Anchor Investors in IPOs [1]

Amit Bubna
Indian School of Business
Gachibowli, Hyderabad, India 500 032

Nagpurnanand Prabhala
Robert H. Smith School of Business
University of Maryland, College Park, MD 20742.

January 18, 2014

[1]This working paper is part of the NSE-NYU Stern School of Business Initiative for the Study of Indian Capital Markets. The author(s) acknowledge the support of the initiative. The views expressed in this Working Paper are those of the author(s) and do not necessarily represent those of NSE or NYU. We thank Rohith Lokareddy for excellent research assistance. We are grateful to professionals in the underwriting industry, who prefer to not be named, for insights on the Indian IPO market. We benefited from the comments of participants at the NSE-NYU Indian Capital Market Conference, IGIDR Emerging Markets Finance Conference and ISB Research Seminar. The authors may be reached at their respective email addresses: amit_bubna@isb.edu, and prabhala@umd.edu.

Abstract

Anchor Investors in IPOs

In July 2009, the Securities and Exchange Board of India (SEBI) permitted a version of bookbuilding in which IPO managers solicit bids from and allocate allocations to anchor investors in the IPO pre-market, subject to disclosure of the price, quantity, and identity of anchors participating in the pre-market bookbuilding. We obtain share allocation data in anchor IPOs. We characterize the nature of the share allocations in book built IPOs and examine its relation to bidding, short-term underpricing, overpricing, and flipping in IPOs.

We find that anchor investors influence short-run IPO outcomes mainly through their effect on bidding, particularly bidding by other institutional investors and in hard-to-price issues, consistent with a certification effect. Anchor backed IPOs are not significantly different in underpricing, perform better over longer intervals of up to 1 year and exhibit lower volatility in returns over 1 year after the IPO. We find heterogeneity in anchor effects. Anchor identity and affiliation with underwriters matter as does the concentration of allocations across multiple anchors. Anchors do not appear to be short-term flippers. Preliminary counterfactual analyses suggest that transparent bookbuilding implicit in anchor issues is better than bookbuilding with secret books, the U.S. approach. Overall, there are few harmful effects and detectable benefits of anchor IPOs. *How* bookbuilding is used appears to be at least as important as *whether* bookbuilding is used. Transparency in bookbuilding dominates secrecy, and offers a potential solution to side-effects from giving underwriters free rein in allocation.

JEL classification: G20, G24

Key words: Bookbuilding, IPOs, Transparency

1 Introduction

The decision to go public is an important decision in a firm's life cycle. Transitioning from a private firm to a publicly traded firm through an initial public offering (IPO) gives the firm a rich vector of resources. These include analyst following, the ability to tap more sources of capital, the ability to use its stock as currency for future acquisitions, and greater awareness that can lead to better product market outcomes for the firm. By providing exit options for entrepreneurs and venture capitalists, a well functioning IPO market can create a favorable investment environment for young innovative businesses.

Our study is concerned with the process of going public. A firm contemplating an IPO hires investment bankers to manage the IPO process. How to price an IPO is among the more important decisions that the issue underwriter must make. The dominant approach in the U.S. is bookbuilding, in which the underwriter gathers pricing information from prospective investors during the pre-IPO period through "road shows." As quid pro quo, the underwriter provides informal assurance that investors will get IPO share allocations, which is a credible commitment as underwriters control allocations in the bookbuilding mechanism. Bookbuilding tends to be a dominant mechanism in the markets that permit it (Derrien and Womack, 2003; Jagannathan and Sherman, 2005; Jagannathan, Jirnyi, and Sherman, 2009).

The ability to control allocations is central to effective price discovery through bookbuilding. However, it is also the most criticized feature of bookbuilding. Much of the criticism comes from the fact that IPOs are on average underpriced relative to after-market prices. For instance, the money left on the table by U.S. IPOs between 1980 and 2012, which are the profits made if investors buy IPOs at the offer price and sell the shares on day 1, is about $135 billion.[1] Thus, sweeping powers over allocation also open up avenues for abuses and corruption (Smith and Pulliam, 2000; Nimalendran, Ritter, and Zhang, 2007; Liu and Ritter, 2010). For instance, investment banks managing an IPO can provide IPO shares to their favored clients in exchange for future business in a practice called spinning (Liu and Ritter, 2010). The industry and regulatory response to reports of abuses is to develop new

[1]See Jay Ritter's website http://bear.warrington.ufl.edu/ritter/IPOs2012Statistics.pdf for details and Ljungqvist (2005) for a review of the underpricing literature.

norms for the IPO process such as FINRA 5131 that places restrictions on spinning in the U.S. market.

The academic literature continues to debate on effective mechanism design for price discovery in IPOs.[2] The empirical work on bookbuilding is less developed. A key issue is the secrecy surrounding the IPO allocation process. Underwriters around the world face few regulations compelling them to disclose IPO share allocations. Prior work on allocations includes Hanley and Wilhelm (1995) and Aggarwal, Prabhala, and Puri (2003), who report evidence on allocations to institutional investors as a whole. Micro-level studies of allocation at the individual investor level include Cornelli and Goldreich (2001, 2003) and Jenkinson and Jones (2004) for the European market, and Bubna and Prabhala (2011) for the Indian IPOs, and Chiang, Qian, and Sherman (2010) and Chiang, Hirshleifer, Qian, and Sherman (2011) for Taiwense IPOs. The limited supply of allocation data leads Ritter and Welch (2002) to remark well over a decade ago that share allocations represent the most promising line of research. Data continue to be a significant gap in the literature. Our study contributes new micro-level share allocation data in book built IPOs from the Indian IPO market.

We exploit regulatory changes in the Indian market in July 2009 that reintroduced a version of bookbuilding into the Indian market. While there are several aspects of these rules that we discuss below, one aspect is a "sunshine" requirement on the allocation process. Underwriters must publicly disclose the discretionary share allocations they make to investors. Giving allocation powers to underwriters but requiring transparency in how the powers are used has the potential to mitigate the abuses associated with bookbuilding. We present data from this experiment in the Indian market. We obtain, code, and analyze the disclosure data relating to the discretionary share allocations in the bookbuilding process. We conduct two tests. One test differentiates between issues with bookbuilding and issues without, exploiting samples of firms going public through the two mechanisms. The second tests examine variation within bookbuilt IPOs. We study the relation between how allocation powers are used and the bidding, short-run pricing, and long-run pricing of IPOs.

[2]A partial list of theoretical models includes Benveniste and Spindt (1989), Spatt and Srivastava (1991), Sherman (2000), Biais and Faurgeron-Crouzet (2002), Parlour and Rajan (2002), Chemmanur and Liu (2003), Sherman and Titman (2002), Sherman (2005). See Dasgupta and Hansen (2007) for a review of auction models of IPOs.

Before motivating the specific tests and the discussing results, we briefly review the regulatory change in India and the related disclosures that make this study feasible. Bubna and Prabhala (2011) study Indian IPOs in an earlier period between 2004 and 2006, focusing on the stoppage of bookbuilding around November 2005 due to regulatory changes in this paper. We focus on a much later period starting in July 2009, which reopened bookbuilding through the use of "anchor" investors. Anchors are institutional investors bidding on IPOs who are guaranteed share allocations in the pre-market price discovery phase just as in U.S. style bookbuilding. Data on allocations in this phase form the basis of our study.

As the anchor investor mechanism is critical to our study, we describe it in some detail before proceeding to the tests. In July 2009, the Securities and Exchange Board of India (SEBI), the equivalent of the U.S. SEC, passed rules permitting underwriters to allot shares in the IPO pre-market to designated anchor investors, who are qualified institutional buyers (QIBs). The rules place some constraints on the price and quantity of shares involved in the anchor phase. For instance, all anchors were required to buy shares at a single fixed price to be disclosed prior to the opening of the IPO for public bidding. If the eventual price of the IPO is above the anchor offer price, anchor investors were required to pay the difference. However, if the final offer price is lower, anchors still pay the higher fixed price set for the anchor quota. The quantity reserved for anchors is limited to about half the institutional portion of the IPO, which in turn is about half the total number of shares offered. Within these broad parameters, underwriters enjoy freedom in who to use as anchor investors and how to distribute shareholding to them.

The anchor investor process has a number of similarities to the bookbuilding process practiced in the U.S. A key similarity is the control exerted by the underwriter who has power over whom to grant and how many shares to grant in the anchor portion. The underwriter can distribute the shares evenly or can choose to concentrate the shares in a few investors and give the other investors fewer shares. As in the U.S., anchors are institutions targeted by underwriters for pre-marketing the IPO. Finally, as in the U.S., there is pressure on anchors to not flip shares in the after-market. As Aggarwal (2000) points out, flipping is restrained in the U.S. for up to 30 days through a system of penalty bids. In the Indian

market, flipping is constrained by regulations, which explicitly prohibit anchors from selling their allocations for 30 days after the IPO.

There are two important differences between the anchor investor system and the U.S. bookbuilding method. One difference is in the secrecy of the book. In the U.S., underwriters are not required to formally reveal their books although some may choose to informally indicate the strength of their order book to investors.[3] In the Indian market, the book is public knowledge. The identity of the anchor investors and their allocations must be made public one day before the opening of the IPO to public bidding. The second difference is that the anchor investor system has two stages of share allocation with potentially different offer prices. The Indian IPO process imposes a more onerous burden on anchors because they pay the maximum of the pre-offer price negotiated with them and the final offer price. Thus, it is quite possible that anchors end up paying more for shares compared to later bidders in the IPO.

As the above discussion suggests, anchor investors play the role of investors providing information to underwriters in bookbuilding models. Thus, studying IPOs with anchor investing brings to the table new data on IPO allocations in book built IPOs. Relative to the European data analyzed in Cornelli and Goldreich (2001, 2003), there are two differences. The bookbuilding segment has fixed price bidding unlike the limit and market order bids they and Bubna and Prabhala (2011) analyze. A second difference is that we have books across multiple underwriters. We also have information on investor identity, which allows new tests regarding the composition and nature of the IPO book and its relation to outcomes.

Our primary sample comprises IPOs offered between 2009 and 2012 after anchor investors are permitted in the Indian market. There are 129 IPOs offered during this period, 49 of which were offered with the anchor investor option. Allocation in the remaining IPOs was through a pro-rata system in which allocations are proportional to bids. We collect data on the identity of the anchors, the price paid by anchors, and the quantity allocated to each anchor in the 49 anchor investor backed IPOs.

We conduct three analyses. The first is a descriptive analysis of the share allocation pat-

[3]See, e.g., the Harvard case Tiffany & Company 9-288-022.

terns. This is of some interest in its own right given the limited datasets on IPO allocations in prior work, but the description also develops the necessary institutional background that motivates the empirical specifications. The second is a test of anchor-backed IPOs relative to non-anchor backed IPOs. We examine the relation between having anchors and the extent and nature of bidding by retail and institutional investors in later public phases. The key goal of an underwriter developing a book with informed investors is to influence bidding by uninformed investors. We test whether such effects exist by comparing patterns in anchor IPOs with non-anchor IPOs. The other dependent variables of interest are the traditional short and long-run IPO pricing, which are the focus of much of the finance literature, and volatility of returns. The short run performance is the day 1 underpricing of an IPO, while the longer run returns are the 1-year market-adjusted returns after the IPO.

The third tests focus on the structure of the books. One variable of interest is anchor identity. Anchors are qualified institutional buyers but there is considerable variation in the nature of the anchor investor(s). Some anchors are large, while others are small; anchors may be domestic or foreign; and anchors may belong to small or large fund families. A second variable is the structure of the book. For instance, in the Specialty Restaurants IPO, all anchors got roughly equal shares while in Ashoka Buildcon anchor allocations varied. A third variable of interest varies across *issues*: the prices at which anchors are allocated shares. In the IPOs of MCX or SKS Finance, anchor IPOs invest at the top of the filing range, while the IPO of MT Educare features anchor investing in the middle of the filing range. Motivated by the conflicts of interest versus certification literature (e.g., Puri, 1996; Michaely and Womack, 1999; Drucker and Puri, 2005), we also examine the presence (or absence) of anchors from the same fund families as the underwriter. These tests essentially exploit the heterogeneity in bookbuilding. We can thereby shed light on not just the average effect of bookbuilding but on how it is *implemented*.

We briefly summarize the main results. In our sample, there are 49 IPOs with anchor investors. There is an average of 11 anchor investors per IPO and the number ranges from 2 to 36 investors. The average anchor investor gets 16% (median = 13%) of the number of shares distributed to anchors. These computations treat each anchor bidder as a separate

entity. However, inspection of the data reveals that several funds belong to a common family, suggesting that participation in bookbuilding is at the family level (Gaspar, Massa, and Matos, 2006). Across all IPOs in our sample, we identify a total of 117 unique bidder families. There are an average of 7 families anchoring an IPO and each family gets an average of 22% of the IPO. With the exception of one IPO, there is at least one anchor who is a domestic mutual fund and another who is a foreign institutional investor.

We consider the price at which anchors are allocated shares. The regulations in India stipulate that anchors must pay the maximum of the offer price they pay in the anchor stage and the offer price investors pay. Thus, anchor pricing at the top end of the filing range sends a strong signal about their belief in IPO quality. Indian IPOs are not priced above the top end of the filing range. Thus, anchors priced at the top end of the filing range pay the maximum possible price for their IPOs. It is possible that the final offer price to non-anchor investors is lower if there is insufficient demand, but this benefit is unavailable to anchors. In our sample of 49 IPOs, 33 (55%) are priced at the top of the range and only 9 are at the floor of the filing range. In contrast, 62 (78%) non-anchor IPOs are priced at the top of the price band.

We turn to IPO returns next. A particular concern in the popular press is that while anchor investors were intended to be a source of comfort for investors and de-risk their IPO investments, anchors increased the risk of investing. Specifically, anchors may have been used to boost an issue upfront to unreasonable valuations and they exit after the mandatory waiting period, when the IPO crashes. A related concern is that anchors skim the cream, leaving only the worse quality issues for others.[4] Of course, these agency hypotheses can only be tested with a systematic analysis of the anchor issue IPO returns relative to their risk benchmarks, differenced against IPOs without anchors. We conduct tests of short-run and long-run underpricing as well as volatility of returns of anchor backed IPOs to test the hypotheses.

The average underpricing, net of the return on the BSE Sensex Index, in our sample is 3.6%. The underpricing for anchor IPOs and non-anchor IPOs equals 5.9% and 2.3%,

[4] "Mutual Funds May Shun IPOs as Anchors Get The Edge" (*The Times of India*, October 20, 2010.)

respectively. The results provide preliminary evidence that the average anchor-backed issue is more underpriced than the average non-anchor backed issue. Anchors are exposed to price risks. We also find that anchor investors in 7 IPOs (14%) paid more than public offer price, so the risk that anchors overpay for issues is real. However, in a multivariate setting, anchor IPOs are not more underpriced than non-anchor backed IPOs. Counterfactual regressions based on coefficients from a prior period before November 2005 suggest that underpricing would have been higher if the anchor investor IPOs had adopted straight bookbuilding instead of anchor investor-style bookbuilding. We also find that anchor-backed offerings are more oversubscribed. Interestingly, this finding is primarily driven by *institutional* rather than retail investors. The results are also driven by smaller IPOs and offerings led by less-reputed underwriters, proxies for issues with greater information asymmetry. In such opaque IPOs, anchor participation also generates lower volatility of returns and superior long-term returns.

We have data on the types of anchor investors. While bookbuilding models make the simplifying assumption that investors bidding for IPOs are similar, there is variation in the nature of these investors and this potentially leads to variation in quality of the pre-IPO price discovery. We consider several bidder characteristics. One is the size of institutional family based on the number of funds holding (Gaspar, Massa, and Matos, 2006). Second, we consider the extent of participation of the fund's family in IPOs. We examine the implication of different anchor attributes on underpricing and oversubscription across anchor-backed IPOs. Issues with more unique family investors have greater average underpricing. We consider whether anchors come from the same family as the underwriters. Underpricing is lower in IPOs with at least one investor from the same family as the issue's underwriter. The results are consistent with certification effects although it is possible that same-family investors may be co-opted in higher priced issues as they are more willing to provide ex-post price support for tightly priced IPOs. Anchor-backed IPOs with a higher proportion of FII investors also have lower underpricing. We examine data on the distribution of shares to anchors across fund families. Allocation need not be, and is not, uniform. We determine the concentration index of allocation across families in each IPO. Offerings with greater allocation concentration have lower oversubsciption compared to offerings with low allocation

concentration. We conclude that there is relatively strong variation *within* anchor investor IPOs, suggesting that how bookbuilding is implemented is as important as bookbuilding per se.

We examine whether anchors are long-term investors (Banerjee, Hansen, and Hrnjic, 2006; Goyal and Tam, 2009). These investors are desired by underwriters because they do not generate short-term pressures on IPO prices in the after-market. We obtain data on bulk and block transactions on both the National Stock Exchange (NSE) as well as the Bombay Stock Exchange (BSE) to see whether anchor investors flip their shares as soon as the 30-day lock-in period expires. We find no evidence of flipping. We regard this evidence as tentative. The data do not capture liquidations through a sequence of small trades executed by anchors.

It is useful to point our that our results shed light on a mechanism that potentially eliminates the rent-seeking incentives created by bookbuilding while preserving its better features. An underwriter's power in book built IPOs is a composite of two powers, (a) the ability to allocate the shares as the underwriter deems fit; and (b) keep the allocation patterns secret. The anchor system in India unbundles the two. Underwriters have nearly the same latitude and discretion in allocation powers of the U.S. IPO process, but the allocations are now a matter of public record. Thus, our study characterizes outcomes when the *secrecy* in allocations in detached and eliminated from the power to allocate. The question is of regulatory interest as the incentives for allocation malfeasance perhaps comes more from the secrecy of the book than allocation powers per se. Eliminating secrecy could potentially increase the effectiveness of giving powers while eliminating the dark side associated with the misuse of power.

The rest of the paper is organized as follows. Section 2 describes institutional background. Section 3 discusses the data. Section 4 gives descriptive statistics. Section 5 provides the empirical results. Section 6 concludes.

2 Institutional Setting

2.1 The bookbuilding process

Bookbuilding was initially introduced to the Indian market in September 1999. While the subsequent 4 years witnessed several changes to the IPO regulations, the regulatory environment was more stable after 2004 (SEBI, 2006). The initial version of bookbuilding in the Indian market is similar to that in the U.S. and Europe. An issuer interested in going public appoints an investment banker to manage the IPO process. The investment banker conducts extensive pre-market information gathering by sampling demands of potential institutional investors. The information is used to set a price band for the issue. Regulations cap the price band at 20% of the floor price, wider than the typical price range of $2 or 10% in the U.S. IPO market.

The version of bookbuilding introduced in India allowed two types of bids. The type of bid depends on investor category. Investors are categorized as small (or retail) and non-retail (including institutional investors). Retail investors have a cap on the value of their bids. Unlike retail investors who can submit either market or limit orders, non-retail bidders must place only limit bids. Unlike the U.S. or the European markets, bids are legally binding. The quantity of shares available for allocation for retail and institutional investors is known before the offer. Once the bidding phase ends, the allocation process begins and offer price set. The offer price is uniform for all bidders.

All individuals - small "retail" investors or high net worth individuals are treated on a non-discriminatory basis for allocation. However, prior to November 2005, qualified institutional bidders (QIBs) received allocation at the discretion of the IPO managers. After November 2005, this power was withdrawn from underwriters, effectively making the bookbuilding method a dirty Dutch auction. Consequently, *all* bidders receive proportional allocation prior to the July 2009 change introducing anchor investors.

2.2 Anchor investor in bookbuilding

In July 2009, SEBI introduced an alternative IPO mechanism, referred to as the bookbuildig route with "anchor" investor. Under this mechanism, the issuing firm can offer upto 30% of the portion available for allocation to the QIBs, to "anchor" QIB investors. For instance, if the QIB component of the offering is 50% of the total issue, up to 15% of the total offering may be allocated to anchor investors. One-third of the anchor investor portion of the shares must be reserved for domestic mutual funds. The anchor investor must submit a bid not less than INR 100 million. The mininum number of anchors is 2 for an issue of upto INR 2500 million, and 5 for larger issues. There is no restriction on the allotment size.[5]

The process of anchor identification, pricing of the anchor tranche, and allocation to anchors must be finalized one day before an issue opens for bidding to public investors. Allocation to anchor investors is on a discretionary basis and the offer price made public prior to the opening of the issue. The SEBI mandates that the parameters for selection of anchor investors be clearly identified ex ante and be available for SEBI inspection. The rest of the issue takes place in the form of the dirty Dutch auction with proportional allocation. Anchor investors are eligible to participate as regular QIB participants. Anchor investors pay the higher of the price determined in the first stage and the price determined in the second stage. Allocations are typically made within 15 days of the issue closing.

Anchor investors face a 30-day lock in period for the anchor quota shares. Like the U.S. initial investors, promoters, private equity firm shareholders and others holding shares before the IPO process have a 1-year lock in period. This lock-in period also applies to QIBs investing prior to the IPOs. However, venture capital investors who have invested for at least one year prior to the filing of the draft IPO prospectus are exempt from the lock in. Since 2007, issuing firms no longer have the option to avoid an IPO grade. It is now mandatory for them to obtain a grade from at least one credit rating agency. Issuing firms must subsequently disclose all grades obtained.

[5]In November 2011, SEBI proposed a cap on the number of anchor investors to deter small allocations to a large number of anchors. For offerings below INR 100 million, a maximum of 2 anchor investors is proposed. For offerings between INR 100 million and INR 2500 million, there can be a minimum of 2 and a maximum of 5 anchor investors, with a minimum allotment of INR 50 million per anchor. For offerings above INR 2500 million, there can be a minimum of 5 and a maximum of 25 anchors.

3 Data

Prime database (henceforth Prime), a major data provider for Indian capital markets, is our primary source of data for Indian IPOs. We obtain data by bidder category (retail, QIB, anchor investor) on the aggregate bidding in each IPO, such as oversubscription, issue size, number of bidders, the number of shares and value of the bid, and the number of bidders who receive allocation, by reading the Key Response Data Summary sheet in Prime. We use Advanced Data Search in Prime to obtain basic issue and issuer characteristics, such as the list of lead managers, IPO grades, listing exchange and the offer price for each category of bidder (retail, QIB and anchor investor). We use the lead manager data to establish a reputation variable. For every offering, we assign the proceeds raised per lead manager on a prorata basis to all managers who are identified as lead managers. For each year, we rank managers based on the share of total proceeds in that year. We define "Reputed Lead Managers" as a dummy variable that takes the value of one if the offering has a lead manager ranked in the top five in the offering year, and zero otherwise.

Prime provides data on issue opening date, listing date on the exchanges and the face value of the offering. Price band information is available from "IPO Price Bands". Prime flags whether an IPO uses the fixed price, bookbuilding or anchor investor route. It also provides data on anchor IPOs, such as their bidding date, names of QIBs who participate as anchors in each listing, and their share allocations. Thus, we have a unique situation where we have data on the identity of the investor as well as her allocation in the offering. These data are typically unavailable to researchers in standard IPO mechanisms. In addition, often multiple anchor investors are part of the same family or parent firm. For instance, ICICI Ltd. offers multiple mutual funds, or JF India Fund and JF Eastern Smaller Companies Fund are both FIIs and a part of J P Morgan. We assign each anchor investor, domestic or foreign, to a "parent" firm - ICICI and J P Morgan, in the above two examples.

Prowess, a large database of Indian companies maintained by the Center for Monitoring the Indian Economy (CMIE), provides data on important firm-level characteristics, such as incorporation year, 3-digit industry classification and firm's symbol on each of the two

exchanges, the Bombay Stock Exchange (BSE) and the National Stock Exchange (NSE). We compute "Age" as the IPO year minus the incorporation year of the firm. We obtain time series data for the BSE SENSEX (index of the top-30 stocks on the BSE), stock prices and trading volume on both exchanges for each firm from Prowess. Virtually all firms in India list on either the BSE or the NSE, or both. For offerings listed on both exchanges, if the listing date on the two exchanges is different, we choose the earlier listing date and the corresponding stock prices. If, on the other hand, the listing dates are the same, we use the data from the BSE. Based on the stock prices, we define underpricing as of time period t as the difference between the closing price at the close of trading after time t of the listing date and the issue price, as a percentage of the issue price. Given the lag between the offer date and list date, we market-adjust IPO underpricing by the return on the BSE SENSEX index.

Given the 30-day lock-in for anchor investors, we also want to see what happens when the restriction is no longer binding. We obtain data on block and bulk deals on both exchanges for each offering from Prowess. The data capture the nature of the transaction (buy or sell), transaction date, deal type (block or bulk deal), firm name, name of transacting client, transaction quantity and price. As the name suggests, block and bulk deals capture large transactions. Block deals are transactions that involve at least 500,000 shares or a minimum value of INR 50 million while transactions involving at least 0.5 percent of the firm's equity shares are classified as bulk deals. These data need not necessarily capture all transactions by anchor investors, for instance if they transact in small chunks of shares thereby falling below the radar. We hand-match the list of transactors in this market to the list of anchor investors. In addition, as in the case of anchor data, we assign each of the institutional transactors to a fund family.

There are two key challenges in using data from both Prowess and Prime. First, Prime captures the firm name as of the issuing date. Prowess, on the other hand, reflects the most recent name. This makes it difficult to merge data from these 2 sources. We manually search and obtain information on previous names of the list of firms on Prowess and use it to merge the data with Prime. Second, we obtain adjusted closing prices for each firm in our sample from Prowess. Prowess back-adjusts all prices based on stock bonus, stock

splits and consolidation. Unfortunately, issue price in the IPO, as obained from Prime, is not appropriately adjusted, making for inaccurate underpricing calculation. To address this issue, we obtain as exhaustive a list as possible of stock bonus and splits, and estimate the adjustment factor to apply to the issue price. For instance, a firm with a 1:3 bonus as well as a split of 10 shares for every 5 shares will have an adjustment factor given by the inverse of $(1 + (3/1)) * (10/5)$.

4 Descriptive statistics

4.1 Anchors

This section discusses descriptive statistics about the types of QIBs who serve as anchor investors and the patterns of share allocations they receive. Our sample includes firms that went public between 2009 and 2012. During this time period, Table 1 shows that a fixed price mechanism was available but used only in 4 issues. We exclude these IPOs from our analysis.[6] The remaining IPOs are either anchor IPOs that are bookbuilt with allocation powers held by underwriters, or IPOs with no allocation discretion, which we term as non-anchor IPOs (no discretion).

In Panel A of Table 2, we find that the median anchor-backed IPO has 8 anchors with average share allocation of 12.5% of the total number of anchor shares. We measure allocation concentration using the Herfindahl-Hirschman Index (HHI), which is the sum of squared fraction of shares allotted to each anchor. The median allocation HHI among bidders is a modest 0.18. If the median number of 8 anchors receive equal allocations of 12.5% each, the HHI would be 0.125.

Panel B of Table 2 provides information by bidder type. We classify each anchor investor as being a foreign institutional investor (FII), domestic mutual fund (MF), domestic bank (Bank), domestic insurance company (IC), or venture capital firm (VC). FIIs are the dominant anchor type, followed by mutual funds, partly because regulations stipulate that a third

[6]Since 2012, small and medium enterprises (SMEs) have a separate IPO platform on the BSE and the NSE. Since their listing criteria are different, we exclude the SME IPOs from the tables.

of the anchor quota must be allocated to mutual funds. FIIs account for 50% of the total allocations in a median anchor-backed IPO. Not surprisingly, the HHI by type is relatively high at 0.63, indicating the dominance of FIIs and MFs in serving as anchors.

We also classify anchor investors by the buy fund family they belong to. Based on investor names in the dataset, we manually search for the family it belongs to. Anchors belong to 117 families. Examples of families include foreign institutions such as CALPERS and Blackrock. Domestic fund families include business groups such as Birla and Tata. A median family participates in 2 IPOs. Panel C presents descriptive statistics based on families. On average, an anchor-backed IPO has 6 unique families. The average allocation, at the level of families, in a median offering is 17%, with evidence of high allocation concentration. The HHI index in a median offering is 0.23 which is higher than what we would expect if allocation was split equally between 6 families in a median offering (HHI = 0.17). Underwriters appear to show some discrimination in whom they allocate shares to.

We next rank families based on their share of IPOs. We compute two measures, one based on the number of IPOs and another based on the dollar shares in each year. The average parent rank in an anchor-backed IPO is high. In fact, a median offering has at least 1 parent ranked in the top 3 in the IPO year. Financial institutions are often involved in underwriting as well as investing, thereby participating on both sides of the IPO market. ICICI Bank, one of the largest private banks in India, has several mutual funds as well as an investment banking arm, ICICI Securities Ltd. However, only 10% of the IPOs have at least one anchor who is from the same family as the lead manager. The number of such matches within an IPO is about a third.

4.2 Anchor versus non-anchor IPOs

Table 3 presents descriptive statistics of key characteristics of issuing firms based on the IPO mechanism chosen. Key variables, namely oversubscription, proceeds, and age, are winsorized at 2.5%.

The mean (median) IPO offering raises INR 1,724 (INR 1,283) million. Anchor-backed IPOs raise greater proceeds than non-anchor IPOs, consistent with larger issues requiring

greater distribution efforts that can be aided by the use of anchors. The median anchor backed IPO firm is 13 years old compared to 15 years for non-anchor IPOs but the difference is not significant. The average anchor backed IPO uses 3 underwriters compared to 1 for non-anchor IPOs. Anchor-backed IPOs tend to have more reputed underwriters compared to non-anchor IPOs.

Anchor IPOs are also of better quality, as they have higher IPO grades than non-anchor IPOs. Anchor IPOs have a narrower price band suggesting greater certainty about the firm's true value than in bookbuilt listings. A median firm going public in India is priced at the top of the price band across either mechanism. A lower proportion of anchor IPOs are eventually priced at the top compared to non-anchor IPOs. In 14% of the anchor IPOs, the anchors' offer price exceeds the retail offer price. These are the cases where anchors overpay for the IPOs compared to retail investors.

The median (mean) anchor-backed IPO oversubscription is 2.10 (1.85) compared to 1.55 (1.05) for book built IPOs. The evidence suggests that having an anchor is likely to attract other bidders. The higher oversubscription in anchor-backed IPOs is primarily driven by institutional bidders. The QIB portion of the public offer is oversubscribed by a mean (median) of 2.20 (1.97) times compared to 1.06 (0.68) for non-anchor IPOs. However, the situation is reversed for the retail portions of the IPOs, which are significantly greater for non-anchor IPOs compared to anchor IPOs. Institutional investors appear to pay more heed to anchor investor backing than do retail investors.

Table 4 shows underpricing net of the BSE Sensex Index return, for first day, 1 week, 1 month, 3 months, 6 months and 1 year. The median and mean first-day underpricing for all IPOs in our sample are 3.95% and 3.63%, respectively. The longer term market-adjusted returns for IPOs are negative, consistent with the broad IPO literature (e.g., Loughran and Ritter, 1995). Anchor-backed IPOs appear to be better investments than non-anchor IPOs. Anchor IPOs have greater initial underpricing and less negative long-term returns across all time periods of up to 1 year. The surge in overpricing beyond 1-month in anchor-backed IPOs is potentially related to the end of the lock-in period for anchor investors whereby market prices go up due to anchor investors' greater willingness (and ability) to sell their

allocated shares. There is less extreme variation between the 1-month and 3-month horizon for non-anchor IPOs. Within anchor-backed IPOs, underpricing is automatically lower for the anchor investor bucket than for the other categories given that the anchor investors pay the higher of the offer prices determined in the 2 stages of the bidding process.

The asymmetry between the positive initial returns and the negative long-term returns, coupled with 30-day lock-in requirements for anchors necessitate a different set of calculations to assess the profitability of anchor investing. Some of the differential may be eliminated because anchors face less competition than retail investors and thus do not need to lock in as much capital as retail investors to obtain assured allocations. We consider a back-of-the-envelope calculation to illustrate the numbers. Because we do not know the bid amount each anchor submits, we assume there is proportional allocation in the anchor category. The payoff equals $\frac{1}{OS} \times q \times r$ where OS equals oversubscription, q denotes issue size and r denotes underpricing. Based on category-specific data, we find that a median anchor investor's 30-day payoff is 3.8% compared with 4.3% for an institution in the post-anchor stage.[7] While the exact numbers undoubtedly vary from our stylized example, it illustrates that anchors do not necessarily get outsized profits for participating as anchor investors.

In sum, anchor-backed IPOs are larger and of better quality than non-anchor IPOs. Our univariate analysis points to greater underpricing in the short run and less negative long-term returns in anchor-backed IPOs relative to non-anchor investors. Underwriters exercise allocation discretion, which is reflected in the higher concentration indices than predicted by flat distributions by investor category and investor family. FIIs are the biggest beneficiaries of allocation discretion. Finally, anchor-backed IPOs attract reputed institutions and there is little evidence of underwriters favoring funds from within their own family.

[7]In a median anchor-backed IPO, 15% of the issue is available to anchor investors and 50% to QIBs in the second stage. If we consider means rather than medians, the expected payoff to anchor investors is 14.8% compared to 11.7% for non-anchor institutional bidders.

5 Multivariate Analysis

In this section, we present results from multivariate analyses. We compare underpricing, bidding activity, volatility in returns as well as long-term returns to investors in anchor- and non-anchor backed IPOs during 2009-2012. In addition, we provide results from a counterfactual exercise to determine the implications for underpricing if anchor-backed IPOs had instead chosen the non-anchor backed bookbuilding route for IPO. Finally, we show the implications of anchor types or characteristics for underpricing and bidding in anchor-backed IPOs.

5.1 Anchor versus non-anchor IPOs

Table 5 presents several regression results in which underpricing is regressed on anchor related variables and other controls. The main dependent variable is IPO underpricing and the key independent variable of interest is *ANCHOR IPO*, which takes the value 1 if the offering is anchor-backed, and zero otherwise.

Our control variables follow prior work in the IPO literature, specifically that related to the Indian IPO market, e.g., Bubna and Prabhala (2011). *OVRSUB* is the aggregate demand for the offering. We define it as the logarithm of ratio of the number of shares bid for to the number of shares offered in the IPO. IPO manager reputation, *REPUTED*, is based on the underwriter's relative share of the aggregate IPO proceeds in a given year. If an IPO has at least one underwriter in the top 5 underwriters by market share in the year, *REPUTED* takes the value 1 for that IPO, and zero otherwise.[8] *PROCEEDS* is the natural logarithm of the issue amount (in INR 100,000) and is a proxy for the offer size. We define an offering to be *LARGE* if the issue amount is above the median issue amount for all IPOs in our sample period (2009-2012). Both anchor- and non-anchor backed IPOs involve a pre-announced price band. Following Lowry and Schwert (2004), we use the final offer price relative to the initial pricing range to estimate the extent of information incorporated into the initial price

[8]The results are qualitatively unchanged if we measure *REPUTED* based on the share of the number of IPOs rather than total proceeds.

range. In particular, *TOP_BAND* is a dummy which equals 1 if the retail offer price is at the top of the initial price band, and zero otherwise. *AGE* is the logarithm of the difference between a firm's incorporation year and the year of going public. Measures of issue size and age serve as proxies for information asymmetry. Older and larger firms have more public information available about them than do younger and smaller firms. Finally, *RATING* is the issuing firm's average credit grade. It is coded as missing if the firm did not obtain a rating. However, for the period of our analysis (2009-2012), all firms were required to get at least one rating.

Specifications (1)-(3) are based on the full sample, specifications (4)-(5) on small and large IPO subsamples and specifications (6)-(7) on subsamples of low- and high reputation underwriters (i.e., *REPUTED* as 0, 1, respectively). If anchor investors are effective in lowering underpricing, *ANCHOR_IPO* should have a negative and statistically significant coefficient. However, in all specifications, the coefficient is not different from zero, suggesting that anchor investors do not have a significant effect on underpricing. None of the control variables besides *OVRSUB* is statistically significant. Oversubscription is significant and has a positive coefficient as in Cornelli and Goldreich (2003) or Bubna and Prabhala (2011). In one subsample, which has only IPOs with reputed underwriters, oversubscription is not significant.

We next consider regressions that explain oversubscription as a function of anchor backing. Specification (1) in Table 6 is based on the full sample. We do not find evidence that anchor-backed IPOs are more oversubscribed than non-anchor backed IPOs. We then separately consider oversubscription in the institutional investor (excluding anchor investors) and the retail investor categories separately. We find that anchor-backed IPOs increase oversubscription in the institutional bucket but not in the retail bucket. The results mirror the univariate statistics reported in Table 3. We next consider regressions in subsamples classified by offer size and underwriter reputation. Specifications (4)-(7) consider implications for institutional oversubscription. We find that anchor-backed IPOs have greater institutional oversubscription in small offerings and offerings with less-reputed underwriters. It suggests that anchor investors provide a positive signal to institutional investors in offerings where

there is potentially greatest concerns about issuer quality. However, we continue to find no effect of anchor-backed IPOs on retail oversubscription in most specifications, (8)-(11).

Among other control variables, larger offerings and older firms are associated with higher oversubscription only in the institutional bucket. Older firms have higher institutional oversubscription if they are large and managed by a reputed underwriter, not otherwise. Issues priced at the top of the band have higher oversubscription in both institutional and retail buckets. Overall, institutional investors exhibit greater interest in offerings which have less informational asymmetry but will bid enthusiastically in smaller and younger issues if it is anchor-backed.

Table 7 focuses on volatility of 30-day returns from an IPOs listing date, adjusted for market returns and annualized. In each specification (1)-(3) involving the full sample of IPOs during 2009-2012, anchor-backed IPOs are associated with lower market-adjusted volatility. However, as specifications (4)-(7) based on subsamples show, the result is driven by lower volatility in smaller IPOs and IPOs underwritten by less-reputed lead managers. Among other controls, volatility is lower for larger and better rated IPOs.

Overall, anchor-backed IPOs encourage institutional bidding and lower volatility of post-IPO returns particularly in the more opaque IPOs. However, anchor-backed IPOs do not directly affect pricing in the short-run, measured by underpricing.

5.2 A Counterfactual Estimation Exercise

In the above analysis, underpricing is not statistically different for anchor-backed and non-anchor backed IPOs. It is possible, however, that if the issuing firm had chosen the non-anchor backed IPO mechanism, the underpricing would have been higher in anchor-backed IPOs. A full analysis requires specification and estimation of a structural bidding model. We do not attempt such an exercise in this draft but present basic results from simpler approaches to illustrate the intuition of what we seek.

It is likely that anchors act to influence the IPO process through oversubscription levels. Thus, we first determine what the oversubscription would have been if the issuing firm

had chosen non-anchor backed mechanism. We use the estimated coefficients in the total oversubscription specification (1) in the oversubscription results reported in Table 6. The counterfactual oversubscription for anchor-backed IPOs is the predicted oversubscription where we substitute *ANCHOR IPO* =0 instead of 1. Next, we estimate the determinants of underpricing for the subsample of non-anchor backed IPOs using the full specification (3) of the underpricing regression in Table 5. Based on the estimated coefficients, we determine the counterfactual underpricing using the estimated oversubscription from the first stage. We compare the actual underpricing in anchor-backed IPOs with the estimated underpricing if the anchor-backed IPOs had instead used non-anchor backed IPO mechanism. The left panel in Table 8 presents the results of paired t-test of means and z-test of medians. We find little or no difference between the mean or median actual underpricing and what would be expected with the alternative mechanism.

The above test uses in-sample observations to determine the counterfactual. It is justified on the grounds that an issuing firm would have chosen non-anchor backed mechanism that was available in the same time period. So the difference in underpricing reflects that implications of both discretionary allocation as well as the revelation of anchor identity in anchor-backed IPOs. Using the same methodology as above, we compare underpricing in anchor-backed IPOs with the counterfactual where the issuing firm chooses bookbuilding but without the anchor mechanism. This analytic opportunity is available in the Indian IPO market, where underwriters controlled allocations in a time period before November 2005. In that era, the underwriter's book was not public. Thus, we have two eras: one with allocation powers and no public revelation of the book ("dark" bookbuilding). Another has allocation powers but there is public revelation of the book ("sunshine" bookbuilding). The difference in underpricing thus captures the effect of sunshine bookbuilding versus opaque bookbuilding with secret books. Using 45 book built offerings between 2004 and 2005 with secrecy in books to generate counterfactuals, we find that both the mean and the median actual underpricing is lower than what would be expected with the alternative bookbuilding with discretionary allocation. The difference is significant at the 1% level.

5.3 Long-term Returns

While we see little evidence of anchor-backed IPOs on one-day underpricing, we examine the long-term consequences for returns of anchor-backed IPOs. We define long-term returns as the 1-year underpricing net of the BSE Sensex Index net of 1-day underpricing. In Table 9, we present the regression results. In the full specification (3), we find that anchor IPOs perform no worse in the long-run than non-anchor IPOs, as evidenced by a statistically insignificant coefficient for $ANCHOR\_IPO$ in the long-term return regressions. In subsamples, anchor-backed IPOs have greater long-term underpricing compared to non-anchor backed IPOs if the offering is small, but has no additional effect in larger offerings. Similarly, greater long-term underpricing results in offerings led by a less-reputed underwriter, although the coefficient is significant only at the 10% level This suggests that less reputed underwriters are less likely to obtain full pricing of the IPO compared to the more reputed underwriters, pointing to heterogeneity in the *implementation* of bookbuilding in explaining pricing in the going public process. Thus, anchor-backed IPOs exhibit superior long-term price performance if the offering is small or led by a less-reputed underwriter.

5.4 Identity of Anchor Investors

We next examine the *types* of anchor investors in anchor-backed IPOs. In particular, we analyze the implication of anchor investors for underpricing and oversubscription. Table 10 provides univariate statistics for both initial underpricing as well as long-term returns and oversubscription in the retail, institutional and across all investor categories and reports significant variation in the samples. For instance, small offerings are significantly underpriced compared with large offerings. On the other hand, small offerings have lower long-run underperformance relative to large offerings. These univariate results suggest that there are important differences across anchor-backed IPOs based on offering characteristics. The regression results for drivers of underpricing and oversubscription in anchor-backed IPOs are in Tables 11 and 12, respectively.

Specification (1) in Table 11 reports a baseline model that accounts of anchor identity,

both in terms of anchor family as well as anchor type. In India, an unique feature of anchor-backed IPOs is the availability of anchor investors' names in each offering. We are therefore able to determine the type of investor and the "family" an anchor investor belongs to. For instance, ICICI Lombard General Insurance Co. Ltd. is an insurance company ("type") while ICICI Prudential Mutual Fund is a mutual fund. However, they both are part of the ICICI family. Based on the classification, *TOT_FAMILY* is the number of unique families in an anchor-backed IPO. Knowing the identity is critical to determining this variable. The coefficient is positive and significant in specification (1) and the full specification (4). A large number of families in an IPO raises doubts about the effectiveness of anchor investors in providing information or the intent of having too many anchor investors.

We also classify anchor investors into their "type", including foreign instiutional investors (FII) and domestic mutual funds (MF). To obtain a proxy for the importance of investor type, we calculate *FII_ANCHORS* as the percentage of FII investors in an offering. In addition, SEBI mandates that an anchor-based IPO should offer a third of the allotted anchor shares to domestic mutual funds. FII anchors lower underpricing, in line with claims of superior information with FIIs, relative to other investor types, particularly mutual funds. However, the variables becomes statistically insignificant in the full specification. To consider any additional role of mutual funds, we use *EXCESS_MF* which takes the value of 1 if the number of mutual fund anchors exceeds the mandated amount, and is 0 otherwise. This is not significant in any specification.

Specification (2) adds to the baseline model. It includes alternative quality proxies. *ALLOC_HHI* is the sum of the squared allocation share of each family in an IPO. This variable measures the degree of allocation concentration among anchor families in an IPO. While higher concentration may indicate abuse of allocation discretion with little benefits in the form of better information, it may also be interpreted to be compensation to key information providers. The variable is not significant in any specification. Instead of an aggregate allocation quality in an offering, we also obtain individual anchor family's quality. *TOP FAMILY* is a dummy variable which takes the value 1 if an anchor family is ranked in the top three in the offering year, and zero otheriwse. The ranking is based on the family's share

of the aggregate issue proceeds in a given year. Anchors from top family interact more with issue underwriters and are likely to possess more soft information or provide more fertile grounds for quid pro quo in trading allocations for commissions. Both these variables have statistically insignificant coefficients in all our specifications.

In the next specification (3), we introduce a variable to measure the nexus between the issue underwriter and anchor investor families. *INVESTOR_MNGR* takes a value 1 if an IPO has at least one anchor investor and lead manager from the same family. After identifying the family, concerns about potential conflict of interest may lead to greater underpricing. On the other hand, it would be easier to share information generated at the family level, enabling the setting of an offer price closer to its true value. Our results provide evidence in support of the latter hypothesis, with lower underpricing.

Finally, in the full specification, we add other standard control variables that affect underpricing. As before, oversubscribed offerings have higher underpricing. We also include a proxy for underwriter quality, *REPUTED*, which takes the value 1 if an anchor-backed IPO has at least 1 underwriter in the top five in the offering year based on its share of aggregate yearly proceeds in the IPO market. However, the variable is not statistically significant. Larger offerings have lower underpricing, in line with lower information asymmetry in larger firms and lower underpricing. We also include other proxies for firm quality, such as *AGE* at the time of the IPO and the firm's average credit rating, *RATING*. However, both these variables are statistically insignificant.

Table 12 provides results for oversubscription using the same set of RHS variables as above. Specifications (1)-(4) use oversubscription across all investor categories while specifications (5) and (6) use oversubscription in the institutional (non-anchor) and retail investor categories, respectively. While *TOT_FAMILY* is positive and statistically significant in specification (1), it becomes insignificant when we introduce other control variables or use oversubscription in specific investor categories. Both institutional and retail bidders interpret higher allocation concentration among anchor investors in the first stage with caution, leading to lower demand for the offering. Institutions look upon participation from a top fund family as anchor favorably, but the coefficient is significant only at the 10% level. In-

terestingly, higher credit rating does not attract significantly greater bidder participation. Finally, larger offerings are less attractive across all investor categories.

Overall, we find that there is substantial heterogeneity in the implementation of anchor-backed IPOs. Underpricing in anchor-backed IPOs is lower with fewer unique investor families and when anchor and underwriters are connected. There is greater oversubscription in anchor-backed IPOs with less concentrated allocation and with participation from a top fund family as anchor.

5.5 Flipping By Anchors

When evaluating the role of anchor investors, an important consideration is the duration they hold the stocks for before selling. Is there evidence that anchors are long-term investors or do they flip as soon as they are allowed to by the regulations? We study this issue by looking at the bulk and block deals involving anchor-backed IPOs.

Table 13, Panel A presents descriptive statistics at the IPO level while Panels B and C, discussed later, offer statistics at the anchor and the "parent" or family level, respectively. There were large transactions in each of the 49 anchor-backed IPOs, but a median IPO has no anchor investor transacting in this market. Conditional on an anchor investor transacting (i.e., in 20 anchor-backed IPOs), 18% of the anchor investors from an IPO participate in the market but do not have any sale transactions. To understand whether anchor investors sell their allocated shares, we could instead look at sale transactions net of purchases. Here again, conditional on an anchor investor participating, the median anchor-backed IPO has net purchases rather than net sales, i.e., anchor investors do not appear to be off-loading their allocated shares at least through these large transactions.

It is possible that while transacting anchors are net buyers of shares, they sell a large proportion of the allocated shares in some transactions and buy shares in transactions on other days. This variation is lost when we look at transactions aggregated across dates. In our data, there are 28 unique anchors who transact. The median anchor investor trades within 1 day after the IPO listing though the 75th percentile anchor investor trades almost 1 year after listing. For each anchor investor, we determine the sequence in which the

transactions take place. We find that anchor investors trade infrequently - for any given anchor-backed IPO, almost all the anchors sell shares only once. In the first sell transaction, the median anchor investor sells 229% of her allocation. This could arise either because the investor acquired shares through means beside allocation as an anchor investor, such as further allocation in the second stage of the issue or purchases in the secondary market. While we do not have detailed information about an anchor's other purchases, we do have data on purchases an anchor makes in the large transactions market. Once we take into account both sales and purchases of shares, there are more transactions. We note that the median anchor investor is a net buyer rather than a net seller both in the first and the second transactions.

While sale transactions are few and far between, we check the speed with which an anchor investor undertakes a sale transaction. In particular, we want to see whether an anchor investor flips her allocation at the first available opportunity, which is the later of the listing date and 30 days from allocation in the public issue. We do not have the allocation date. However, given the SEBI-prescribed timeline, the public issue would start the day after the anchor phase of the IPO, and would last a minimum of 3 days. So, the earliest allocation would be 4 days after the first stage, and an additional 30 days before the lock-in period ends. We calculate days between the anchor's first transaction date and the first available date she could have sold her shares ("first opportunity to sell" date). Conditional on an anchor selling shares, a median anchor investor waited 275 days before making a sale. Even with our rough estimate of the first opportunity to sell date, it is clear that a median anchor investor is not waiting to flip her allocated shares. Infact, if we consider sales of shares net of purchases, the waiting extends further, to 298 days. We therefore find little initial evidence of flipping among anchor investors, at least in the large transactions market.

It is possible that allocation to anchor investors in the same "family" is fungible. So we perform the above analysis at the level of the parent firm rather than the anchor investor. Therefore, we include transactions of non-anchor investors if they belong to the same family as the anchor investor. We find similar results. The median parent waits for 9 days from the listing date before trading. Parent firms are net buyers both in the first and the second transactions. As with anchor investors, the median fund family's waiting period for selling

her shares does not support flipping as a motivation for participating as anchor investors.

6 Conclusion

In June 2009, the Securities and Exchange Board of India (SEBI) introduced the concept of an anchor investor into the IPO bookbuilding process. The anchor mechanism permits underwriters to seek bids from and make allocations to anchor investors before the actual IPO opens to (other) institutional and retail investors. Anchors pay the maximum of the anchor price or the final IPO offer price. We study the usage of the anchor investor process and its consequences for the bidding, underpricing, and long-term returns in the IPO process. Anchor investing is a form of bookbuilding, as it gives underwriters power over allocations, which is the most important feature of bookbuilding. Thus, studying anchor investor backed IPOs can shed light on the role of bookbuilding in price discovery in the IPO process.

We report a number of findings on the consequences of the anchor investor process. We find that anchor investors primarily influence short-run IPO underpricing through their effect on bidding. Having anchor investors for an IPO attracts aggressive bidding from other institutions, suggesting that anchors play a certification role. Furthermore, there is lower volatility in returns in anchor-backed IPOs. Somewhat surprisingly, anchors have less effects on retail investor bidding, although the original motivation for having anchors was to partially mitigate the asymmetric information faced by small investors. We also examine the long-term returns of anchor-backed IPOs. We find that anchor-backed IPOs are better performers over the long-term than issues without anchors for time periods of up to 1 year. These benefits accrue in case of more opaque offerings - i.e., smaller IPOs and IPOs led by less-reputed underwriters. Anchors do not appear to be short-term flippers. There is little evidence of ill-effects of anchors and some evidence consistent with beneficial effects of anchor-backed IPOs. This evidence suggests that there are benefits of giving underwriters allocation powers as in bookbuilding.

Among the other results, we find evidence of heterogeneity in anchor effects. Anchor identity, reputation, and whether the anchor is affiliated with the IPO manager running the book are important variables in explaining IPO outcomes. How underwriters distribute

shares across anchor investors also matters. Concentrated allocations appear to deter participation. Whether anchors are affiliated with the underwriting firm is significant, consistent with the certification effect rather than conflicts of interest, a result parallel to findings in the banking literature (Puri, 1996). A simple model of counterfactuals suggests that transparent bookbuilding implicit in anchor issues is better than bookbuilding with secret books, the U.S. approach. These results suggest that *how* bookbuilding is used appears to be at least as important as *whether* bookbuilding is used.

An interesting feature of the anchor investing process implemented in India is that it allows underwriters discretion over allocations but also makes it obligatory for underwriters to disclose the allocation book publicly. This contrasts the practice in the U.S. of giving similar allocation powers but keeping the books secret. The unbundling of allocation powers and secrecy of allocation books represents a potential solution to the ill-effects of bookbuilding. Giving underwriters powers over allocations allows them greater flexibility in pre-issue price discovery while making the allocation books transparent can mitigate the problem of favoritism in IPO allocations. Our study can be viewed as early data from such a regime. We find few causes for concerns with this type of mechanism and support the viewpoint of researchers such as Jagannathan and Sherman (2005) towards reforming bookbuilding in this direction.

REFERENCES

Aggarwal, R., N. R. Prabhala, and M. Puri, 2002, Institutional allocation in initial public offerings: Empirical evidence, Journal of Finance 57, 1421-1442.

Banerjee, S, R.S. Hansen and E. Hrnjic, 2006. IPO underpricing to buy holding. Working paper, http://ssrn.com/abstract=778224.

Benveniste, L. and P. Spindt, 1989, How investment bankers determine the offer price and allocation of new issues, Journal of Financial Economics 24, 343-361.

Biais, Bruno and Anne-Marie Faugeron Crouzet, 2002, IPO Auctions: English, Dutch, French and Internet, Journal of Financial Intermediation 11, 9-36.

Bubna, Amit and Nagpurnanand Prabhala, 2011, IPOs with and without allocation discretion: Empirical Evidence, Journal of Financial Intermediation 20, 530-561.

Chemmanur, Thomas and Huanliang Liu, 2003, How should a firm go public? A dynamic model of the choice between fixed-price offerings and auctions in IPOs and privatizations, Working Paper, Boston College.

Chiang, Yao-Min, David Hirshleifer, Yiming Qian and Ann Sherman, 2011, Learning to fail? Evidence from frequent IPO investors, Review of Financial Studies 24, 1560-1589.

Chiang, Yao-Min, Yiming Qian and Ann Sherman, 2010, Endogenous entry and partial adjustment in IPO auctions: Are institutional investors better informed?, Review of Financial Studies 23, 1200-1230.

Cornelli, Francesca and David Goldreich, 2001, Bookbuilding and strategic allocation, Journal of Finance 56, 2337-2369.

Cornelli, Francesca and David Goldreich, 2003, Bookbuilding: How informative is the order book?, Journal of Finance 58, 1415-1443.

Dasgputa, Sudipto, and Hansen, Robert G., 2007, Auctions in Corporate Finance, Chapter 3 in Handbook of Empirical Corporate Finance, B. Espen Eckbo (Ed.), North Holland.

Derrien, Francois and Kent Womack, 2003, Auctions vs. bookbuilding and the control of underpricing in hot IPO markets, Review of Financial Studies 16, 31-61.

Goyal, Vidhan and Lewis H. K. Tam, 2009, Investor characteristics, relationships, and IPO allocations, HKUST Working Paper.

Hanley, K. and W. Wilhelm, 1995, Evidence on the strategic allocation of initial public offerings, Journal of Financial Economics 37, 239-257.

Hauser, Shmuel, Uzi Yaari, Yael Tanchuma and Harold Baker, 2006, Initial public offering discount and competition, Journal of Law and Economics 49, 331-351.

Jagannathan, Ravi, Andrei Jirnyi, and Ann Sherman, 2009, Why Have IPO Auctions Failed The Market Test?, Northwestern University Working Paper.

Jagannathan, Ravi and Ann Sherman, 2005, Reforming the bookbuilding process for IPOs, Journal of Applied Corporate Finance 17, 67-72.

Liu, Xiaoding and Jay Ritter, 2010, The economic consequences of IPO spinning, Review of Financial Studies 23, 2024-2059.

Ljungqvist, Alexander, 2005, IPO underpricing, Chapter 7 in Handbook of Corporate Finance: Empirical Corporate Finance, B. Espen Eckbo (Ed.), North Holland.

Ljungqvist, A. and William J. Wilhelm, 2002, IPO allocations: discriminatory or discretionary?, Journal of Financial Economics 65, 167-201.

Lowry, Michelle, and G. William Schwert, 2004, Is the IPO pricing process efficient? Journal of Financial Economics 71, 3-26.

Nimalendran, M., Jay Ritter, and Donghang Zhang, 2007, Do today's trades affect tomorrow's IPO allocations?, Journal of Financial Economics 84 (1), 87-109.

Puri, M., 1996, Commercial banks in investment banking: conflicts of interest or certification?, Journal of Financial Economics 40, 373-401.

Ritter, Jay and Ivo Welch, 2002, A review of IPO activity, pricing, and allocations, Journal of Finance 57, 1795-1828.

Securities and Exchange Board of India (SEBI), 2006, Handbook of Statistics on the Indian Securities Market, December.

Sherman, Ann, 2000, IPOs and long-term relationships: an advantage of bookbuilding, Review of Financial Studies 13, 697-714.

Sherman, Ann, 2005, Global trends in IPO methods: bookbuilding versus auctions with endogenous entry, Journal of Financial Economics 78, 615-649.

Sherman, Ann and Sheridan Titman, 2002, Building the IPO order book: underpricing and participation limits with costly information, Journal of Financial Economics 65, 3-29.

Smith, R. and S. Pulliam, 2000, U.S. probes inflated commissions for hot IPOs, Wall Street Journal, December 7, C1.

Spatt, C. and S. Srivastava, 1991, Preplay communication, participation restrictions, and efficiency in initial public offerings, Review of Financial Studies 4, 709-726.

Table 1: Number of IPOs by mechanism and year. The table presents the count of IPOs in India between 2004 and 2012. The mechanisms are (a) fixed price offerings; (b) U.S. style bookbuilding with allocation powers discretion delegated to underwriters, available before November 2005; (c) bookbuilding without allocation discretion, or a dirty Dutch auction, available after November 2005, which we call non-anchor IPOs; and (d) anchor investor backed IPOs, a mechanism that became available after July 2009. In India, mechanisms (b)-(d) are referred to as "bookbuilding" but we will treat them separately.

IPO year	TOTAL	Fixed Price IPOs	Non-anchor IPOs (discretion)	Non-anchor IPOs (no discretion)	Anchor IPOs
2004	23	9	14	-	-
2005	48	15	31	2	-
2006	75	16	-	59	-
2007	101	14	-	87	-
2008	41	6	-	35	-
2009	16	0	-	11	5
2010	66	1	-	35	30
2011	39	2	-	31	6
2012	12	1	-	3	8
Total	421	64	45	263	49
Sample Period: 2009-2012				80	49

Table 2: Descriptive statistics for anchor investors in IPOs. Panels A, B and C provide summary statistics on anchor investors, investors by type such as Foreign Financial Insitution (FII) and Mutual Fund (MF), and investors based on fund family, respectively, in 49 anchor-backed IPOs. The *Average Allocation* in each of the 3 panels is the average of the proportion of total shares allotted in the offering to the investor discussed in the panel (i.e., individual anchor in Panel A, investor by type in Panel B, and investors by fund family in Panel C). The *HHI of Allocation* in each offering is the sum of squared share of allocation to the investors discussed in the panel. In Panel C, each family is given a rank based on her share of total offerings (by count and by $ invested) in the year of the IPO. We report the Average Family Rank in an offering. *Top Family* is a dummy which takes value 1 for IPOs with at least 1 fund family in the top 3 positions, by share of IPO counts and by share of IPO proceeds, and zero otherwise. *Investor-Manager* in an IPO takes the value 1 if a fund family is both an investor and an underwriter in the offering, and zero otherwise. *Investor-Manager Count* is the number of matches of fund family as investor and an underwriter in the offering.

	# Obsv	Mean	Median	Min	Max
Panel A: Individual bidders					
# Anchors	49	10.55	8.00	2	36
Avg Bidder Allocation	49	16.20%	12.50%	2.78%	50.00%
HHI of Bidder Allocation	49	0.23	0.18	0.05	0.64
Panel B: Bidders by Type					
# FIIs	49	5.10	4.00	0.00	20.00
# Mutual Funds	49	5.04	3.00	0.00	19.00
# Banks	49	0.08	0.00	0.00	1.00
% FII anchors	49	54.70%	50.00%	0.00%	100.00%
% MF anchors	49	41.77%	45.00%	0.00%	100.00%
Avg Type Allocation	49	53.91%	50.00%	25.00%	100.00%
HHI of Type Allocation	49	0.63	0.55	0.34	1.00
Panel C: Bidders by Family					
# Unique Fund Families	49	6.86	6.00	2.00	20.00
Avg Family Allocation	49	21.56%	16.67%	5.00%	50.00%
HHI of Family Allocations	49	0.27	0.23	0.07	0.64
Avg Family Rank (by # IPOs)	49	12.10	5.00	1.00	50.00
Avg Family Rank (by $ IPOs)	49	24.20	18.00	1.00	81.00
Top Family (by # IPOs)	49	0.76	1.00	0.00	1.00
Top Family (by $ IPOs)	49	0.61	1.00	0.00	1.00
Investor-Manager	49	0.10	0.00	0.00	1.00
Investor-Manager Count	49	0.31	0.00	0.00	5.00

Table 3: Characteristics of anchor and non-anchor bookbuilt IPOs. The table shows descriptive statistics separately and jointly for anchor-backed and non-anchor backed bookbuilt IPOs between 2009-2012. *Proceeds* is the issue proceeds (in INR million). *Age* is the difference between the firm's IPO year and its incorporation year. *Reputed lead mngr* in an IPO takes value 1 if there is at least 1 lead manager in the top 5 rank by share of total IPO proceeds in the IPO year, and zero otherwise. *Avg IPO grade* is the average of grades the issuing firm obtains across multiple credit rating agencies (larger number is better rating). *Price band* is bandwidth as % of the floor price, separately for retail and anchor investors. *Top (Bottom) band* takes value 1 if the IPO is priced at the top (bottom) of the price band, and zero otherwise. *Anchor loss* takes value 1 if the anchor investors pay a higher price than the retail investors in the offering, and zero otherwise. *Oversubs* is the oversubscription overall, and separately for different investor categories. *Anchor issue* (*QIB issue*) is the anchors' share (non-anchor institutional investors' share) of the total issue. *Volatility* is the annualized standard deviation of market-adjusted returns over 1 month and 1 year from the IPO listing date. The last column reports the significance of the difference in characteristic means for anchor-backed and non-anchor backed IPOs. ***, ** and * denote significance at the 1%, 5% and 10% levels respectively.

	# Obsv	Mean	Median	# Obsv	Mean	Median	# Obsv	Mean	Median	Diff
		Anchor IPOs			Non-anchor IPOs			All IPOs		
Proceeds (INR million)	49	4181.57	4049.99	80	1002.37	726.25	129	1724.46	1282.63	***
Age	49	10.89	12.00	80	12.65	14.00	129	11.95	13.00	
# Leadmanagers	49	3.22	3.00	80	1.71	1.00	129	2.29	2.00	***
Reputed lead mngr	49	0.69	1.00	80	0.20	0.00	129	0.39	0.00	***
Avg IPO grade	48	3.43	3.33	80	2.37	2.00	128	2.77	3.00	***
Price band - Retail (%)	49	8.24%	7.41%	80	10.05%	9.74%	129	9.36%	9.09%	**
Price band - Anchor (%)	49	8.25%	7.41%	0	.	.	49	.	.	.
Top band - Retail	49	0.55	1.00	80	0.78	1.00	129	0.69	1.00	***
Top band - Anchor	49	0.67	1.00	80	.	.	129	.	.	.
Bottom band - Anchor	49	0.18	0.00	80	.	.	129	.	.	.
Anchor loss	49	0.14	0.00	80	.	.	129	.	.	.
Oversubs (overall)	49	7.13	5.38	80	3.73	1.87	129	4.81	2.64	***
Oversubs (retail)	49	2.53	2.05	80	3.74	3.22	129	3.24	2.89	**
Oversubs (qib-non-anchor)	49	8.06	6.14	79	1.88	0.98	128	3.47	1.64	***
Oversubs (anchor bucket)	49	1.52	1.33	0	.	.	49	.	.	.
Anchor issue (%)	49	15.93%	15.00%	0	.	.	49	.	.	.
QIB issue (%)	49	38.79%	40.89%	80	50.62%	50.00%	129	46.13%	49.50%	
Volatility - 1 month (%)	49	43.48%	42.01%	80	84.41%	85.32%	129	68.86%	55.71%	***
Volatility - 1 year (%)	49	39.30%	37.47%	80	54.60%	54.94%	129	48.79%	46.14%	***

Table 4: Underpricing and long-term returns of anchor- and non-anchor backed IPOs. The table shows summary statistics for underpricing for retail and anchor investors, separately and jointly in anchor-backed and non-anchor backed IPOs between 2009-2012. *Day 1 Return* is the difference between the first day closing price and the offer price, as % of offer price, net of the return over this period on the BSE Sensex Index. Returns over other periods are similarly calculated but are net of the first day underpricing. As a result there is no difference in underpricing beyond the first day for different investor categories.

	Anchor IPOs			Bookbuilt IPOs - no discretion			Overall		
	#	Mean	Median	#	Mean	Median	#	Mean	Median
Day 1 Returns									
Retail	49	5.88%	5.01%	80	2.25%	2.76%	129	3.63%	3.95%
Anchor	49	4.00%	3.12%	0	.	.	49	.	.
Long-term Returns									
1 week	49	-0.81%	-1.46%	80	-6.00%	-5.02%	129	-4.03%	-2.24%
1 month	49	-1.42%	-1.11%	80	-23.22%	-13.21%	129	-14.94%	-5.26%
3 months	49	-10.15%	-9.70%	80	-28.44%	-22.58%	129	-21.49%	-12.91%
6 months	45	-6.69%	-9.89%	80	-35.57%	-28.26%	125	-25.17%	-13.59%
1 year	43	-27.44%	-24.72%	79	-50.28%	-50.81%	122	-42.23%	-40.68%

Table 5: Underpricing regression, across mechanisms. The table reports estimates of OLS regression, where the dependent variable is 1-day underpricing net of BSE Sensex Index returns. The observations are at the IPO level. The key variable of interest is *ANCHOR_IPO* which takes value 1 if it is an anchor-backed IPO, and zero for non-anchor backed IPOs between 2009-2012. Specifications (1)-(3) include all IPOs. Specifications (4)-(5) are based on *LARGE=0 (1)* IPOs, respectively, while specifications (6)-(7) are based on IPOs with *REPUTED=0(1)* underwriters, respectively. *LARGE=0 (1)* if the IPO's issue size is below (above) median. *REPUTED=0(1)* if the IPO has no (at least 1) underwriter who is in the top-5 position, ranked by their IPO market share in the IPO year. *OVRSUB* is the natural logarithm of the oversubscription across all investor categories in the IPO. *PROCEEDS* is the natural logarithm of issue proceeds (in INR '00,000). *TOP BAND* takes value 1 if the IPO's retail offer price is at the top of the price band, and zero otherwise. *AGE* is the natural logarithm of the difference between the firm's IPO year and its incorporation year. *RATING* is the firm's average credit grade. t-statistics based on robust standard errors are in parentheses. ***, ** and * denote significance at the 1%, 5% and 10% levels respectively.

	All	All	All	Large=0	Large=1	Reputed=0	Reputed=1
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
ANCHOR IPO	0.000	0.032	-0.002	0.005	0.007	-0.051	0.038
	(0.00)	(0.59)	(-0.04)	(0.04)	(0.15)	(-0.70)	(0.54)
OVRSUB			0.117***	0.129***	0.073***	0.149***	0.049
			(4.36)	(3.37)	(3.55)	(4.83)	(0.83)
REPUTED		-0.064	-0.070	-0.156	-0.017		
		(-0.87)	(-0.98)	(-0.68)	(-0.35)		
PROCEEDS		-0.010	-0.021	0.035	-0.011	-0.042	0.004
		(-0.39)	(-0.81)	(0.27)	(-0.61)	(-0.66)	(0.13)
TOP BAND		0.098*	-0.043	-0.169	0.047	-0.102	0.047
		(1.67)	(-0.57)	(-1.03)	(0.98)	(-0.84)	(0.43)
AGE		0.007	-0.012	-0.016	-0.010	0.006	-0.007
		(0.19)	(-0.32)	(-0.20)	(-0.42)	(0.11)	(-0.23)
RATING		0.033	-0.007	-0.006	0.026	-0.017	0.062
		(1.08)	(-0.24)	(-0.08)	(0.91)	(-0.33)	(1.41)
INTCPT	0.059	-0.005	0.169	-0.197	-0.081	0.336	-0.364
	(1.50)	(-0.02)	(0.59)	(-0.17)	(-0.34)	(0.59)	(-0.87)
# Obsv	129	128	128	65	63	79	49
Adj R-2	-0.008	-0.009	0.085	0.008	0.251	0.071	0.106

Table 6: Oversubscription regression, across mechanisms. The table reports estimates of OLS regression based on our sample of 129 anchor- and non-anchor backed IPOs during 2009-2012. The observations are at the IPO level. The dependent variable is alternative measures of the natural logarithm of oversubscription. Specification (1) ((2), (3)) uses oversubscription across all (institutional, retail) investor categories. Specifications (1)-(3) are based on the full sample of IPOs. In specifications (4)-(7) (specifications (8)-(11)), the dependent variable is institutional (retail) oversubscription, but are each based on subsamples where the issuing firm is *LARGE=0(1)* and *REPUTED=0(1)*, respectively. *LARGE=0 (1)* if the IPO's issue size is below (above) median. *REPUTED=0(1)* if the IPO has no (at least 1) underwriter who is in the top-5 position, ranked by their IPO market share in the IPO year. The key variable of interest is *ANCHOR_IPO* which takes value 1 if it is an anchor-backed IPO, and zero for non-anchor backed IPOs. *PROCEEDS* is the natural logarithm of issue proceeds (in INR '00,000). *TOP BAND* takes value 1 if the IPO's retail offer price is at the top of the price band, and zero otherwise. *AGE* is the natural logarithm of the difference between the firm's IPO year and its incorporation year. *RATING* is the firm's average credit grade. t-statistics based on robust standard errors are in parentheses. ***, ** and * denote significance at the 1%, 5% and 10% levels respectively.

	All	All	All	Large=0	Large=1	Reputed=0	Reputed=1	Large=0	Large=1	Reputed=0	Reputed=1
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Dep. Variable:	Oversub total	Oversub QIB	Oversub Retail	Oversub QIB				Oversub Retail			
ANCHOR IPO	0.288	0.547**	-0.146	1.104***	0.200	1.003***	0.215	0.303	-0.348*	-0.019	-0.288
	(1.36)	(2.43)	(-0.76)	(2.78)	(0.84)	(2.98)	(0.78)	(0.61)	(-1.79)	(-0.05)	(-1.48)
REPUTED	0.055	0.090	-0.011	-0.878**	0.422*			-0.293	0.146		
	(0.26)	(0.39)	(-0.05)	(-2.51)	(1.72)			(-0.90)	(0.63)		
PROCEEDS	0.093	0.272***	-0.206**	0.581**	-0.006	0.289	0.248**	-0.070	-0.303***	-0.132	-0.230***
	(1.07)	(3.05)	(-2.61)	(2.08)	(-0.04)	(1.66)	(2.13)	(-0.27)	(-3.18)	(-0.72)	(-2.76)
TOP BAND	1.212***	1.115***	0.887***	0.245	1.551***	1.026***	1.290***	0.590***	1.019***	1.025***	0.745***
	(9.27)	(7.10)	(7.53)	(0.98)	(7.09)	(4.20)	(5.49)	(3.67)	(5.92)	(5.81)	(4.13)
AGE	0.159	0.171	0.008	-0.206	0.259*	-0.130	0.445***	0.018	-0.070	-0.020	-0.003
	(1.48)	(1.38)	(0.08)	(-1.08)	(1.99)	(-0.67)	(3.04)	(0.12)	(-0.57)	(-0.12)	(-0.02)
RATING	0.347***	0.435***	0.317***	0.460**	0.338**	0.348**	0.410*	0.147	0.458***	0.220	0.432**
	(3.07)	(3.55)	(2.86)	(2.36)	(2.25)	(2.02)	(1.82)	(0.80)	(2.91)	(1.24)	(2.68)
INTCPT	-1.490*	-3.848***	1.996**	-4.921**	-0.899	-3.056**	-3.985**	1.375	2.730**	1.487	2.046*
	(-1.93)	(-4.92)	(2.59)	(-2.14)	(-0.63)	(-2.09)	(-2.62)	(0.64)	(2.49)	(0.92)	(1.99)
# Obsv	128	127	128	64	63	78	49	65	63	79	49
Adj R-2	0.418	0.520	0.308	0.386	0.610	0.439	0.523	0.033	0.449	0.215	0.399

Table 7: Volatility regression, across mechanisms. The table reports estimates of OLS regression, where the dependent variable is the annualized 30-day volatility of market-adjusted returns from the IPO's listing date. The observations are at the IPO level. The key variable of interest is *ANCHOR_IPO* which takes value 1 if it is an anchor-backed IPO, and zero for non-anchor backed IPOs between 2009-2012. Specifications (1)-(3) include all IPOs. Specifications (4)-(5) are based on *LARGE=0 (1)* IPOs, respectively, while specifications (6)-(7) are based on IPOs with *REPUTED=0(1)* underwriters, respectively. *LARGE=0 (1)* if the IPO's issue size is below (above) median. *REPUTED=0(1)* if the IPO has no (at least 1) underwriter who is in the top-5 position, ranked by their IPO market share in the IPO year. *OVRSUB* is the natural logarithm of the oversubscription across all investor categories in the IPO. *PROCEEDS* is the natural logarithm of issue proceeds (in INR '00,000). *TOP BAND* takes value 1 if the IPO's retail offer price is at the top of the price band, and zero otherwise. *AGE* is the natural logarithm of the difference between the firm's IPO year and its incorporation year. *RATING* is the firm's average credit grade. t-statistics based on robust standard errors are in parentheses. ***, ** and * denote significance at the 1%, 5% and 10% levels respectively.

	All	All	All	Large=0	Large=1	Reputed=0	Reputed=1
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
ANCHOR IPO	-0.409***	-0.116**	-0.106**	-0.284**	-0.029	-0.208**	-0.018
	(-7.36)	(-2.15)	(-2.09)	(-2.34)	(-0.41)	(-2.44)	(-0.27)
OVRSUB			-0.034	0.015	-0.050	-0.009	-0.072
			(-1.02)	(0.30)	(-0.85)	(-0.22)	(-1.33)
REPUTED		-0.058	-0.056	0.078	-0.095		
		(-0.91)	(-0.89)	(0.49)	(-1.49)		
PROCEEDS		-0.098***	-0.095***	-0.089	-0.066**	-0.100	-0.075***
		(-3.40)	(-3.28)	(-0.71)	(-2.12)	(-1.25)	(-3.45)
TOP BAND		0.086	0.127	0.147	0.109	0.141	0.128
		(1.43)	(1.52)	(1.00)	(0.79)	(1.01)	(1.23)
AGE		-0.058	-0.053	-0.068	-0.024	-0.070	-0.026
		(-1.42)	(-1.32)	(-0.78)	(-0.67)	(-0.99)	(-0.70)
RATING		-0.102***	-0.090**	-0.101	-0.078*	-0.087	-0.045
		(-2.96)	(-2.29)	(-1.24)	(-1.73)	(-1.24)	(-1.28)
INTCPT	0.844***	2.089***	2.039***	1.969*	1.613***	2.089***	1.557***
	(16.69)	(7.92)	(7.55)	(1.74)	(3.82)	(3.26)	(4.78)
# Obsv	129	128	128	65	63	79	49
Adj R-2	0.220	0.434	0.434	0.064	0.229	0.236	0.268

Table 8: Underpricing counterfactuals. The table presents results of two counterfactual experiments for underpricing. In the first experiment (in the left panel), we estimate the 1-day underpricing if the anchor-backed IPO had instead been a non-anchor backed bookbuilt IPO without allocation discretion. This is based on the sample of bookbuilt IPOs without discretion during our sample period, 2009-2012. In the second experiment (in the right panel), we estimate the 1-day underpricing if the anchor-backed IPO had instead been a non-anchor backed bookbuilt IPO with allocation discretion ("dark" bookbuilding). For this, we use the bookbuilt IPOs during 2004-2005 since this mechanism was discontinued thereafter. In either experiment, we first estimate the counterfactual oversubscription for anchor-backed IPOs, and then use that to esimate the counterfactual 1-day underpricing. We show the mean and median underpricing, actual and counterfactual, and conduct test of means and median equality for paired observations. We report the corresponding t-stat and z-stat, respectively. ***, ** and * denote significance at the 1%, 5% and 10% levels respectively.

	Anchor vs Non-anchor Bookbuilding			Sunshine vs Dark Bookbuilding		
	# Obsv	Mean	Median	# Obsv	Mean	Median
Underpricing	49	0.059	0.050	49	0.059	0.050
Counterfactual underpricing	48	0.025	0.020	49	0.139	0.222
Difference		0.031	0.047*		-0.080***	-0.100***
t-stat / z-stat		1.199	1.733		-3.091	-2.770

Table 9: Long-term returns across mechanisms. The table reports estimates of OLS regression, where the dependent variable is 1-year IPO return net of BSE Sensex Index returns and net of the 1-day underpricing. The observations are at the IPO level. The key variable of interest is *ANCHOR_IPO* which takes value 1 if it is an anchor-backed IPO, and zero for non-anchor backed IPOs between 2009-2012. Specifications (1)-(3) include all IPOs. Specifications (4)-(5) are based on *LARGE=0 (1)* IPOs, respectively, while specifications (6)-(7) are based on IPOs with *REPUTED=0(1)* underwriters, respectively. *LARGE=0 (1)* if the IPO's issue size is below (above) median. *REPUTED=0(1)* if the IPO has no (at least 1) underwriter who is in the top-5 position, ranked by their IPO market share in the IPO year. *OVRSUB* is the natural logarithm of the oversubscription across all investor categories in the IPO. *PROCEEDS* is the natural logarithm of issue proceeds (in INR '00,000). *TOP BAND* takes value 1 if the IPO's retail offer price is at the top of the price band, and zero otherwise. *AGE* is the natural logarithm of the difference between the firm's IPO year and its incorporation year. *RATING* is the firm's average credit grade. t-statistics based on robust standard errors are in parentheses. ***, ** and * denote significance at the 1%, 5% and 10% levels respectively.

	All	All	All	Large=0	Large=1	Reputed=0	Reputed=1
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
ANCHOR IPO	0.225**	0.121	0.105	0.536**	-0.021	0.315*	-0.012
	(2.11)	(1.09)	(0.94)	(2.16)	(-0.17)	(1.72)	(-0.10)
OVRSUB			0.050	-0.028	0.119	-0.038	0.238**
			(0.74)	(-0.24)	(1.06)	(-0.40)	(2.24)
REPUTED		0.104	0.100	-0.002	0.064		
		(0.74)	(0.71)	(-0.01)	(0.45)		
PROCEEDS		-0.113*	-0.118*	-0.329	-0.047	-0.197	-0.091
		(-1.77)	(-1.83)	(-1.28)	(-0.60)	(-1.40)	(-1.23)
TOP BAND		-0.124	-0.186	-0.303	-0.214	-0.243	-0.328*
		(-1.03)	(-1.19)	(-0.89)	(-0.88)	(-0.94)	(-1.72)
AGE		0.134	0.127	0.130	0.104	0.150	0.050
		(1.57)	(1.50)	(0.73)	(1.24)	(0.97)	(0.63)
RATING		0.196**	0.178**	0.247	0.102	0.198	0.154
		(2.45)	(2.07)	(1.52)	(0.99)	(1.50)	(1.22)
INTCPT	-0.499***	-0.194	-0.123	1.751	-0.598	0.639	-0.269
	(-6.31)	(-0.33)	(-0.21)	(0.83)	(-0.69)	(0.58)	(-0.28)
# Obsv	122	122	122	64	58	77	45
Adj R-2	0.021	0.077	0.073	0.036	0.035	0.011	0.196

Table 10: Underpricing and oversubscription in anchor-backed IPOs - Subsamples. The table shows summary statistics for underpricing (1-day and 1-year, net of BSE Sensex Index returns) and oversubscription by investor category. In each panel (A - F), we present summary statistics for various subsamples. *Large* is 1 (0) if the issue size is above (below) the median size of all anchor- and non-anchor backed IPOs during 2009-2012. *Top Band* is 1 if the IPO is priced at the top of the price band, and zero otherwise. *Anchor Loss* is 1 if the anchor investors pay a higher price than the retail investors in the offering, and zero otherwise. *Top Family* is 1 for IPOs with at least 1 fund family in the top 3 positions, by share of IPO proceeds, and zero otherwise. *Investor_Mngr* is 1 for IPOs where a fund family is both an investor and an underwriter in the offering, and zero otherwise. *High HHI* is 1 for IPOs where the concentration of Fund Family Allocation, measured by HHI, is above the median HHI, and zero otherwise.

	# Obsv	Mean	Median	# Obsv	Mean	Median
Panel A:		Large=0			Large=1	
U/PRICING	7	20.07%	11.73%	42	3.52%	3.51%
RET 1 YR	7	-4.25%	-11.62%	36	-31.95%	-31.21%
OVERSUB RETAIL	7	11.26	2.66	42	3.68	1.19
OVERSUB QIB	7	19.37	6.14	42	14.02	6.29
OVERSUB TOTAL	7	22.09	5.38	42	12.29	5.19
Panel B:		Top Band=0			Top Band=1	
U/PRICING	16	-5.60%	-2.83%	33	11.45%	11.73%
RET 1 YR	13	-38.45%	-37.34%	30	-22.67%	-19.87%
OVERSUB RETAIL	16	1.78	0.44	33	6.20	2.86
OVERSUB QIB	16	3.20	2.36	33	20.39	16.35
OVERSUB TOTAL	16	3.11	1.74	33	18.82	15.10
Panel C:		Anchor Loss=0			Anchor Loss=1	
U/PRICING	37	7.80%	6.07%	12	-0.02%	0.33%
RET 1 YR	33	-31.30%	-31.93%	10	-14.72%	-14.02%
OVERSUB RETAIL	37	5.60	2.18	12	2.15	1.41
OVERSUB QIB	37	17.04	10.85	12	7.83	2.39
OVERSUB TOTAL	37	16.17	10.11	12	6.05	2.75
Panel D:		Top Family=0			Top Family=1	
U/PRICING	19	-3.52%	-2.37%	30	11.84%	10.92%
RET 1 YR	15	-8.69%	-2.81%	28	-37.49%	-34.63%
OVERSUB RETAIL	19	2.28	1.16	30	6.33	3.46
OVERSUB QIB	19	5.88	3.85	30	20.42	16.09
OVERSUB TOTAL	19	5.43	2.30	30	18.92	14.87
Panel E:		Investor_Mngr=0			Investor_Mngr=1	
U/PRICING	44	6.17%	5.06%	5	3.38%	3.50%
RET 1 YR	38	-26.25%	-15.96%	5	-36.53%	-41.39%
OVERSUB RETAIL	44	4.89	1.83	5	3.62	3.62
OVERSUB QIB	44	14.35	5.92	5	18.59	20.23
OVERSUB TOTAL	44	13.44	5.07	5	15.91	14.64
Panel F:		HighHHI=0			HighHHI=1	
U/PRICING	25	12.99%	12.17%	24	-1.52%	-1.99%
RET 1 YR	21	-26.82%	-31.93%	22	-28.03%	-14.12%
OVERSUB RETAIL	25	6.10	3.62	24	3.36	1.06
OVERSUB QIB	25	19.52	17.77	24	9.84	2.44
OVERSUB TOTAL	25	18.14	15.76	24	9.05	2.11

Table 11: Anchor identity and underpricing. The table reports estimates of OLS regression, where the dependent variable is 1-day underpricing net of BSE Sensex Index returns. The observations are at the IPO level based only on anchor-backed IPOs. *TOT_FAMILY* is the total number of unique fund families as anchors in the IPO. *FII_ANCHORS* is the proportion of FII anchors in the IPO. *EXCESS_MF* is a dummy that takes value 1 if the proportion of mutual fund anchor investors in an IPO exceeds one-third, and zero otherwise. *ALLOC_HHI* in an IPO is the sum of squared share of allocation to each of the fund families. *TOP FAMILY* is a dummy which takes value 1 for IPOs with at least 1 fund family in the top 3 positions, by share of IPO proceeds, and zero otherwise. *INVESTOR_MNGR* in an IPO takes the value 1 if a fund family is both an investor and an underwriter in the offering, and zero otherwise. *OVRSUB* is the natural logarithm of the oversubscription across all investor categories in the IPO. *REPUTED* takes value 1 if the IPO has at least 1 underwriter who is in the top-5 position, ranked by her IPO market share in the IPO year, and zero otherwise. *PROCEEDS* is the natural logarithm of issue proceeds (in INR '00,000). *AGE* is the natural logarithm of the difference between the firm's IPO year and its incorporation year. *RATING* is the firm's average credit grade. t-statistics based on robust standard errors are in parentheses. ***, ** and * denote significance at the 1%, 5% and 10% levels respectively.

	(1)	(2)	(3)	(4)
TOTAL FAMILY	0.016***	0.008	0.014	0.016**
	(3.13)	(1.16)	(1.60)	(2.42)
FII ANCHORS	-0.192***	-0.174**	-0.208***	-0.095*
	(-2.86)	(-2.48)	(-3.23)	(-1.75)
EXCESS MF	0.016	0.029	0.060	-0.017
	(0.40)	(0.63)	(1.20)	(-0.30)
ALLOC_HHI		-0.284	-0.253	0.096
		(-1.10)	(-1.04)	(0.36)
TOP FAMILY		-0.004	-0.001	0.046
		(-0.07)	(-0.01)	(0.93)
INVESTOR_MNGR			-0.200***	-0.148***
			(-2.92)	(-2.93)
OVRSUB				0.087***
				(4.41)
REPUTED				0.013
				(0.18)
PROCEEDS				-0.063*
				(-1.83)
AGE				0.013
				(0.42)
RATING				-0.004
				(-0.18)
INTCPT	0.044	0.155	0.121	0.440
	(0.68)	(1.07)	(0.88)	(1.02)
# Obsv	49	49	49	48
Adj R-2	0.205	0.186	0.261	0.523

Table 12: Anchor identity and oversubscription. The table reports estimates of OLS regression. The observations are at the IPO level based only on anchor-backed IPOs. The dependent variables is the natural logarithm of oversubscription. We use oversubscription across all investor categories as the dependent variable in specifications (1)-(4), and institutional or QIB (retail) oversubscription in specification (5) (6). *TOT_FAMILY* is the total number of unique fund families as anchors in the IPO. *FII_ANCHORS* is the proportion of FII anchors in the IPO. *EXCESS_MF* is a dummy that takes value 1 if the proportion of mutual fund anchor investors in an IPO exceeds one-third, and zero otherwise. *ALLOC_HHI* in an IPO is the sum of squared share of allocation to each of the fund families. *TOP FAMILY* is a dummy which takes value 1 for IPOs with at least 1 fund family in the top 3 positions, by share of IPO proceeds, and zero otherwise. *INVESTOR_MNGR* in an IPO takes the value 1 if a fund family is both an investor and an underwriter in the offering, and zero otherwise. *OVRSUB* is the natural logarithm of the oversubscription across all investor categories in the IPO. *REPUTED* takes value 1 if the IPO has at least 1 underwriter who is in the top-5 position, ranked by her IPO market share in the IPO year, and zero otherwise. *PROCEEDS* is the natural logarithm of issue proceeds (in INR '00,000). *AGE* is the natural logarithm of the difference between the firm's IPO year and its incorporation year. *RATING* is the firm's average credit grade. t-statistics based on robust standard errors are in parentheses. ***, ** and * denote significance at the 1%, 5% and 10% levels respectively.

	Oversubs-TOTAL				Oversubs - QIB	Oversubs - Retail
	(1)	(2)	(3)	(4)	(5)	(6)
TOTAL FAMILY	0.112***	0.008	0.022	0.030	0.011	0.026
	(2.91)	(0.14)	(0.39)	(0.65)	(0.27)	(0.70)
FII ANCHORS	-0.805	-0.544	-0.625	0.304	0.571	-0.270
	(-1.64)	(-1.04)	(-1.19)	(0.60)	(1.20)	(-0.59)
EXCESS MF	0.005	0.180	0.254	-0.124	-0.061	-0.249
	(0.02)	(0.60)	(0.82)	(-0.35)	(-0.19)	(-0.64)
ALLOC_HHI		-3.926***	-3.854***	-5.164***	-5.700***	-3.019**
		(-2.78)	(-2.70)	(-3.71)	(-4.40)	(-2.27)
TOP FAMILY		-0.014	-0.006	0.396	0.509*	0.016
		(-0.04)	(-0.02)	(1.42)	(1.93)	(0.06)
INVESTOR_MNGR			-0.467	-0.071	0.065	-0.173
			(-0.94)	(-0.20)	(0.21)	(-0.61)
REPUTED				-0.310	-0.307	-0.256
				(-1.23)	(-1.27)	(-0.94)
PROCEEDS				-0.699***	-0.648***	-0.624***
				(-3.39)	(-3.40)	(-3.32)
AGE				-0.351*	-0.299	-0.363**
				(-1.75)	(-1.44)	(-2.42)
RATING				0.225	0.133	0.331*
				(1.21)	(0.80)	(1.74)
INTCPT	1.767***	3.280***	3.199***	10.749***	10.505***	8.811***
	(3.15)	(3.75)	(3.80)	(4.57)	(4.65)	(4.13)
# Obsv	49	49	49	48	48	48
Adj R-2	0.212	0.273	0.270	0.433	0.461	0.323

Table 13: Flipping through bulk and block transactions. The table presents summary statistics for anchor investor transactions in the bulk and block deals market on two stock exchanges, the NSE and the BSE. Panel A presents these statistics at the IPO level, while Panels B and C present statistics at the anchor investor and fund family levels, respectively. Panel A considers anchor participation in trading markets at the IPO level, both in terms of proportion of anchors as well as proportion of shares allocated to anchors. Some measures are limited to IPOs where there is at least one anchor investor who trades. The data include both buy and sale transactions. Sales that are "net of purchases" refers to the sale of shares net of any that may have been purchased. This number could be positive or negative. Positive net sale considers only those transactons where sales exceed buys. Since an investor could trade on multiple days, "first transaction" and "second transaction" refer to sequence of the investor's transactions. We asssume that the earliest date for trading would be 34 days after the close of bidding in the IPO's anchor phase. The later of this date and the actual listing date is the "First possible selling date".

	# Obsv	mean	p25	p50	p75
Panel A: IPO level					
% of IPO's anchors in trading market - all IPOs	49	7.69%	0.00%	0.00%	12.50%
% of IPO's anchors in trading market - IPOs with >= 1 trading anchor	20	18.83%	10.56%	18.33%	22.88%
% of aggregate anchor shares sold - IPOs with >=1 trading anchor	20	17.02%	0.00%	0.00%	38.33%
% of aggregate anchor shares sold, net of purchases - IPOs with >=1 trading anchor	20	-21.24%	-44.29%	-16.03%	18.09%
Panel B: Anchor Investor level					
# days between listing date and trading date (sell or buy)	28	206	0	1	339
% of an anchor's shares sold in first transaction (only sell)	9	346.06%	111.59%	229.19%	388.14%
% of an anchor's shares sold in first transaction (net of purchases)	27	-131.36%	-277.11%	-129.89%	82.73%
% of an anchor's shares sold in second transaction (net of purchases)	1	-463.91%	-463.91%	-463.91%	-463.91%
# days between first possible selling date and actual trading date (only sell)	7	242	107	275	343
# days between first possible selling date and actual trading date (positive net sale)	5	262	143	298	343
Panel C: Family level					
# days between listing date and trading date (sell or buy)	44	219	0	9	344
% of a parent's shares sold in first transaction (only sell)	15	408.38%	89.04%	191.36%	388.14%
% of a parent's shares sold in second transaction (only sell)	3	626.78%	266.61%	470.59%	1143.15%
% of a parent's shares sold in first transaction (net of purchases)	37	-101.69%	-509.47%	-129.88%	133.25%
% of a parent's shares sold in second transaction (net of purchases)	7	88.46%	-463.91%	-100.91%	470.59%
# days between first possible selling date and actual trading date (only sell)	12	351	92	287	514
# days between first possible selling date and actual trading date (positive net sale)	8	311	75	221	398