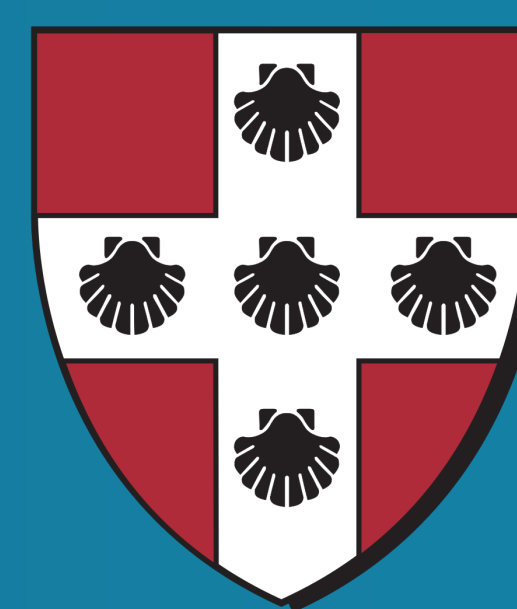


Mechanisms of Allocation and Impacts of Abolishment: Evidence from Chinese Stock Quota System

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Introduction

- ❖ The Chinese stock market had experienced 10 years of central planning of shares, so called “quota system”, from 1992-2002 after its establishment in 1990¹.
- ❖ Under the “quota system”, every year each province would receive a quota restriction for shares from PBOC, and each province would recommend firms (usually SOEs) to apply for public listing within the quota.
- ❖ The allocation of quota was not equal among provinces, so we want to examine what determined the difference in allocation.
- ❖ The “quota system” was abolished around 2002, and we want to examine how the abolishment had affected IPO probabilities for firms.

Methodology & Results

I. Allocation of Quota

- ❖ The data for annual provincial allocation of quota is not publicly accessible, so we utilize the total share of listed firms annually in each province to approximate the quantity of quota².
- ❖ In 1996, a major policy change was introduced to the quota system, which the control of quota expanded to include both share quantity and the number of firms can go public³. Therefore, we use 1996 to separate periods and calculate the means of variables for the cross-sectional regressions.
- ❖ Q: quota quantity; SOE: number of SOEs; O: output of SOEs; GDP; POP: population; SG: dummy code = 1 for Shanghai and Shenzhen; j: province; t: year periods.

$$Q_{jt} = \alpha_1 + \beta_1 SOE_{jt} + \beta_2 O_{jt} + \beta_3 GDP_{jt} + \beta_4 POP_{jt} + \beta_5 SG$$

AshareMean	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
SOENUMmean	-22.06902	15.00263	-1.47	0.154	-53.03292	8.894882
SOEoutputMean	107.4007	39.04889	2.75	0.011	26.80777	187.9937
gdpMean	-22.86903	23.09839	-0.99	0.332	-70.54177	24.80371
PopMean	8.623721	7.893946	1.09	0.285	-7.668583	24.91602
dummy_GS	475561.1	44601.25	10.66	0.000	383508.7	567613.6
_cons	26695.38	19678.89	1.36	0.188	-13919.86	67310.62

AshareMean2	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
SOENUMmean2	41.74751	13.38079	3.12	0.005	14.13093	69.36409
SOEoutputMean2	25.04886	18.49982	1.35	0.188	-13.13289	63.23062
gdpMean2	11.63094	7.082443	1.64	0.114	-2.986508	26.24838
PopMean2	-18.78324	4.884817	-3.85	0.001	-28.865	-8.701472
dummy_GS	30369.83	33069.05	0.92	0.368	-37881.34	98620.99
_cons	7511.032	15907.19	0.47	0.641	-25319.79	40341.86

II. Impact of Abolishment

- ❖ To analyze the impact of the quota abolishment, we use the instrument of “IPO probability”, which is the ratio of provincial share (unit 10k) and the provincial number of firms above scale in percentage.
- ❖ We further utilize the IPO probability to estimate the “quota level”, which is the average of IPO probability from 1996-2002 by province.
- ❖ We classify the quota level into high and low groups using median and plot Figure 1.

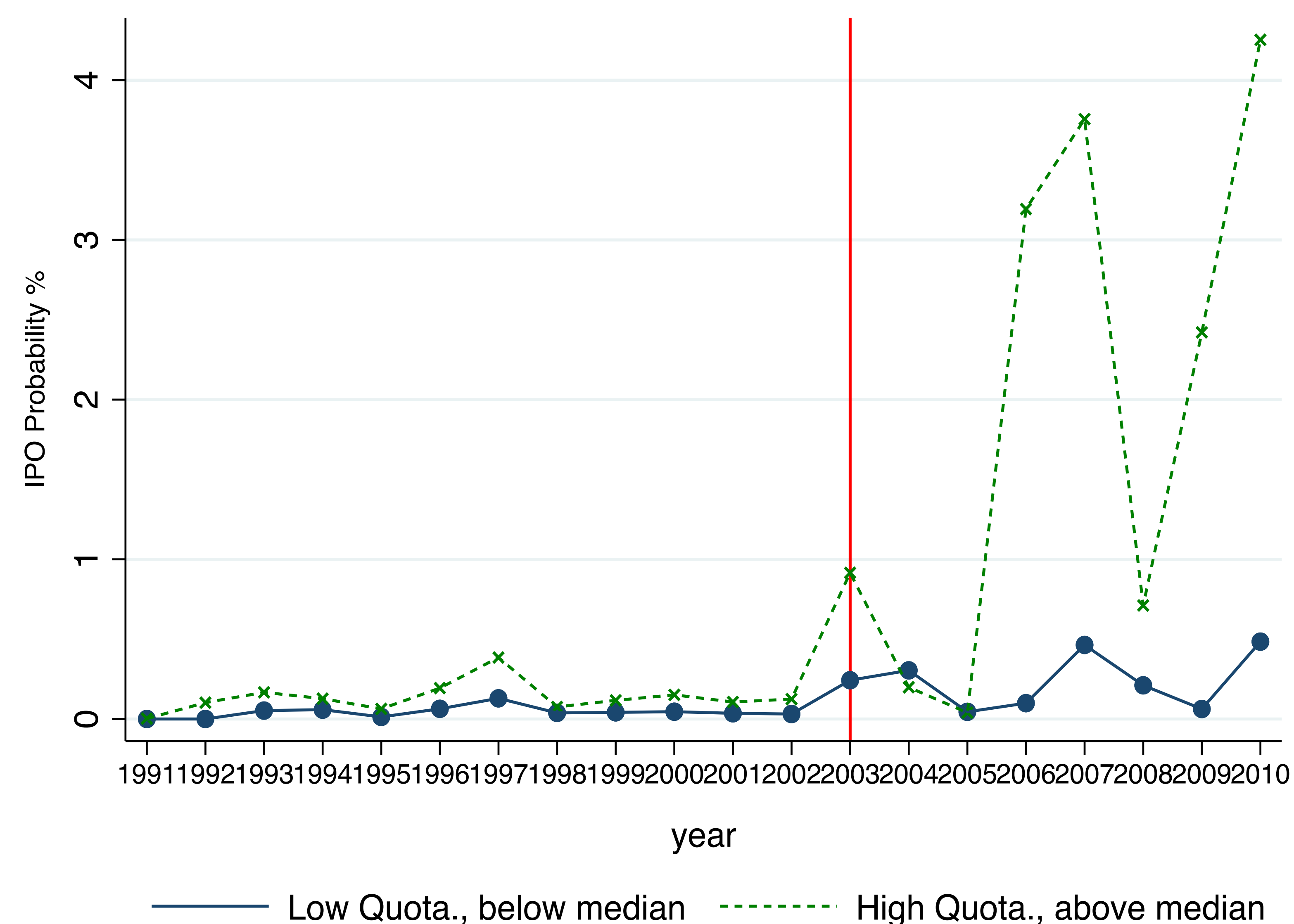


Figure1: IPO Probabilities in Provinces with a High vs. Low Pre-Reform Quota Level

- ❖ P: IPO probability; Pre: dummy variable =1 before the abolishment in 2003, 0 after; Q: estimated quota level; μ : fixed effects of year; γ : fixed effects of province.
- ❖ We use the regression with an interaction term for pre-reform dummy and quota level, controlling the fixed effects of year and province, to examine the extent of impact on quota level on IPO probability before and after the abolishment in 2003.

$$P_{jt} = \alpha_1 + \beta_1 Pre_t Q_j + \mu_t + \gamma_j + \varepsilon_{jt}$$

IPO_prob	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
pre_quota	-26.5029	18.31095	-1.45	0.159	-63.95299	10.9472

Conclusion

I. Allocation of Quota

- ❖ The cross-sectional results show that before the policy change in 1996, the allocation of quota among provinces was positively correlated with the output of SOEs. Besides, Guangdong and Shanghai acquired significantly more quota than that of other provinces.
- ❖ After 1996, the allocation of quota no longer related to the output of SOEs. Also, the advantage Guangdong and Shanghai had become insignificant. In this period, the allocation of quota was positively correlated with the number of SOEs and the population.

II. Impact of Abolishment

- ❖ Figure 1 shows that after the abolishment of quota system, provinces with previously higher quota level experienced a bigger increase of IPO probability.
- ❖ The regression further confirms the results, as the coefficient β_1 for the interaction term is negative, which implies quota level has a smaller degree of impact on IPO probability before the abolishment than that after 2003.

Reference

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