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# Competitive Effects from IPOs: Evidence from Chinese Listing Suspensions

*Frank Packer, Bank for International Settlements*

*Mark Spiegel, Federal Reserve Bank of San Francisco*

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# IPO Effects on Listed Firms

- Background/motivation: Two channels stressed in literature:
  - Direct competition for firms in same industry (Akhigbe, et al 2003; Hsu, et al 2010)
  - Competition in asset space with firms whose equities have common risk characteristics (Braun and Larrain 2009)
- Studies of competitive IPO effects challenged by endogeneity of IPO listings
- Examine blanket suspensions of IPO activity by the China Securities Regulatory Commission (CSRC)
- Panel spans three suspensions, allowing controls for macroeconomic conditions

## Results indicate IPO competition from both channels

- Direct competition:
  - Suspensions disproportionately benefit listed firms in industries heavily represented in the queue of firms approved to go public
- Asset space competition:
  - Firms with greater covariance in historic returns with synthetic portfolio replicating industry composition of suspended IPOs earn higher returns on suspension announcement dates.
- Heterogeneity in sensitivity to announcements:
  - Equity responses to the suspension announcements dampened for more profitable and productive firms {measured through a variety of alternative metrics)

## Relation to literature

- Impact of IPOs on existing firms: (Akhigbe et al. 2003, Hsu et al. 2010), Spiegel and Tookes 2020)
- Asset space competition: (Hong et al. 2008, Baschieri et al. 2015, cBraun and Larrain 2009, Li et al. 2018)
- Endogeneity of IPOs: (Ritter 1991, Pagano et al. 1998, Boeh and Dunbar 2014, Baker and Wurgler 2000)
- Impact of China suspensions on firms in queue: (Cong and Howell 2019, Shi, et al 2018)

## Suspensions motivated by desire for market stability

- Fear that new IPOs might lower liquidity, or depress market prices
  - Suspension duration indeterminate at launch, and has been variable
  - Three most recent suspensions in 2008-09, 2012-14, and 2015 were 214, 438 and 156 days, respectively
  - Costly to firms in queue (Cong and Howell 2019)
- Suspensions had mixed success in lifting overall market
  - Three suspensions examined in this study quite mixed:
  - 2008-2009: Market rebounded during suspension period
  - 2012-2014 suspension: market remained fairly constant
  - 2015 suspension: Share prices continued to decline, with partial reversal later

## Three Suspension Episodes in Parallel

Shanghai Stock exchange composite index, 2008-2015

Graph 1



The lines indicate the three suspensions starting from 6 December 2008, 3 November 2012 and 4 July 2015.

Source: CEIC.

## IPO Process in China for individual firms

- Series of steps
  - Preliminary review of CSRC application that may take years.
  - Formal assessment by the Stock Issuance Examination and Verification Committee of the CSRC
  - Application at a domestic exchange within six months (more a formality)
  - Firm and underwriters build a book, conduct a road show and decide on a share subscription day
  - After subscription, average of 4 weeks for the shares to list
- In total, time between approval and listing averages around 3 months, but intervals from 2 to 5 months are common in normal periods

## IPO approval process facilitates identification

- Ahead of the 2008-09, 2012-14 and 2015 suspensions, 30, 66 and 62 firms had been approved for an IPO:
  - 158 total
- Considerable variation across suspensions in IPO size
  - More than 3 billion RMB in 2008
  - 0.4 and 0.6 billion RMB in 2012 and 2015, respectively
  - Time dummies control for differences in impact of suspensions as well as market and economic conditions at time of suspension announcements
- Industry affiliation of delayed firms is public knowledge, allowing for calculation of expected IPO-queue share of industry market capitalisation



## Summary statistics for IPO suspensions

		Mean	Median	Std. Dev.	Min	Max
<b>2008 Suspension (30 firms)</b>						
Size of postponed IPO	RMB bn	3.037	0.670	9.284	0.266	50.160
Length of Suspension	Days	214				
Days from Approval to IPO	Days	409.100	386	73.573	367	726
<b>2012 Suspension (66 firms)</b>						
Size of postponed IPO	RMB bn	0.444	0.290	0.529	0.129	4.000
Length of Suspension	Days	438				
Days from Approval to IPO	Days	698.955	616.5	184.035	546	1500
<b>2015 Suspension (62 firms)</b>						
Size of postponed IPO	RMB bn	0.565	0.366	0.909	0.115	7.238
Length of Suspension	Days	156				
Days from Approval to IPO	Days	242.984	236	55.127	175	417

Source: Wind and authors' calculations.

# Sample Data

- Base sample is pooled data;
  - Listed firms on Shenzhen and Shanghai stock exchanges at time of suspension announcements
  - 6,045 obs, 1,484 from 2008, 2,390 from 2012, and 2,171 from 2015
  - Dependent variable is  $r(f,i,t)$ , the one-day return on equity of firm  $f$  in industry  $i$  on date  $t$ , closing price over previous trading day
- Two variables of interest:
- Industry-level measure of potential delay in direct competition
  - Expected share of firms from listed firm's industry in queue
  - Use realized values of IPOs
  - Measure implicitly assumes unbiased expectations
- Proxy for potential competition in asset space
  - Based on covariance of securities with synthetic portfolio of firms with industry composition matching delayed IPO queue
  - Calculated as weighted sum of covariances between monthly return of prior 3 years and monthly return in each industry

## Sample Data (continued)

- Interact measures of IPO competition with indicators of profitability
  - Five profitability indicators:
    - Net profit margin (NPM), return on assets (ROA), Return on equity (ROE), Return on invested capital (ROI), and Operating profitability (OROC)
- Other conditioning variables
  - Market capitalization (MKTCAP), leverage (LEV), price to book ratio (PBOOK), earnings volatility (SDEBIT), State-owned enterprises (SOE), Trading exchange (SHANGHAI)
- Also include time dummies to control for differences in macroeconomic and overall financial conditions

## Specification

- Base specification
  - Indicator of firm performance on its own, and interacted with the two channels of potential competition from IPO activity:
    - IPO (i,t): value of IPOs in the queue in industry i at time t
    - COV(f,i ,t): average covariance of returns over the previous three years of firm f in industry i at time t with weighted portfolio of industries in queue.

- Base specification with net profit margin (NPM (f,i,t) indicator satisfies

$$r_{f,i,t} = c + \beta_1 NPM_{f,i,t} + \beta_2 IPO_{i,t} + \beta_3 IPO_{i,t} \cdot NPM_{f,i,t} + \beta_4 COV_{f,i,t} \\ + \beta_5 COV_{f,i,t} \cdot NPM_{f,i,t} + \gamma X_{f,i,t} + D_{12} + D_{15} + \epsilon_{f,i,t}$$

- Estimate with OLS and standard errors clustered by industry

## Base specification results

Perf. ind. (PI)	(1) NPM	(2) ROA	(3) ROE	(4) ROI	(5) OROC
PI	0.055*** (0.010)	0.134*** (0.015)	0.082*** (0.011)	0.090*** (0.012)	0.036*** (0.004)
IPO	0.209*** (0.063)	0.290** (0.127)	0.257** (0.124)	0.243* (0.140)	1.863*** (0.628)
IPOxPI	-0.018*** (0.003)	-0.049*** (0.018)	-0.019*** (0.008)	-0.028** (0.008)	-0.018*** (0.006)
COV	0.002** (0.001)	0.002** (0.001)	0.004*** (0.001)	0.003*** (0.001)	0.006** (0.002)
COVxPI	-0.000 (0.000)	-0.000** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)	-0.000** (0.000)
Observations	6,045	6,048	5,984	5,916	5,937
R-squared	0.513	0.515	0.514	0.531	0.530

## Baseline results summary

- Point estimates indicate economic significance: a one-standard deviation increase in *IPO* increases returns by 24.4 basis points
- Point estimate on the interactive term indicates that a one-standard deviation increase in *NPM* for firms with average *IPO* values increases those returns by 5.9 basis points
  - Stronger firms less sensitive to suspension news, all else equal
- *COV* also enters at statistically significant levels with expected positive sign
  - A one-standard deviation increase in *COV* increases returns by 42.8 bp
- Results are robust to use of other performance proxies
- Also robust to adjusting for period of time firms were in *IPO* queue at time of announcement

## Consider a number of changes in specification

- Drop conditioning variables
- Drop interactive terms
- Drop *IPO* and *IPOxNPM*
- Drop *COV* and *COVxNPM*
- Excess, instead of raw, returns
- 2-day windows
- Use NPM as default performance indicator

## Changes in specification

	(1)	(2)	(3)	(4)	(5)	(6)
NPM	0.055*** (0.012)	0.046*** (0.009)		0.054*** (0.010)	0.044*** (0.010)	0.061*** (0.013)
IPO	0.251*** (0.056)	-0.045** (0.022)	-0.046*** (0.017)	0.228*** (0.064)	0.467*** (0.097)	0.226** (0.086)
IPOxNPM	-0.021*** (0.004)			-0.019*** (0.004)	-0.030*** (0.007)	-0.025*** (0.006)
COV	0.002** (0.001)	0.001* (0.000)	-0.001 (0.001)		0.001** (0.001)	0.002** (0.001)
COVxNPM	-0.000 (0.000)		0.000 (0.000)		-0.000 (0.000)	-0.000** (0.000)
Observations	6,058	6,045	6,045	6,106	6,060	6,045
R-squared	0.495	0.512	0.505	0.492	0.543	0.638

- Robust, except for models 2 and 3 which drop interactive term.
- Demonstrates need for allowing heterogeneous responses across firms



## Consider changes in sample

- Only SOE firms
- Only Non-SOE firms
- Only Shanghai listed firms
- Only Shenzhen listed firms
- Balanced panel
- Drop productive or unproductive firms
- Drop profitable or unprofitable firms
- Drop big or small firms
- Drop firms with high value *IPO* or large *Impact M*

## Changes in sample (1)

	(1) IPO	(2) IPO · NPM	(3) NPM	(4) COV	(5) COV · NPM	(6) Constant
(1) SOE sample	0.203*** (0.0651)	-0.017*** (0.004)	0.070*** (0.019)	0.006* (0.003)	-0.000** (0.000)	2.144*** (0.739)
(2) Non-SOE sample	0.211* (0.112)	-0.017*** (0.005)	0.050*** (0.009)	0.001 (0.001)	0.000 (0.000)	2.480*** (0.404)
(3) Shanghai listed	0.249*** (0.081)	-0.021*** (0.006)	0.051*** (0.014)	-0.000 (0.002)	0.000 (0.000)	3.494*** (0.510)
(4) Shenzhen listed	0.219*** (0.077)	-0.018*** (0.004)	0.036*** (0.007)	0.002** (0.001)	-0.000* (0.000)	3.251*** (0.269)
(5) Balanced panel	0.118 (0.073)	-0.010** (0.005)	0.070*** (0.013)	-0.001 (0.002)	-0.000*** (0.000)	3.5307*** (0.567)
(6) Drop profitable	0.209*** (0.063)	-0.018*** (0.003)	0.055*** (0.010)	0.002** (0.001)	0.000 (0.000)	2.602*** (0.330)

## Changes in sample (2)

	(1) IPO	(2) IPO · NPM	(3) NPM	(4) COV	(5) COV · NPM	(6) Constant
(7) Drop unprofitable	0.209*** (0.063)	-0.018*** (0.003)	0.055*** (0.010)	0.002** (0.001)	0.000 (0.000)	2.602*** (0.330)
(8) Drop productive	0.189* (0.096)	-0.017** (0.007)	0.045*** (0.006)	0.002** (0.001)	0.000 (0.000)	2.950*** (0.225)
(9) Drop unproductive	0.209*** (0.063)	-0.018*** (0.003)	0.055*** (0.010)	0.002** (0.001)	0.000 (0.000)	2.602*** (0.330)
(10) Drop big	0.215*** (0.062)	-0.019*** (0.003)	0.055*** (0.010)	0.002** (0.001)	0.000 (0.000)	2.658*** (0.330)
(11) Drop small	0.209*** (0.063)	-0.018*** (0.003)	0.055*** (0.010)	0.002** (0.001)	0.000 (0.000)	2.602*** (0.330)
(12) Drop high IPO	0.781*** (0.261)	-0.051*** (0.015)	0.077*** (0.016)	0.003*** (0.001)	-0.000** (0.000)	2.098*** (0.588)
(13) Drop large ImpactM	0.810*** (0.250)	-0.045*** (0.013)	0.060*** (0.011)	0.002** (0.001)	0.000 (0.000)	2.448*** (0.375)

- Overall robust, except for interactive COV term, which remains negative and is close to 10% significance

## Changes in estimation methodologies

- Estimate delay-adjusted models with robust standard errors
- Estimate with weighted least squares, weighting by firm assets
- Winsorize outliers at 1% instead of 5% level
- Trim at 5% level

## Changes in estimation method

	(1)	(2)	(3)	(4)	(5)
	Robust SE	Regular SE	Weighted LS	1% Winsor	5% Trim
NPM	0.055*** (0.007)	0.055*** (0.006)	0.023** (0.010)	0.051*** (0.010)	0.063*** (0.009)
IPO	0.209*** (0.053)	0.209** (0.087)	0.070*** (0.019)	0.204*** (0.058)	0.228*** (0.062)
IPOxNPM	-0.018*** (0.003)	-0.018*** (0.005)	-0.009*** (0.002)	-0.017*** (0.003)	-0.019*** (0.003)
COV	0.002* (0.001)	0.002*** (0.001)	0.003** (0.001)	0.002** (0.001)	0.002** (0.001)
COVxNPM	-0.000 (0.000)	-0.000* (0.000)	-0.001* (0.000)	-0.000 (0.000)	-0.000* (0.000)
Observations	6,045	6,045	3,803	6,045	4,899
R-squared	0.513	0.513	0.591	0.512	0.516

- Robust, except for interactive COV term.

## Evaluate impact of IPOs on listed firms through Chinese suspensions

- Unanticipated and applied to entire market
- Find positive evidence for both direct and asset-space competitive effects
  - Robust to wide variety of sensitivity tests
- Also find evidence of heterogeneity in sensitivity to suspension news
  - Better-performing firms benefit less from suspension, suggesting less exposure to IPOs
  - Also robust to wide variety of sensitivity tests
  - Less robustness for interactive COV (asset-space) term



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Thank you!