to related parties during year -1 + Purchases from and Expenses incurred with related parties in year -1 is less than 0, 0 otherwise (Source: IPO Prospectuses)
LOG_ASSETS	Log of Total Assets at the end of year -1 (Source: IPO Prospectuses)
LAG_RPTINC_A	RPTINC_A in year -2
PRERPT_CHINCDUM	Dummy Variable that equals 1 if (IBEI_1 - Sales and other income to related parties during year -1 + Purchases from and Expenses during year -1) - (IBEI_2 - Sales and other income to related parties during year -2 + Purchases from and Expenses during year -2) incurred with related parties in year -1 is less than 0, 0 otherwise (Source: IPO Prospectuses)
PRERPT_SGRO_A	(Total sales in year -1 less sales to related parties in year -1) - (Total sales in year -2 less sales to related parties in year -2), divided by total assets at the end of year -2 (Source: IPO Prospectuses)
PRERPT_OCF_A	(OCF_1 - Sales and other income to related parties during year -1 + Purchases from and Expenses during year -1), divided by total assets at the end of year -2 (Source: IPO Prospectuses)
IBEI_1	Profit in year -1; profit excludes extraordinary items, discontinued operations, and the effect of changes in accounting methods. Minority interest / Non-controlling interest is excluded.
BV_1	Shareholder's equity excluding minority interest / non-controlling interest at the end of year -1.
OCF_A_0	Operating Cash Flows in year 0 divided by Total Assets in year -1 (Source: CMIE Prowess and IPO Prospectuses)
OCF_A_1-	Operating Cash Flows in year -1 divided by Total Assets in year -2 (Source: IPO Prospectuses)
OCF_A_1+	Operating Cash Flows in year +1 divided by Total Assets in year 0 (Source: CMIE Prowess)
CHOCF_A_0	Change in Operating Cash Flows in year 0 divided by Total Assets in year -1 (Source: CMIE Prowess and IPO Prospectuses)
CHOCF_A_1-	Change in Operating Cash Flows in year -1 divided by Total Assets in year -2 (Source: IPO Prospectuses)
CHOCF_A_1+	Change in Operating Cash Flows in year +1 divided by Total Assets in year 0 (Source: CMIE Prowess)
CH_RPTINC_A	Change in year -1 related party sales divided by Total Assets in year -2 (Source: IPO Prospectuses)
LOG_PROCEEDS	Logarithm of PROCEEDS (Source: SDC)
MCAP_OFFER_A	Market Capitalization based on offer price divided by Total Assets in year -1 (Source: SDC and IPO Prospectuses)

MCAP_DAY1_A	Market Capitalization on the close of first day trading divided by Total Assets in year -1 (Source: SDC, CMIE Prowess, and IPO Prospectuses)
ROA_1	Income before Extraordinary Items in year -1 divided by Total Assets at end of year -2 (Source: IPO Prospectuses)
BV_A_1	Book Value of Equity at the end of year -1 divided by Total Assets at the end of year -1 (Source: IPO Prospectuses)

Table 1
Sample Selection Screens, 1999-2009.

Start:	592
(-) Financial Firms	65
(-) Private placements	2
(-) Not Underwritten	3
(-) Follow-on offerings	1
(-) Multiple Tranches of same IPO	67
(-) Missing Prospectus or IPOs not qualifying per screens	178
(-) Pre-Offering Annual RPT data not disclosed	22
Final Sample:	253

The initial sample was obtained from Thomson Reuters SDC New Issues Database. The screens were applied based on data reported in SDC or from reading prospectuses that were downloaded from www.sebi.gov.in or purchased from www.primedatabase.com

Table 2
Distribution of IPOs over time (1999-2009).

Year	Number of Offerings	Frequency %
1999	1	0.4
2000	3	1.2
2001	0	0.0
2002	2	0.8
2003	3	1.2
2004	19	7.5
2005	42	16.6
2006	61	24.1
2007	74	29.3
2008	33	13.0
2009	15	5.9

This table reports IPO frequency by calendar year. The sample was obtained from Thomson Reuters SDC New Issues Database and consists of 253 IPOs for the years 1999-2009.

Table 3
Offering Descriptive Statistics.

	Mean	Median	Std. Dev.	P1	P99
MCAP_OFFER (₹Million)	12,778.1	2,403.4	39,917.3	228.0	287,730.3
PROCEEDS (₹Million)	2235.8	802.2	6582.7	80.0	47134.7
OPRC (₹)	175.3	120.0	175.2	10.0	875.0
FIRST_CLOSE (₹)	224.9	139.5	237.5	11.9	1140.6
FIRSTDAY_RET	31%	16%	56%	-39%	242%
INSAFT	58%	58%	14%	25%	88%
BLAFT	6%	0%	10%	0%	39%
INDMB	1.9	1.5	1.1	0.4	5.2
LTD_A	0.3	0.3	0.2	0.0	0.9
AGE	14.1	12.0	9.2	0.0	57.0
UWRANK	0.7	0.6	0.2	0.2	1.0
BIGAUD	0.2	0.0	0.4	0.0	1.0
BSIZE	7.7	8.0	2.2	4.0	14.0
CEODUAL	0.4	0.0	0.5	0.0	1.0
PROPIND	0.5	0.5	0.2	0.0	0.9

This table presents the descriptive statistics for the variables used in the empirical analyses. The sample consists of 253 Indian IPOs from the years 1999-2009. All continuous variables are winsorized at the 1st and 99th percentiles. Variable Definitions are in Appendix A.

Table 4
Median Operating Performance around IPOs.

	Year -3	Year -2	Year -1	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Sales (₹Million)	447.9	695.2	1013.6	1308.9	1748.8	2204.1	2721.1	3257.1	3770.8
Number of obs.	260	262	267	254	258	257	255	253	243
Sales Growth		39%	35%	34%	32%	25%	17%	14%	16%
Number of Obs.		257	260	249	246	250	251	247	241
Income / Assets	4%	6%	8%	7%	6%	4%	4%	3%	3%
Number of Obs.	259	262	266	256	258	257	255	253	244
Loss Frequency	7%	4%	3%	4%	9%	14%	18%	22%	25%
Operating Cash Flows / Assets	7%	5%	6%	0%	1%	4%	5%	5%	5%
Number of Obs.	216	228	235	254	256	258	254	251	242
Accruals / Assets	-1%	3%	2%	6%	5%	0%	-1%	-2%	-2%
Number of Obs.	216	228	235	253	255	257	254	251	242

This table presents medians of performance data for years -3 to year +5, where year 0 is the year of the offering. The sample consists of 253 Indian IPOs from the years 1999-2009. Income equals income before extraordinary items. Data for years -3 to -1 are obtained from prospectuses, data for years 0 to +5 are from the Prowess Database of the Center for Monitoring the Indian Economy Private Limited (CMIE).

Table 5
Descriptive Statistics for Related Party Transactions.

	Year -5	Year -4	Year -3	Year -2	Year -1
# of obs.	122	160	218	239	253
RP Income (₹Million)	60.9	73.3	132.7	214.0	268.2
% non-zero obs.	43%	49%	52%	59%	60%
RP Income / Total Sales			7.0%	8.1%	9.5%
RP Expenses (₹Million)	43.1	57.8	63.1	76.4	91.5
% non-zero obs.	65%	68%	78%	81%	83%
RP Expenses / Total Sales			6.1%	5.1%	4.4%
Dividends Paid (₹Million)	1.9	2.9	1.3	1.5	3
Dividend Payout %			1.5%	1.2%	1.0%
Remuneration (₹Million)	3.0	3.7	4.0	5.5	7.2
Remuneration / Profit before Rem.			10%	8%	6%
Net Loans Given (₹Million)	19.2	32.8	31.6	53.0	88.7
Net Loans Given / Total Assets			0.5%	1.0%	1.9%
Net Loans Received (₹Million)	10.6	27.9	3.5	14.8	26.4
Net Loans Received / Total Assets			1.6%	1.1%	1.5%
Net Balance – Loans Receivable (₹Million)	11.9	26.5	32.3	59.2	46.9
Net Balance – Loans Receivable / Total Assets			1.2%	0.9%	0.4%
Net Equity Invested (₹Million)	4.8	37.4	18.9	22.5	27.9
Net Equity Received (₹Million)	5.3	2.0	4.9	14.6	19.5
Net Balance – Receivables (₹Million)	3.6	37.1	23.7	51.1	100.8
Net Balance – Receivables / Total Assets			-0.1%	1.8%	1.4%

This Table reports mean values of various related party transactions and balances from year -5 to year -1, relative to the offering year (year 0). Related party data and financial statement data are hand-collected from IPO prospectuses. All variables are winsorized at the 1st and 99th percentiles.

Table 6
Determinants of Pre-Offering RPT Income (RPTINC_A)

	All Transactions						KMP Transactions			Inter-Corporate Transactions		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Coef.	t-stat	p-value	Coef.	t-stat	p-value	Coef.	t-stat	p-value	Coef.	t-stat	p-value
INTERCEPT	0.05	0.31	0.76	-0.08	-0.68	0.50	-0.05	-1.57	0.12	-0.25	-2.73	0.01
PRERPT_INCDUM	**0.60**	**6.94**	**0.00**	**0.30**	**3.82**	**0.00**	0.02	0.96	0.34	**0.10**	**2.72**	**0.01**
INSAFT	**0.68**	**3.02**	**0.00**	**0.44**	**2.61**	**0.01**	-0.02	-0.32	0.75	0.16	1.41	0.16
BLAFT	0.42	1.30	0.20	0.32	1.45	0.15	-0.06	-0.72	0.47	0.10	0.68	0.50
BIGAUD	0.07	0.97	0.33	0.03	0.42	0.68	0.00	-0.10	0.92	0.00	0.09	0.93
BSIZE	0.00	0.00	1.00	**0.02**	**1.67**	**0.10**	0.00	0.39	0.69	**-0.01**	**-1.72**	**0.09**
PROPIND	-0.07	-0.51	0.61	0.11	0.95	0.35	-0.01	-0.35	0.73	-0.07	-1.11	0.27
CEODUAL	0.07	1.23	0.22	0.01	0.34	0.73	-0.02	-1.49	0.14	-0.01	-0.61	0.54
INDMB	**-0.04**	**-1.83**	**0.07**	**-0.05**	**-1.93**	**0.06**	**-0.01**	**-2.03**	**0.04**	0.01	0.89	0.38
AGE	0.00	0.59	0.56	0.00	1.13	0.26	**0.00**	**1.68**	**0.09**	0.00	1.17	0.24
LTDA	**-0.32**	**-2.38**	**0.02**	**-0.24**	**-2.30**	**0.02**	0.02	0.90	0.37	0.00	0.08	0.93
LOG_ASSETS	**-0.06**	**-2.20**	**0.03**	**-0.05**	**-1.63**	**0.10**	-0.01	-0.92	0.36	0.01	1.09	0.28
LAG_RPTINC_A				**0.40**	**3.45**	**0.00**	**0.97**	**14.25**	**0.00**	**1.00**	**18.46**	**0.00**
PRERPT_CHINCDUM				**0.10**	**1.76**	**0.08**	**0.04**	**2.16**	**0.03**	**0.08**	**2.70**	**0.01**
PRERPT_SGRO_A				-0.05	-1.18	0.24	0.01	1.14	0.26	-0.01	-0.44	0.66
PRERPT_OCF_A				0.01	0.14	0.89	0.01	0.34	0.74	**0.12**	**2.25**	**0.03**
# of obs.			244			215			215			215

The table reports coefficients, t-statistics, and p-values for tobit regressions of RPT Income in year -1 divided by total assets at end of year -2 (RPTINC_A) on various variables. All continuous variables are winsorized at the 1st and 99th percentiles. Standard errors account for heteroscedasticity. Variable definitions are in Appendix A.

Table 7
Operating Cash Flows in Year 0 and +1 and Pre-offering RPT Income

	OCF_A_0			OCF_A_1+			CHOCF_A_0			CHOCF_A_1+		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Coef.	t-stat	p-value	Coef.	t-stat	p-value	Coef.	t-stat	p-value	Coef.	t-stat	p-value
Intercept	**-0.25**	**-1.68**	**0.10**	**-0.16**	**-2.10**	**0.04**	**-0.36**	**-2.29**	**0.02**	-0.12	-1.16	0.25
OCF_A_1-	**0.41**	**5.70**	**0.00**									
OCF_A_0				**0.13**	**2.33**	**0.02**						
CHOCF_A_1-							**-0.16**	**-2.73**	**0.01**			
CHOCF_A_0										**-0.38**	**-6.13**	**0.00**
RPTINC_A	0.01	0.09	0.93	-0.03	-0.76	0.45						
CH_RPTINC_A							0.00	-0.03	0.98	-0.11	-1.61	0.11
LOG PROCEEDS	-0.03	-1.09	0.28	0.01	0.42	0.67	0.00	-0.05	0.96	0.00	0.85	0.40
INSAFT	**0.35**	**2.35**	**0.02**	**0.33**	**3.52**	**0.00**	**0.26**	**1.99**	**0.05**	**0.28**	**2.67**	**0.01**
BLAFT	0.16	0.61	0.54	**0.33**	**2.07**	**0.04**	0.32	1.48	0.14	**0.36**	**2.29**	**0.02**
BIGAUD	**0.12**	**2.10**	**0.04**	0.03	0.82	0.41	**0.08**	**1.68**	**0.10**	**0.06**	**2.42**	**0.02**
BSIZE	0.01	1.29	0.20	-0.01	-1.47	0.14	0.00	0.63	0.53	0.00	-1.02	0.31
PROPIND	0.00	-0.01	0.99	0.01	0.18	0.86	0.16	1.45	0.15	0.02	0.26	0.80
CEODUAL	0.02	0.47	0.64	-0.02	-0.91	0.36	0.02	0.65	0.52	-0.01	-0.47	0.64
INDMB	0.00	-0.35	0.73	-0.01	-0.83	0.41	0.00	-0.12	0.91	-0.01	-0.65	0.52
AGE	0.00	0.41	0.68	**0.00**	**1.94**	**0.05**	0.00	0.38	0.70	**0.00**	**2.21**	**0.03**
LTDA	-0.08	-0.89	0.37	-0.06	-1.19	0.24	0.04	0.56	0.57	-0.01	-0.15	0.88
LOG_ASSETS	0.01	0.56	0.58	0.00	-0.14	0.89	0.00	-0.16	0.87	-0.01	-0.64	0.52
Adjusted R^2			18.9%			12.0%			5.9%			24.9%
# of obs.			210			222			200			195

Columns (1) to (6) of this table reports coefficients, t-statistics, p-values, for regressions of the level of Operating Cash Flows in year 0 (OCF_A_0) and year +1 (OCF_A_1+) divided by Total Assets at the end of year -1 and year 0, respectively on various variables. Columns (7) to (12) report regressions when the

dependent variable is change in cash flows in year 0 (CHOCF_A_0) and year +1 (CHOCF_A_1+), divided by lagged total assets. All continuous variables are winsorized at the 1st and 99th percentiles. Standard errors account for heteroscedasticity. Variable definitions are in Appendix A.

Table 8
Offering Price and First-day Close Market Valuations and pre-offering RPT Income.

	MCAP_OFFER_A			MCAP_DAY1_A		
	Coef.	t-stat	p-value	Coef.	t-stat	p-value
INTERCEPT	-0.06	-0.04	0.97	-0.56	-0.25	0.81
ROA_1	**4.18**	**2.38**	**0.02**	**5.08**	**1.94**	**0.05**
BV_A_1	0.82	0.65	0.51	1.72	0.78	0.44
RPTINC_A	-0.91	-0.73	0.47	-2.29	-1.61	0.11
CH_RPTINC_A	3.09	1.20	0.23	4.23	1.48	0.14
INSAFT	**5.51**	**3.85**	**0.00**	**8.96**	**3.97**	**0.00**
BLAFT	**2.98**	**1.65**	**0.10**	**4.71**	**1.81**	**0.07**
BIGAUD	0.95	1.47	0.14	1.58	1.58	0.12
BSIZE	**-0.14**	**-2.05**	**0.04**	**-0.19**	**-1.98**	**0.05**
PROPIND	0.53	0.58	0.56	0.64	0.51	0.61
CEODUAL	-0.21	-0.64	0.52	-0.21	-0.43	0.67
INDMB	**0.35**	**2.22**	**0.03**	**0.61**	**2.23**	**0.03**
AGE	0.02	1.10	0.27	0.02	1.04	0.30
LTDA	-1.08	-0.86	0.39	-2.99	-1.45	0.15
LOG_ASSETS	**-0.70**	**-3.47**	**0.00**	**-0.88**	**-3.48**	**0.00**
UWRANK	**5.53**	**5.25**	**0.00**	**6.28**	**5.09**	**0.00**
Adjusted R^2			42.8%			40.9%
# of obs.			233			233

The table reports coefficients, t-statistics, and p-values for regressions of Market Capitalization on the offer date (MCAP_OFFER_A) and on the close of the first day of trading (MCAP_DAY1_A) on various variables. Both dependent variables are divided by Total Assets at the end of year -1 on various variables. All continuous variables are winsorized at the 1st and 99th percentiles. Standard errors account for heteroscedasticity. Variable definitions are in Appendix A.