

### Do Investors Flip Less in Bookbuilding than in Auction IPOs?

Suman Neupane – Griffith University, Australia

Andrew Marshall, Krishna Paudyal, & Chandra Thapa – Strathclyde University, Scotland, UK

Emerging Markets Finance Conference
Mumbai, India
13-17 December 2016



# Agenda

- Motivation
- Contributions
- Context (Institutional setting)
- Hypotheses
- Data
- Results
- Conclusions



### Motivation

Optimal mechanism to manage IPOs

Three mechanisms: Bookbuilding, auctions and fixed priced offerings

 Bookbuilding has become the most dominating mechanism around the world (Jagannathan et al., 2015)



### Motivation

- Bookbuilding vs Auction Discretion in Pricing and Allocation
- Proponents of Bookbuilding: establish relationship, extract information & increase pricing efficiency (Benveniste and Spindt, 1989; Benveniste and Wilhelm, 1990; Sherman, 2000; Bubna and Prabhala, 2011)
- Opponents of Bookbuilding: develop quid-pro quo relationships (Loughran and Ritter, 2004; Nimalendran et al., 2007; Ritter, 2011); CLAS
   Controversies



### Motivation

Flipping – Selling IPO allocation in the first few days of listing

- Flipping important to both issuers (look for long term investors –
   'strong hands') and underwriters (market stabilization)
- Discretionary power do investors flip less in bookbuilding compared to auction IPOs (*Using data on foreign institutional investors*)



### Contributions

- First study, to the best of our knowledge, on the flipping behavior of investors across the two main IPO allocation mechanisms.
  - We contribute to the debate on the efficiency of IPO mechanisms and show that giving underwriters allocation discretion can help reduce flipping by IPO investors
- We also present evidence on the less discussed non-frequent investors participating in IPOs



## The Indian IPO Setting

 Pre – Nov 2005: Modified form of bookbuilding mechanism (discretionary allocation to institutional investors)

 Securities and Exchange Board of India (SEBI) removed the discretion in Nov 2005 – Dirty Dutch Auction (underwriters free to set a price below the market clearing price but required to use prorated allocation)



# Hypotheses

- Bookbuilding underwriters have allocation discretion
- Pitch-book view allocation to long term investors (Cornelli and Goldreich, 2001; Jenkinson and Jones, 2004; Jenkinson and Jones, 2009)
- IPO Process: repeated interaction between underwriters and underwriters helps underwriter
   develop a sustain relation with a network of investors (discourage investors from flipping)
- Underwriters in auction mechanism have no power in penalizing flippers (Degeorge et al., 2010)

**H**<sub>1</sub>: IPO investors flip less in bookbuilding than in auction IPOs.



# Hypotheses

- H<sub>1a</sub>: For IPOs managed by high reputation underwriters, investors flip less under the bookbuilding mechanism in comparison to auction IPOs.
- H<sub>1b</sub>: In IPOs where the demand is weak, investors flip less in bookbuilding than in auction IPOs.
- H<sub>1c</sub>: Frequent investors in bookbuilding IPOs should flip less than frequent investors in auction IPOs.
- **H**<sub>2</sub>: Investors in IPOs retain their allocation for longer periods under bookbuilding in comparison to the auction mechanism.



### Data

- IPOs issued over the Jan 2004 Dec 2006. 45 bookbuilding & 58 Auction IPOs
- Data on foreign institutional investors (FII) National Securities Depository Limited (NSDL)
   Foreign Portfolio Investor Monitor database.
- A total of 3,009 primary trades for our sample of 103 IPOs
- Underwriters: 30 manage the 103 IPOs; 7 high reputation underwriter who are active in both the regimes. [Same high reputation underwriters in both the regime]
- Cold IPOs: Underpricing 10% or less
- Main variable of interest: Mechanism [1 = bookbuilding & 0 = auction]



## Results



**Table 1: Summary Statistics** 

Table 1 reports the summary statistics of the key variables of 103 bookbuilding and auction IPOs listed on the BSE and/or NSE between 2003 and 2006. The statistical significance of the differences in mean (median) is tested using the t-test (Mann-Whitney test). Column 5 (6) provides t-stat and (p-values) (z-test (p-values)) for the difference in mean (median). Appendix A provides definitions for all the variables.

	Total (1)	Bookbuilding (2)	Auction (3)	Diff (2 – 3) (4)	t-stat (p-value) (5)	z-test (p-value) (6)
Panel A: Firm and offer characteristics	3 f	1,	1	1	, ,	
Assets (INR Million)	5,730 (1,800)	6,664 (1,895)	5,005 (1,766)	1,658 (129)	0.732 (0.466)	0.246 (0.806)
Age	15.24 (12.81)	15.82 (12.00)	14.79 (12.87)	1.034 (-0.87)	0.441 (0.660)	-0.532 (0.594)
Proceeds (INR Million)	2,673 (1,080)	3,435 (1,000)	2,083 (1,090)	1,352 (-90)	1.266 (0.208)	-0.150 (0.881)
Shares Offered (Million)	21.56 (8.15)	32.78 (10.00)	12.92 (6.85)	19.86 (3.15)	1.975 (0.051)	2.071 (0.038)
Underwriter Reputation	0.68 (1.00)	0.72 (1.00)	0.66 (1.00)	0.06 (0.00)	0.661 (0.510)	0.663 (0.507)
Total Demand Multiple	23.54 (18.67)	26.31 (22.64)	21.45 (12.42)	4.86 (10.22)	1.148 (0.254)	1.855 (0.063)
Number of Institutional Bids	122 (86)	148 (97)	106 (71)	42 (26)	1.651 (0.102)	1,962 (0.050)
Institutional Demand Multiple	25.77 (18.43)	23.31 (18.76)	27.63 (17.44)	-4.32 (1.32)	-0.787 (0.433)	0.185 (0.854)
Underpricing	0.305 (0.22)	0.34 (0.26)	0.28 (0.15)	0.06 (0.11)	0.662 (0.509)	1.579 (0.114)
Panel B: Allocation & Flipping – FII						
Share allocated as a percent of total institutional quota	0.52 (0.53)	0.50 (0.50)	0.54 (0.54)	-0.04 (-0.04)	-1.319 (0.190)	-1.021 (0.307)
Average size of allocation ('000)	306 (136)	357 (136)	266 (134)	91 (2)	0.925 (0.357)	0.217 (0.624)
Average size of flipping – ('000)	130 (41)	134 (38)	126 (43)	8 (-5)	0.119 (0.902)	0.497 (0.481)
Shares flipped as a percent of allocation	0.43 (0.45)	0.38 (0.40)	0.47 (0.52)	-0.09 (-0.12)	-1.865 (0.065)	-4.276 (0.033)
Observations	103	45	58			



#### **Table 1: Summary Statistics**

Table 1 reports the summary statistics of the key variables of 103 bookbuilding and auction IPOs listed on the BSE and/or NSE between 2003 and 2006. The statistical significance of the differences in mean (median) is tested using the t-test (Mann-Whitney test). Column 5 (6) provides t-stat and (p-values) (z-test (p-values)) for the difference in mean (median). Appendix A provides definitions for all the variables.

	Total (1)	Bookbuilding (2)	Auction (3)	Diff (2-3) (4)	t-stat (p-value) (5)	z-test (p-value) (6)
Panel A: Firm and offer characteristics	(-)	\_/	(-7	\ \frac{1}{2}	(-)	(-)
Assets (INR Million)	5,730 (1,800)	6,664 (1,895)	5,005 (1,766)	1,658 (129)	0.732 (0.466)	0.246 (0.806)
Age	15.24 (12.81)	15.82 (12.00)	14.79 (12.87)	1.034 (-0.87)	0.441 (0.660)	-0.532 (0.594)
Proceeds (INR Million)	2,673 (1,080)	3,435 (1,000)	2,083 (1,090)	1,352 (-90)	1.266 (0.208)	-0.150 (0.881)
Shares Offered (Million)	21.56 (8.15)	32.78 (10.00)	12.92 (6.85)	19.86 (3.15)	1.975 (0.051)	2.071 (0.038)
Underwriter Reputation	0.68 (1.00)	0.72 (1.00)	0.66 (1.00)	0.06 (0.00)	0.661 (0.510)	0.663 (0.507)
Total Demand Multiple	23.54 (18.67)	26.31 (22.64)	21.45 (12.42)	4.86 (10.22)	1.148 (0.254)	1.855 (0.063)
Number of Institutional Bids	122 (86)	148 (97)	106 (71)	42 (26)	1.651 (0.102)	1,962 (0.050)
Institutional Demand Multiple	25.77 (18.43)	23.31 (18.76)	27.63 (17.44)	-4.32 (1.32)	-0.787 (0.433)	0.185 (0.854)
Underpricing	0.305 (0.22)	0.34 (0.26)	0.28 (0.15)	0.06 (0.11)	0.662 (0.509)	1.579 (0.114)
Panel B: Allocation & Flipping – FII						
Share allocated as a percent of total institutional quota	0.52 (0.53)	0.50 (0.50)	0.54 (0.54)	-0.04 (-0.04)	-1.319 (0.190)	-1.021 (0.307)
Average size of allocation ('000)	306 (136)	357 (136)	266 (134)	91 (2)	0.925 (0.357)	0.217 (0.624)
Average size of flipping – ('000)	130 (41)	134 (38)	126 (43)	δ ( <del>-</del> 5)	0.119 (0.902)	0.497 (0.481)
Shares flipped as a percent of allocation	0.43 (0.45)	0.38 (0.40)	0.47 (0.52)	-0.09 (-0.12)	-1.865 (0.065)	-4.276 (0.033)
Observations	103	45	58			



#### **Table 2: Flipping: Univariate Analysis**

Table 2 shows the univariate analysis of flipping in the first three days of listing for 3,009 IPO allocations to FII for a sample of 45 bookbuilding and 58 auction IPOs listed on the BSE and/or NSE between 2004 and 2006. We present statistics for three terciles of allocation based on the percentage of shares allocated to FII. The statistical significance of the differences in mean (median) is tested using the t-test (Mann-Whitney test). Column 5 (6) provides t-stat and (p-values) (z-test (p-values)) for the difference in mean (median). F-stat (p-value) is the test statistic (p-value) of the Anova F-test to test for equality across the three allocation categories.

	Overall (1)	Bookbuilding (2)	Auction (3)	Diff (2 – 3) (4)	t-stat (p-value) (5)	z-test (p-value) (6)
Tercile 1(n=1,003)	, ,	Ì	) f	` ,	Ì	,
Shares allocated as a percent of total FII allocation	0.001 (0.002)	0.002 (0.002)	0.002 (0.002)	0.000 (0.000)	0.894 (0.371)	1.566 (0.212)
Shares flipped as a percent of allocation	0.36 (0.00)	0.33 (0.00)	0.42 (0.00)	-0.09 (0.00)	-2.908 (0.003)	-4.251 (0.018)
Tercile 2(n=1,013)						
Shares allocated as a percent of total FII allocation	0.02 (0.03)	0.02 (0.03)	0.02 (0.03)	0.00 (0.00)	1.432 (0.285)	3.248 (0.068)
Shares flipped as a percent of allocation	0.45 (0.35)	0.32 (0.00)	0.53 (0.61)	-0.21 (-0.61)	-6.948 (0.000)	-36.812 (0.000)
Tercile 3(n=993)						
Shares allocated as a percent of total FII allocation	0.11 (0.06)	0.11 (0.06)	0.10 (0.06)	0.001 (0.002)	0.481 (0.630)	3.236 (0.072)
Shares flipped as a percent of allocation	0.38 (0.17)	0.34 (0.02)	0.42 (0.24)	-0.08 (-0.53)	<b>-</b> 4.690 (0.000)	-8.715 (0.000)
Shares allocated a percent - F-stat (p-value)	665.38 (0.000)	351.21 (0.000)	280.72 (0.000)			
Share flipped a percent - F-stat $(p ext{-value})$	11.68 (0.000)	0.06 (0.943)	11.05 (0.000)			
Observations	3,009	1,403	1,606			

#### Table 3: IPO Investor Flipping: Overall

Table 3 reports the estimates of the OLS regression analysis of IPO investor flipping in the first three days of listing for 3,009 IPO allocations to FII for a sample of 45 bookbuilding and 58 auction IPOs listed on the BSE and/or NSE between 2004 and 2006. The dependent variable in all the specifications is the fraction of shares sold in the first three days of listing. Appendix A provides definitions of all the variables. All tests use White heteroscedasticity robust standard errors. The p-values are in brackets. \*\*\*, \*\* and \* indicate statistically significant at 1%, 5% and 10% respectively.

	Overall	Tercile 1	Tercile 2	Tercile 3	Overall	Tercile 1	Tercile 2	Tercile 3
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Mechanism	-0.071***	0.034	-0.106***	-0.072***	0.065	-0.080	0.048	0.026
	(-3.87)	(0.87)	(-3.07)	(-2.67)	(1.46)	(-0.41)	(0.47)	(0.45)
Institutional demand	0.070***	0.135***	0.112***	-0.000	0.058***	0.140***	0.102***	-0.002
	(6.16)	(4.52)	(5.04)	(-0.01)	(4.87)	(4.47)	(4.45)	(-0.13)
Market condition	0.416*	0.447	0.412	0.734**	0.540**	0.388	0.503	0.744**
	(1.81)	(0.74)	(0.94)	(2.55)	(2.32)	(0.63)	(1.14)	(2.57)
Underwriter reputation	-0.076***	-0.085*	-0.041	-0.005	0.024	-0.196	0.067	0.049
-	(-3.31)	(-1.83)	(-0.82)	(-0.16)	(0.64)	(-1.02)	(0.78)	(1.07)
Proceeds (log)	-0.051***	-0.051***	-0.080***	-0.059***	-0.056***	-0.049***	-0.085***	-0.063***
	(-7.30)	(-3.15)	(-5.57)	(-4.59)	(-7.91)	(-2.95)	(-5.71)	(-4.81)
First day return	-0.044*	-0.358***	-0.088	0.072***	-0.021	-0.364***	-0.077	0.082***
•	(-1.81)	(-4.84)	(-1.62)	(2.61)	(-0.82)	(-4.81)	(-1.48)	(2.88)
Mechanism × Reputation					-0.165***	0.119	-0.177**	-0.132**
•					(-3.40)	(0.59)	(-2.02)	(-2.24)
Industry fixed effects	Yes							
Constant	0.658***	0.500**	0.772***	0.785***	0.638***	0.582**	0.733***	0.780***
	(10.84)	(2.49)	(5.83)	(8.36)	(10.47)	(2.44)	(5.46)	(8.30)
Observations	3,009	1,003	1,013	993	3,009	1,003	1,013	993
Adjusted R <sup>2</sup>	0.052	0.071	0.090	0.042	0.056	0.071	0.092	0.045



#### Table 3: IPO Investor Flipping: Overall

Table 3 reports the estimates of the OLS regression analysis of IPO investor flipping in the first three days of listing for 3,009 IPO allocations to FII for a sample of 45 bookbuilding and 58 auction IPOs listed on the BSE and/or NSE between 2004 and 2006. The dependent variable in all the specifications is the fraction of shares sold in the first three days of listing. Appendix A provides definitions of all the variables. All tests use White heteroscedasticity robust standard errors. The p-values are in brackets. \*\*\*, \*\* and \* indicate statistically significant at 1%, 5% and 10% respectively.

	Overall	Tercile 1	Tercile 2	Tercile 3	Overall	Tercile 1	Tercile 2	Tercile 3
-	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Mechanism	-0.071***	0.034	-0.106***	-0.072***	0.065	-0.080	0.048	0.026
	(-3.87)	(0.87)	(-3.07)	(-2.67)	(1.46)	(-0.41)	(0.47)	(0.45)
Institutional demand	0.070***	0.135***	0.112***	-0.000	0.058***	0.140***	0.102***	-0.002
	(6.16)	(4.52)	(5.04)	(-0.01)	(4.87)	(4.47)	(4.45)	(-0.13)
Market condition	0.416*	0.447	0.412	0.734**	0.540**	0.388	0.503	0.744**
	(1.81)	(0.74)	(0.94)	(2.55)	(2.32)	(0.63)	(1.14)	(2.57)
Underwriter reputation	-0.076***	-0.085*	-0.041	-0.005	0.024	-0.196	0.067	0.049
1	(-3.31)	(-1.83)	(-0.82)	(-0.16)	(0.64)	(-1.02)	(0.78)	(1.07)
Proceeds (log)	-0.051***	-0.051***	-0.080***	-0.059***	-0.056***	-0.049***	-0.085***	-0.063***
( 8)	(-7.30)	(-3.15)	(-5.57)	(-4.59)	(-7.91)	(-2.95)	(-5.71)	(-4.81)
First day return	-0.044*	-0.358***	-0.088	0.072***	-0.021	-0.364***	-0.077	0.082***
, and the second	(-1.81)	(-4.84)	(-1.62)	(2.61)	(-0.82)	(-4.81)	(-1.48)	(2.88)
Mechanism × Reputation					-0.165***	0.119	-0.177**	-0.132**
					(-3.40)	(0.59)	(-2.02)	(-2.24)
Industry fixed effects	Yes							
Constant	0.658***	0.500**	0.772***	0.785***	0.638***	0.582**	0.733***	0.780***
	(10.84)	(2.49)	(5.83)	(8.36)	(10.47)	(2.44)	(5.46)	(8.30)
Observations	3,009	1,003	1,013	993	3,009	1,003	1,013	993
Adjusted R <sup>2</sup>	0.052	0.071	0.090	0.042	0.056	0.071	0.092	0.045



#### Table 3: IPO Investor Flipping: Overall

Table 3 reports the estimates of the OLS regression analysis of IPO investor flipping in the first three days of listing for 3,009 IPO allocations to FII for a sample of 45 bookbuilding and 58 auction IPOs listed on the BSE and/or NSE between 2004 and 2006. The dependent variable in all the specifications is the fraction of shares sold in the first three days of listing. Appendix A provides definitions of all the variables. All tests use White heteroscedasticity robust standard errors. The p-values are in brackets. \*\*\*, \*\* and \* indicate statistically significant at 1%, 5% and 10% respectively.

	Overall	Tercile 1	Tercile 2	Tercile 3	Overall	Tercile 1	Tercile 2	Tercile 3
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Mechanism	-0.071***	0.034	-0.106***	-0.072***	0.065	-0.080	0.048	0.026
	(-3.87)	(0.87)	(-3.07)	(-2.67)	(1.46)	(-0.41)	(0.47)	(0.45)
Institutional demand	0.070***	0.135***	0.112***	-0.000	0.058***	0.140***	0.102***	-0.002
	(6.16)	(4.52)	(5.04)	(-0.01)	(4.87)	(4.47)	(4.45)	(-0.13)
Market condition	0.416*	0.447	0.412	0.734**	0.540**	0.388	0.503	0.744**
	(1.81)	(0.74)	(0.94)	(2.55)	(2.32)	(0.63)	(1.14)	(2.57)
Underwriter reputation	-0.076***	-0.085*	-0.041	-0.005	0.024	-0.196	0.067	0.049
	(-3.31)	(-1.83)	(-0.82)	(-0.16)	(0.64)	(-1.02)	(0.78)	(1.07)
Proceeds (log)	-0.051***	-0.051***	-0.080***	-0.059***	-0.056***	-0.049***	-0.085***	-0.063***
	(-7.30)	(-3.15)	(-5.57)	(-4.59)	(-7.91)	(-2.95)	(-5.71)	(-4.81)
First day return	-0.044*	-0.358***	-0.088	0.072***	-0.021	-0.364***	-0.077	0.082***
	(-1.81)	(-4.84)	(-1.62)	(2.61)	(-0.82)	(-4.81)	(-1.48)	(2.88)
Mechanism × Reputation					-0.165*** (-3.40)	0.119 (0.59)	-0.177** (-2.02)	-0.132** (-2.24)
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.658***	0.500**	0.772***	0.785***	0.638***	0.582**	0.733***	0.780***
	(10.84)	(2.49)	(5.83)	(8.36)	(10.47)	(2.44)	(5.46)	(8.30)
Observations	3,009	1,003	1,013	993	3,009	1,003	1,013	993
Adjusted R <sup>2</sup>	0.052	0.071	0.090	0.042	0.056	0.071	0.092	0.045



#### **Table 4: IPO Investor Flipping: Weak IPOs**

Table 4 reports the estimates of the OLS regression analysis of IPO investor flipping in the first three days of listing only in weak IPOs. We define weak IPOs as those with first day return of 10% or less. The dependent variable in all the specifications is the fraction of shares sold in the first three days of listing. Appendix A provides definitions of all the variables. All tests use White heteroscedasticity robust standard errors. The p-values are in brackets. \*\*\*, \*\* and \* indicate statistically significant at 1%, 5% and 10% respectively.

	Overall (1)	Tercile 1 (2)	Tercile 2 (3)	Tercile 3 (4)	Overall (5)	Tercile 1 (6)	Tercile 2 (7)	Tercile 3 (8)
Mechanism	-0.156***	-0.256**	-0.302***	-0.078*	0.111	-0.412	0.457	0.059
17201111113111	(-4.02)	(-2.18)	(-4.33)	(-1.92)	(0.90)	(-1.06)	(1.24)	(0.47)
Institutional demand	-0.018	-0.052	-0.062	-0.020	-0.030	-0.042	-0.094**	-0.024
	(-0.86)	(-0.75)	(-1.52)	(-0.71)	(-1.37)	(-0.52)	(-2.41)	(-0.84)
Market condition	1.314***	0.921	1.323*	1.550***	1.478***	0.765	1.736**	1.605***
	(4.09)	(0.63)	(1.95)	(4.24)	(4.52)	(0.46)	(2.49)	(4.33)
Underwriter reputation	-0.141**	-0.261	-0.108	-0.145**	-0.036	-0.389	0.223	-0.100
•	(-2.09)	(-1.09)	(-0.49)	(-1.97)	<b>(-</b> 0.43)	(-1.61)	(0.92)	(-1.08)
Proceeds (log)	-0.071***	-0.037	-0.132***	-0.073***	-0.078***	-0.031	-0.150***	-0.077***
	(-3.62)	(-0.46)	(-3.47)	(-2.90)	(-3.92)	(-0.36)	(-3.90)	(-2.99)
First day return	0.320	-0.446	0.701*	0.184	0.400	-0.489	0.853**	0.227
•	(1.31)	(-0.70)	(1.68)	(0.53)	(1.64)	(-0.72)	(2.06)	(0.64)
Mechanism × Reputation					-0.297**	0.170	-0.817**	-0.155*
•					(-2.28)	(0.40)	(-2.17)	(-1.79)
Industry fixed efects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	1.125***	1.191*	1.772***	1.071***	1.108***	1.244*	1.677***	1.067***
	(6.85)	(1.71)	(4.84)	(5.28)	(6.75)	(1.91)	(4.67)	(5.27)
Observations	677	105	223	349	677	105	223	349
Adjusted R <sup>2</sup>	0.083	0.025	0.121	0.106	0.088	0.016	0.143	0.096



#### **Table 4: IPO Investor Flipping: Weak IPOs**

Table 4 reports the estimates of the OLS regression analysis of IPO investor flipping in the first three days of listing only in weak IPOs. We define weak IPOs as those with first day return of 10% or less. The dependent variable in all the specifications is the fraction of shares sold in the first three days of listing. Appendix A provides definitions of all the variables. All tests use White heteroscedasticity robust standard errors. The p-values are in brackets. \*\*\*, \*\* and \* indicate statistically significant at 1%, 5% and 10% respectively.

	Overall (1)	Tercile 1 (2)	Tercile 2	Tercile 3	Overall (5)	Tercile 1 (6)	Tercile 2 (7)	Tercile 3 (8)
Mechanism	-0.156***	-0.256**	-0.302***	-0.078*	0.111	-0.412	0.457	0.059
	(-4.02)	(-2.18)	(-4.33)	(-1.92)	(0.90)	(-1.06)	(1.24)	(0.47)
Institutional demand	-0.018	-0.052	-0.062	-0.020	-0.030	-0.042	-0.094**	-0.024
	(-0.86)	(-0.75)	(-1.52)	(-0.71)	(-1.37)	(-0.52)	(-2.41)	(-0.84)
Market condition	1.314***	0.921	1.323*	1.550***	1.478***	0.765	1.736**	1.605***
	(4.09)	(0.63)	(1.95)	(4.24)	(4.52)	(0.46)	(2.49)	(4.33)
Underwriter reputation	-0.141**	-0.261	-0.108	-0.145**	-0.036	-0.389	0.223	-0.100
	(-2.09)	(-1.09)	(-0.49)	(-1.97)	(-0.43)	(-1.61)	(0.92)	(-1.08)
Proceeds (log)	-0.071***	-0.037	-0.132***	-0.073***	-0.078***	-0.031	-0.150***	-0.077***
	(-3.62)	(-0.46)	(-3.47)	(-2.90)	(-3.92)	(-0.36)	(-3.90)	(-2.99)
First day return	0.320	-0.446	0.701*	0.184	0.400	-0.489	0.853**	0.227
	(1.31)	(-0.70)	(1.68)	(0.53)	(1.64)	(-0.72)	(2.06)	(0.64)
Mechanism × Reputation					-0.297** (-2.28)	0.170 (0.40)	-0.817** (-2.17)	-0.155* (-1.79)
Industry fixed efects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	1.125***	1.191*	1.772***	1.071***	1.108***	1.244*	1.677***	1.067***
	(6.85)	(1.71)	(4.84)	(5.28)	(6.75)	(1.91)	(4.67)	(5.27)
Observations	677	105	223	349	677	105	223	349
Adjusted $R^2$	0.083	0.025	0.121	0.106	0.088	0.016	0.143	0.096





#### Table 5: Frequent and non-frequent investors: Univariate analysis

Table 5 reports the univariate statistics of flipping in the first three days of listing by frequent and non-frequent IPO investors. Panel A shows statistics of bidding by fund families in the 45 bookbuilding and 58 auction IPOs. Panel B compares flipping by frequent and non-frequent investors between bookbuilding and auction IPO investors while Panel C shows flipping by frequent and non-frequent investors in bookbuilding and auction IPOs for the three allocation terciles. The allocation terciles are based on the percentage of shares allocated to FII. The statistical significance of the differences in mean (median) is tested using the t-test (Mann-Whitney test).

Panel A: Fund family participation in IPOs

		Total	Bookbuilding	Auction
# of fund families bidding in:				
	1-2 IPOs	187	154	132
	3-9 IPOs	162	106	48
	10 or more IPOs	49	44	49
	Total	398	304	243
# of IPO bids by fund families				
-	25th Percentile	5	4	4
	Mean	25	12	17
	Median	14	9	15
	75 <sup>th</sup> Percentile	38	18	28



#### Table 5: Frequent and non-frequent investors: Univariate analysis

Table 5 reports the univariate statistics of flipping in the first three days of listing by frequent and non-frequent IPO investors. Panel A shows statistics of bidding by fund families in the 45 bookbuilding and 58 auction IPOs. Panel B compares flipping by frequent and non-frequent investors between bookbuilding and auction IPO investors while Panel C shows flipping by frequent and non-frequent investors in bookbuilding and auction IPOs for the three allocation terciles. The allocation terciles are based on the percentage of shares allocated to FII. The statistical significance of the differences in mean (median) is tested using the t-test (Mann-Whitney test).

Panel A: Fund family participation in IPOs

		Total	Bookbuilding	Auction
# of fund families bidding in:				
	1-2 IPOs	187	154	132
	3-9 IPOs	162	106	48
	10 or more IPOs	49	44	49
	Total	398	304	243
# of IPO bids by fund families				
	25th Percentile	5	4	4
	Mean	25	12	17
	Median	14	9	15
	75 <sup>th</sup> Percentile	38	18	28



#### Table 5: Frequent and non-frequent investors: OLS regression analysis

Table 5 reports the estimates of the OLS regression analysis of flipping in the first three days of listing for 3,009 IPO allocations to FII for a sample of 45 bookbuilding and 58 auction IPOs listed on the BSE and/or NSE between 2004 and 2006. The dependent variable in all the specifications is the fraction of shares sold in the first three days of listing. Appendix A provides definitions of all the variables. All tests use White heteroscedasticity robust standard errors. The p-values are in brackets. \*\*\*, \*\* and \* indicate statistically significant at 1%, 5% and 10% respectively.

Panel B: By mechanism and investors

	Overall (1)	Frequent Investors (2)	Non-Frequent Investors (3)	Diff 2-3) (4)	t-stat (p-value) (5)	z-test (p-value) (6)
Shares flipped as a percent of allocation – Overall	0.40 (0.05)	0.48 (0.48)	0.31 (0.00)	0.17 (0.48)	10.456 (0.000)	111.54 (0.000)
Shares flipped as a percent of allocation – Bookbuilding	0.33 (0.00)	0.43 (0.27)	0.24 (0.00)	0.19 (0.27)	6.897 (0.000)	54.08 (0.000)
Shares flipped as a percent of allocation - Auction	0.46 (0.36)	0.51 (0.52)	0.40 (0.00)	0.11 (0.55)	5.216 (0.000)	26.31 (0.000)
Diff (Bookbuilding - Auction)	-0.13 (-0.36)	-0.08 (-0.25)	-0.16 (0.00)			
t-stat (p-value)	-8.144 (0.000)	-3.422 (0.000)	-5.675 (0.000)			
z-test (p-value)	53.64 (0.000)	9.886 (0.001)	18.583 (0.000)			
Observations	3,009	1,649	1,360			

Panel C: By mechanism, investors and allocation terciles

		Fr	equent Investors		Non-Frequent Investors				
	Bookbuilding (1)	Auction (2)	Diff (1-2) (3)	p-values (4)	Bookbuilding (5)	Auction (6)	Diff (5-6) (7)	p-values (8)	
Shares flipped as a percent of	of allocation								
Tercile 1	0.51 (0.50)	0.57 (0.94)	-0.06 (-0.44)	0.295 (0.322)	0.26 (0.00)	0.37 (0.00)	-0.11 (0.00)	0.001 (0.009)	
Tercile 2	0.45 (0.34)	0.57 (0.68)	-0.12 (-0.34)	0.004 (0.005)	0.21 (0.00)	0.46 (0.28)	-0.25 (-0.28)	0.000 (0.000)	
Tercile 3	0.38 (0.16)	0.45 (0.33)	-0.07 (-0.17)	0.006 (0.002)	0.19 (0.00)	0.25 (0.00)	-0.06 (0.00)	0.245 (0.022)	
Observations	661	988			742	618			



#### Table 5: Frequent and non-frequent investors: OLS regression analysis

Table 5 reports the estimates of the OLS regression analysis of flipping in the first three days of listing for 3,009 IPO allocations to FII for a sample of 45 bookbuilding and 58 auction IPOs listed on the BSE and/or NSE between 2004 and 2006. The dependent variable in all the specifications is the fraction of shares sold in the first three days of listing. Appendix A provides definitions of all the variables. All tests use White heteroscedasticity robust standard errors. The p-values are in brackets. \*\*\*, \*\* and \* indicate statistically significant at 1%, 5% and 10% respectively.

Panel B: By mechanism and investors

	Overall (1)	Frequent Investors (2)	Non-Frequent Investors (3)	Diff 2-3) (4)	t-stat (p-value) (5)	z-test (p-value) (6)
Shares flipped as a percent of allocation – Overall	0.40 (0.05)	0.48 (0.48)	0.31 (0.00)	0.17 (0.48)	10.456 (0.000)	111.54 (0.000)
Shares flipped as a percent of allocation – Bookbuilding	0.33 (0.00)	0.43 (0.27)	0.24 (0.00)	0.19 (0.27)	6.897 (0.000)	54.08 (0.000)
Shares flipped as a percent of allocation - Auction	0.46 (0.36)	0.51 (0.52)	0.40 (0.00)	0.11 (0.55)	5.216 (0.000)	26.31 (0.000)
Diff (Bookbuilding - Auction)	-0.13 (-0.36)	-0.08 (-0.25)	-0.16 (0.00)			
t-stat (p-value)	-8.144 (0.000)	-3.422 (0.000)	-5 675 (0.000)			
z-test (p-value)	53.64 (0.000)	9.886 (0.001)	18.583 (0.000)			
Observations	3,009	1,649	1,360			

Panel C: By mechanism, investors and allocation terciles

		Fr	equent Investors		Non-Frequent Investors					
	Bookbuilding (1)	Auction (2)	Diff (1-2) (3)	p-values (4)	Bookbuilding (5)	Auction (6)	Diff (5-6) (7)	p-values (8)		
Shares flipped as a perce	ent of allocation									
Tercile 1	0.51 (0.50)	0.57 (0.94)	-0.06 (-0.44)	0.295 (0.322)	0.26 (0.00)	0.37 (0.00)	-0.11 (0.00)	0.001 (0.009)		
Tercile 2	0.45 (0.34)	0.57 (0.68)	-0.12 (-0.34)	0.004 (0.005)	0.21 (0.00)	0.46 (0.28)	-0.25 (-0.28)	0.000 (0.000)		
Tercile 3	0.38 (0.16)	0.45 (0.33)	-0.07 (-0.17)	0.006 (0.002)	0.19 (0.00)	0.25 (0.00)	-0.06 (0.00)	0.245 (0.022)		
Observations	661	988			742	618				



Table 6: Frequent and non-frequent investors: OLS regression analysis

Table 6 reports the estimates of the OLS regression analysis of flipping in the first three days of listing for 3,009 IPO allocations to FII for a sample of 45 bookbuilding and 58 auction IPOs listed on the BSE and/or NSE between 2004 and 2006. The dependent variable in all the specifications is the fraction of shares sold in the first three days of listing. Appendix A provides definitions of all the variables. All tests use White heteroscedasticity robust standard errors. The p-values are in brackets. \*\*\*, \*\* and \* indicate statistically significant at 1%, 5% and 10% respectively.

			Frequen	t Investors			Non-Frequent Investors					
	Overall	Tercile 2	Tercile 3	Overall	Tercile 2	Tercile 3	Overall	Tercile 2	Tercile 3	Overall	Tercile 2	Tercile 3
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Mechanism	-0.055**	-0.058*	-0.062**	0.050	0.122	0.055	-0.072**	-0.136**	-0.061	0.039	-0.098	-0.038
	<b>(-2.40)</b>	(-1.78)	(-2.03)	(0.96)	(1.01)	(0.86)	(-2.30)	(-2.54)	(-1.12)	(0.33)	( <b>-</b> 0.44)	(-0.24)
Institutional demand	0.051***	0.108***	0.008	0.044***	0.097***	0.006	0.097***	0.086**	-0.052	0.090***	0.085**	-0.052
	(3.47)	(3.59)	(0.43)	(2.91)	(3.14)	(0.29)	(4.56)	(2.50)	(-1.24)	(4.06)	(2.42)	(-1.23)
Market condition	0.503*	0.314	0.743**	0.549**	0.413	0.729**	0.633	0.661	0.866	0.720	0.673	0.883
	(1.87)	(0.61)	(2.30)	(2.03)	(0.79)	(2.24)	(1.45)	(0.90)	(1.45)	(1.62)	(0.91)	(1.42)
Underwriter reputation	-0.012	-0.052	-0.007	0.050	0.060	0.052	-0.160***	-0.055	-0.047	-0.060	-0.022	-0.031
•	(-0.40)	(-0.79)	(-0.16)	(1.21)	(0.63)	(1.06)	(-4.04)	(-0.71)	(-0.66)	(-0.53)	(-0.10)	(-0.21)
Proceeds (log)	-0.015	-0.034	-0.040**	-0.018	-0.040*	-0.042***	-0.034***	-0.084***	-0.051*	-0.037***	-0.084***	-0.053*
	(-1.37)	(-1.54)	(-2.52)	(-1.61)	(-1.77)	(-2.65)	(-2.82)	(-3.76)	(-1.94)	(-3.03)	(-3.73)	(-1.88)
First day return	0.029	-0.110	0.067**	0.042	-0.102	0.076**	-0.113**	0.003	0.149**	-0.099*	0.004	0.152**
·	(1.07)	(-1.58)	(2.20)	(1.48)	(-1.47)	(2.47)	(-2.09)	(0.04)	(2.45)	(-1.77)	(0.06)	(2.26)
Mechanism × Reputation				-0.135**	-0.216*	-0.159**				-0.121	-0.041	-0.029
•				(-2.28)	(-1.95)	(-2.18)				(-0.99)	(-0.18)	(-0.16)
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.411***	0.477***	0.648***	0.399***	0.457***	0.629***	0.430***	0.804***	0.748***	0.380**	0.781***	0.751***
	(5.06)	(2.76)	(5.78)	(4.91)	(2.65)	(5.61)	(3.17)	(3.50)	(3.32)	(2.57)	(2.89)	(3.35)
Observations	1649	580	819	1649	580	819	1360	453	144	1360	453	144
Adjusted R <sup>2</sup>	0.032	0.042	0.044	0.048	0.045	0.050	0.070	0.117	0.060	0.070	0.115	0.055



Table 6: Frequent and non-frequent investors: OLS regression analysis

Table 6 reports the estimates of the OLS regression analysis of flipping in the first three days of listing for 3,009 IPO allocations to FII for a sample of 45 bookbuilding and 58 auction IPOs listed on the BSE and/or NSE between 2004 and 2006. The dependent variable in all the specifications is the fraction of shares sold in the first three days of listing. Appendix A provides definitions of all the variables. All tests use White heteroscedasticity robust standard errors. The p-values are in brackets. \*\*\*, \*\* and \* indicate statistically significant at 1%, 5% and 10% respectively.

			Frequen	t Investors				Non-Frequent Investors						
	Overall	Tercile 2	Tercile 3	Overall	Tercile 2	Tercile 3	Overall	Tercile 2	Tercile 3	Overall	Tercile 2	Tercile 3		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)		
Mechanism	-0.055**	-0.058*	-0.062**	0.050	0.122	0.055	-0.072**	-0.136**	-0.061	0.039	-0.098	-0.038		
	(-2.40)	(-1.78)	(-2.03)	(0.96)	(1.01)	(0.86)	(-2.30)	(-2.54)	(-1.12)	(0.33)	(-0.44)	(-0.24)		
Institutional demand	0.051***	0.108***	0.008	0.044***	0.097***	0.006	0.097***	0.086**	-0.052	0.090***	0.085**	-0.052		
	(3.47)	(3.59)	(0.43)	(2.91)	(3.14)	(0.29)	(4.56)	(2.50)	(-1.24)	(4.06)	(2.42)	(-1.23)		
Market condition	0.503*	0.314	0.743**	0.549**	0.413	0.729**	0.633	0.661	0.866	0.720	0.673	0.883		
	(1.87)	(0.61)	(2.30)	(2.03)	(0.79)	(2.24)	(1.45)	(0.90)	(1.45)	(1.62)	(0.91)	(1.42)		
Underwriter reputation	-0.012	-0.052	-0.007	0.050	0.060	0.052	-0.160***	-0.055	-0.047	<b>-</b> 0.060	-0.022	-0.031		
•	(-0.40)	(-0.79)	(-0.16)	(1.21)	(0.63)	(1.06)	(-4.04)	(-0.71)	(-0.66)	(-0.53)	(-0.10)	(-0.21)		
Proceeds (log)	-0.015	-0.034	-0.040**	-0.018	-0.040*	-0.042***	-0.034***	-0.084***	-0.051*	-0.037***	-0.084***	-0.053*		
( C)	(-1.37)	(-1.54)	(-2.52)	(-1.61)	(-1.77)	(-2.65)	(-2.82)	(-3.76)	(-1.94)	(-3.03)	(-3.73)	(-1.88)		
First day return	0.029	-0.110	0.067**	0.042	-0.102	0.076**	-0.113**	0.003	0.149**	-0.099*	0.004	0.152**		
•	(1.07)	(-1.58)	(2.20)	(1.48)	(-1.47)	(2.47)	(-2.09)	(0.04)	(2.45)	(-1.77)	(0.06)	(2.26)		
Mechanism × Reputation			Г	-0.135**	-0.216*	-0.159**	7			-0.121	-0.041	-0.029		
1			L	(-2.28)	(-1.95)	(-2.18)	┙			(-0.99)	(-0.18)	(-0.16)		
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Constant	0.411***	0.477***	0.648***	0.399***	0.457***	0.629***	0.430***	0.804***	0.748***	0.380**	0.781***	0.751***		
	(5.06)	(2.76)	(5.78)	(4.91)	(2.65)	(5.61)	(3.17)	(3.50)	(3.32)	(2.57)	(2.89)	(3.35)		
Observations	1649	580	819	1649	580	819	1360	453	144	1360	453	144		
Adjusted R <sup>2</sup>	0.032	0.042	0.044	0.048	0.045	0.050	0.070	0.117	0.060	0.070	0.115	0.055		



#### Table 7: IPO Investor Flipping: Probit regression analysis

Table 7 reports the estimates of the probit regression analysis of flipping in the first three days of listing for 3,009 IPO allocations to FII for a sample of 45 bookbuilding and 58 auction IPOs listed on the BSE and/or NSE between 2004 and 2006. The dependent variable in all the specifications takes the value of 1 if investors hold their entire allocation at the end of the first three days of listing and 0 otherwise. Appendix A provides definitions of all the variables. All tests use White heteroscedasticity robust standard errors. The p-values are in brackets.

\*\*\*, \*\* and \* indicate statistically significant at 1%, 5% and 10% respectively.

			Overall			Frequent	t Investors	Non-Frequent Investors	
	Overall	Tercile 2	Tercile 3	Tercile 2	Tercile 3	Tercile 2	Tercile 3	Tercile 2	Tercile 3
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Mechanism	0.208***	0.340***	0.179**	-0.168	-0.149	-0.345	-0.296	0.440***	0.250
	(3.98)	(3.45)	(2.12)	(-0.62)	(-0.88)	(-1.03)	(-1.55)	(2.78)	(1.18)
Institutional demand	-0.182***	-0.357***	-0.069	-0.325***	-0.062	-0.444***	-0.064	-0.152	-0.084
	(-5.36)	(-5.13)	(-1.22)	(-4.57)	(-1.10)	(-4.51)	(-1.04)	(-1.42)	(-0.51)
Market condition	-1.029	0.068	-2.553***	-0.246	-2.579***	1.182	-2.775***	-2.578	-2.239
	(-1.56)	(0.05)	(-2.66)	(-0.19)	(-2.69)	(0.74)	(-2.60)	(-1.18)	(-0.87)
Underwriter reputation	0.122*	0.076	-0.129	-0.283	-0.314**	-0.265	-0.315**	0.152	-0.037
	(1.89)	(0.53)	(-1.23)	(-1.26)	(-2.36)	(-1.04)	(-2.18)	(0.63)	(-0.14)
Proceeds (log)	0.127***	0.143***	-0.023	0.158***	-0.010	0.050	-0.116**	0.086	-0.038
	(5.94)	(3.09)	(-0.51)	(3.32)	(-0.21)	(0.72)	(-2.05)	(1.18)	(-0.38)
First day return	0.206***	0.392**	-0.225**	0.355**	-0.257***	0.542**	-0.272***	-0.033	-0.346
•	(3.02)	(2.49)	(-2.56)	(2.25)	(-2.89)	(2.47)	(-2.81)	(-0.14)	(-1.52)
Mechanism × Reputation				0.584**	0.446**	0.695*	0.560**		
•				(2.02)	(2.25)	(1.90)	(2.52)		
Industry fixed effects	Yes	Yes	Yes						
Constant	0.606**	0.576	1.098***	0.644***	0.635	0.398	-0.090	0.038	1.114
	(2.49)	(1.11)	(2.87)	(2.66)	(1.23)	(0.98)	(-0.13)	(0.05)	(1.34)
Observations	3,009	1,013	993	1,013	993	580	819	453	144
Pseudo R <sup>2</sup>	0.032	0.063	0.022	0.066	0.026	0.063	0.035	0.056	0.031



#### Table 7: IPO Investor Flipping: Probit regression analysis

Table 7 reports the estimates of the probit regression analysis of flipping in the first three days of listing for 3,009 IPO allocations to FII for a sample of 45 bookbuilding and 58 auction IPOs listed on the BSE and/or NSE between 2004 and 2006. The dependent variable in all the specifications takes the value of 1 if investors hold their entire allocation at the end of the first three days of listing and 0 otherwise. Appendix A provides definitions of all the variables. All tests use White heteroscedasticity robust standard errors. The p-values are in brackets.

\*\*\*, \*\* and \* indicate statistically significant at 1%, 5% and 10% respectively.

			Overall			Frequen	t Investors	Non-Frequent Investors		
	Overall (1)	Tercile 2 (2)	Tercile 3 (3)	Tercile 2 (4)	Tercile 3 (5)	Tercile 2 (6)	Tercile 3 (7)	Tercile 2 (8)	Tercile 3 (9)	
Mechanism	0.208***	0.340***	0.179**	-0.168	-0.149	-0.345	-0.296	0.440***	0.250	
	(3.98)	(3.45)	(2.12)	(-0.62)	(-0.88)	(-1.03)	(-1.55)	(2.78)	(1.18)	
Institutional demand	-0.182***	-0.357***	-0.069	-0.325***	-0.062	-0.444***	-0.064	-0.152	-0.084	
	(-5.36)	(-5.13)	(-1.22)	(-4.57)	(-1.10)	(-4.51)	(-1.04)	(-1.42)	(-0.51)	
Market condition	-1.029	0.068	-2.553***	-0.246	-2.579***	1.182	-2.775***	-2.578	-2.239	
	(-1.56)	(0.05)	(-2.66)	(-0.19)	(-2.69)	(0.74)	(-2.60)	(-1.18)	(-0.87)	
Underwriter reputation	0.122*	0.076	-0.129	-0.283	-0.314**	-0.265	-0.315**	0.152	-0.037	
	(1.89)	(0.53)	(-1.23)	(-1.26)	(-2.36)	(-1.04)	(-2.18)	(0.63)	(-0.14)	
Proceeds (log)	0.127***	0.143***	-0.023	0.158***	-0.010	0.050	-0.116**	0.086	-0.038	
	(5.94)	(3.09)	(-0.51)	(3.32)	(-0.21)	(0.72)	(-2.05)	(1.18)	(-0.38)	
First day return	0.206***	0.392**	-0.225**	0.355**	-0.257***	0.542**	-0.272***	-0.033	-0.346	
	(3.02)	(2.49)	(-2.56)	(2.25)	(-2.89)	(2.47)	(-2.81)	(-0.14)	(-1.52)	
Mechanism × Reputation				0.584** (2.02)	0.446** (2.25)	0.695* (1.90)	0.560** (2.52)			
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Constant	0.606**	0.576	1.098***	0.644***	0.635	0.398	-0.090	0.038	1.114	
	(2.49)	(1.11)	(2.87)	(2.66)	(1.23)	(0.98)	(-0.13)	(0.05)	(1.34)	
Observations	3,009	1,013	993	1,013	993	580	819	453	144	
Pseudo R <sup>2</sup>	0.032	0.063	0.022	0.066	0.026	0.063	0.035	0.056	0.031	



Table 9: Long-term holdings: OLS regression analysis

Table 9 reports the estimates of the OLS regression analysis of the fraction of shares sold in the first six months of listing for 3,009 IPO allocations to FII for a sample of 45 bookbuilding and 58 auction IPOs listed on the BSE and/or NSE between 2004 and 2006. The dependent variable in all the specifications is the fraction of shares sold in the first six months of listing. Appendix A provides definitions of all the variables. All tests use White heteroscedasticity robust standard errors. The p-values are in brackets. \*\*\*, \*\* and \* indicate statistically significant at 1%, 5% and 10% respectively.

			Overall			Frequen	t Investors	Non-Freque	ent Investors
	Overall	Tercile 2	Tercile 3	Tercile 2	Tercile 3	Tercile 2	Tercile 3	Tercile 2	Tercile 3
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Mechanism	0.004	-0.096***	-0.019	0.060	0.038	0.188	0.063	-0.174***	0.008
	(0.17)	(-2.68)	(-1.28)	(0.59)	(0.65)	(1.61)	(0.97)	(-2.95)	(0.12)
Institutional demand	0.104***	0.116***	0.022	0.107***	0.021	0.091***	0.033*	0.092***	-0.053
	(7.98)	(5.26)	(1.28)	(4.73)	(1.22)	(2.93)	(1.68)	(2.80)	(-1.40)
Stock return	0.019	0.042**	-0.079***	0.043**	-0.076***	0.010	-0.078***	0.101***	-0.071*
	(1.29)	(2.17)	(-4.76)	(2.28)	(-4.58)	(0.41)	(-4.18)	(3.09)	(-1.91)
Underwriter reputation	-0.088***	-0.074	-0.017	0.036	0.015	0.069	0.027	-0.129	-0.099
-	(-3.29)	(-1.39)	(-0.49)	(0.41)	(0.32)	(0.71)	(0.56)	(-1.57)	(-1.16)
Proceeds (log)	-0.050***	-0.085***	-0.067***	-0.089***	-0.069***	-0.044*	-0.051***	-0.082***	-0.071**
	(-6.14)	(-5.68)	(-4.80)	(-5.84)	(-4.91)	(-1.91)	(-3.03)	(-3.57)	(-2.41)
First day return	-0.008	0.001	0.037	0.013	0.042	0.007	0.026	0.096	0.187***
	(-0.33)	(0.01)	(1.37)	(0.23)	(1.54)	(0.08)	(0.86)	(1.20)	(3.88)
Mechanism × Reputation				-0.182**	-0.079	-0.264**	-0.109		
_				(-2.06)	(-1.16)	(-2.06)	(-1.46)		
Industry fixed effects	Yes	Yes	Yes						
Constant	0.609***	0.876***	0.883***	0.837***	0.882***	0.543***	0.730***	0.910***	1.055***
	(7.56)	(6.42)	(8.90)	(6.03)	(8.87)	(3.02)	(6.26)	(3.93)	(4.36)
Observations	3,009	1,013	993	1,013	993	580	819	453	144
Pseudo R <sup>2</sup>	0.031	0.091	0.056	0.094	0.057	0.034	0.041	0.135	0.114



Table 9: Long-term holdings: OLS regression analysis

Table 9 reports the estimates of the OLS regression analysis of the fraction of shares sold in the first six months of listing for 3,009 IPO allocations to FII for a sample of 45 bookbuilding and 58 auction IPOs listed on the BSE and/or NSE between 2004 and 2006. The dependent variable in all the specifications is the fraction of shares sold in the first six months of listing. Appendix A provides definitions of all the variables. All tests use White heteroscedasticity robust standard errors. The p-values are in brackets. \*\*\*, \*\* and \* indicate statistically significant at 1%, 5% and 10% respectively.

			Overall			Frequen	t Investors	Non-Frequent Investors		
	Overall (1)	Tercile 2	Tercile 3	Tercile 2 (4)	Tercile 3 (5)	Tercile 2 (6)	Tercile 3 (7)	Tercile 2	Tercile 3	
Mechanism	0.004	-0.096***	-0.019	0.060	0.038	0.188	0.063	-0.174***	0.008	
	(0.17)	(-2.68)	(-1.28)	(0.59)	(0.65)	(1.61)	(0.97)	(-2.95)	(0.12)	
Institutional demand	0.104***	0.116***	0.022	0.107***	0.021	0.091***	0.033*	0.092***	-0.053	
	(7.98)	(5.26)	(1.28)	(4.73)	(1.22)	(2.93)	(1.68)	(2.80)	(-1.40)	
Stock return	0.019	0.042**	-0.079***	0.043**	-0.076***	0.010	-0.078***	0.101***	-0.071*	
	(1.29)	(2.17)	(-4.76)	(2.28)	(-4.58)	(0.41)	(-4.18)	(3.09)	(-1.91)	
Underwriter reputation	-0.088***	-0.074	-0.017	0.036	0.015	0.069	0.027	-0.129	-0.099	
	(-3.29)	(-1.39)	(-0.49)	(0.41)	(0.32)	(0.71)	(0.56)	(-1.57)	(-1.16)	
Proceeds (log)	-0.050***	-0.085***	-0.067***	-0.089***	-0.069***	-0.044*	-0.051***	-0.082***	-0.071**	
	(-6.14)	(-5.68)	(-4.80)	(-5.84)	(-4.91)	(-1.91)	(-3.03)	(-3.57)	(-2.41)	
First day return	-0.008	0.001	0.037	0.013	0.042	0.007	0.026	0.096	0.187***	
	(-0.33)	(0.01)	(1.37)	(0.23)	(1.54)	(0.08)	(0.86)	(1.20)	(3.88)	
Mechanism × Reputation				-0.182** (-2.06)	-0.079 (-1.16)	-0.264** (-2.06)	-0.109 (-1.46)			
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Constant	0.609***	0.876***	0.883***	0.837***	0.882***	0.543***	0.730***	0.910***	1.055***	
	(7.56)	(6.42)	(8.90)	(6.03)	(8.87)	(3.02)	(6.26)	(3.93)	(4.36)	
Observations Pseudo $R^2$	3,009	1,013	993	1,013	993	580	819	453	144	
	0.031	0.091	0.056	0.094	0.057	0.034	0.041	0.135	0.114	

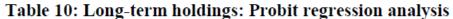


Table 10 reports the estimates of the probit regression analysis of the fraction of shares sold in the first six months of listing for 3,009 IPO allocations to FII for a sample of 45 bookbuilding and 58 auction IPOs listed on the BSE and/or NSE between 2004 and 2006. The dependent variable in all the specifications takes the value of 1 if investors hold their entire allocation at the end of six months and 0 otherwise. Appendix A provides definitions of all the variables. All tests use White heteroscedasticity robust standard errors. The p-values are in brackets. \*\*\*, \*\* and \* indicate statistically significant at 1%, 5% and 10% respectively.

			Overall			Frequent	Investors	Non-Freque	ent Investors
	Overall	Tercile 2	Tercile 3	Tercile 2	Tercile 3	Tercile 2	Tercile 3	Tercile 2	Tercile 3
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Mechanism	0.100**	0.255**	0.096	-0.260	-0.126	-0.692*	-0.278	0.455***	0.250
	(2.14)	(2.50)	(1.28)	(-0.94)	(-0.73)	(-1.92)	(-1.41)	(2.65)	(1.15)
Institutional demand	-0.231***	-0.388***	-0.103*	-0.359***	-0.099*	-0.436***	-0.121**	-0.224**	0.035
	(-7.28)	(-5.78)	(-1.89)	(-5.24)	(-1.81)	(-4.53)	(-2.00)	(-2.22)	(0.23)
Stock return	-0.097***	-0.167***	0.098*	-0.175***	0.088*	-0.128	0.118**	-0.257***	-0.012
	(-2.92)	(-2.76)	(1.87)	(-2.89)	(1.66)	(-1.59)	(1.97)	(-2.62)	(-0.10)
Reputation	0.150**	0.168	-0.073	-0.190	-0.197	-0.295	-0.215	0.293	0.154
_	(2.24)	(1.13)	(-0.71)	(-0.84)	(-1.51)	(-1.14)	(-1.53)	(1.20)	(0.62)
Proceeds (log)	0.131***	0.170***	-0.035	0.184***	-0.024	0.096	-0.128**	0.097	-0.035
	(6.25)	(3.72)	(-0.75)	(3.91)	(-0.52)	(1.38)	(-2.23)	(1.35)	(-0.35)
First day return	0.097	0.236	-0.174*	0.192	-0.195**	0.364*	-0.172*	-0.188	-0.634**
•	(1.51)	(1.53)	(-1.95)	(1.24)	(-2.17)	(1.66)	(-1.79)	(-0.83)	(-2.31)
Mechanism × Reputation				0.600**	0.308	0.933**	0.419*		
•				(2.04)	(1.62)	(2.39)	(1.84)		
Industry fixed effects	Yes	Yes							
Constant	-0.690***	-0.594	0.297	-0.472	0.302	0.355	1.040***	-0.319	0.234
	(-3.91)	(-1.53)	(0.93)	(-1.22)	(0.94)	(0.68)	(2.68)	(-0.48)	(0.30)
Observations	3,009	1,013	993	1,013	993	580	819	453	144
Pseudo R <sup>2</sup>	0.029	0.067	0.016	0.070	0.017	0.062	0.028	0.067	0.030



### Robustness Tests

- Excluding IPOs from the last two months of the bookbuilding regime
  - Exclude 9 bookbuilding IPOs issued in the month of November and December of 2005
  - Coefficients of the mechanism dummy across all the specifications is markedly larger

 Alternative specifications: Cold IPOs, Frequent & Non-Frequent Investors; alternative approach to constructing terciles



### Conclusions

- The paper contributes to the debate on the choice of IPO mechanism.
- Uses data from Indian IPOs and compares flipping across bookbuilding and auction IPOs
- By analyzing flipping by FII, we find that investors in bookbuilding IPOs flip considerable less than investors in auction IPOs.
- Results hold for both frequent and non-frequent investors.
- Results are stronger when bookbuilding IPOs are managed by high reputation underwriters and have weak demand.
- Allocation discretion appears to benefit both issuers and underwriters.



## Thank You!