Government Interventions in Initial Public Offerings and Firm Innovation in China


China’s government regulators have suspended initial public offerings (IPO) of companies for indefinite periods on multiple occasions. Even though affected firms eventually do go public, they lose access to public markets for extended periods. Government interventions in China’s market activities have become noticeably more frequent in recent years, yet the impact of such interventions on firms is not always clear. A recent study highlights how policy uncertainties induced by forced IPO suspensions affect corporate outcomes and, in particular, corporate innovation.

**The data.** Researchers first examined 1,558 firms approved to IPO on the Shanghai and Shenzhen Main and SME Boards from 2004 to 2015. Focusing on two suspension periods — the first from September 2008 to July 2009 and the second from October 2012 to January 2014 — they identified 350 firms that received IPO approvals from Chinese regulators within 12 months of each IPO suspension. To determine innovation *quantity*, researchers tallied the number of patent applications filed by each firm in the sample. They also determined firm innovation *quality* by assessing both the number of patents granted by Chinese and foreign patent offices and citations to Chinese patents.

Information on IPO applications and approval data was obtained from the China Securities and Regulatory Commission for listings on the A-share Shanghai and Shenzhen exchanges between 2004 and 2015. Using the China Securities Market and Accounting Research (CSMAR)/WIND, the researchers collected IPO prospectus data, listing, and financial data, which they then supplemented with additional data from Compustat and SDC New Issues.

Researchers gathered annual and monthly application and grant data from China’s State Intellectual Property Office. They matched the firms in their sample to patent and citation data in Google Patents, which includes over 87 million granted patents and published patent applications from around the world.

**INSIGHTS**

- Compared to unaffected firms, firms subject to government IPO suspensions in China exhibited a 28% drop in patent applications, a 20% decrease in patent grants, and 36% to 46% fewer citations to their Chinese patents.

- Four years following their IPO approvals, impacted firms still averaged 18% fewer patent applications compared to non-impacted firms. Impacted firms also required an estimated 7.7 years to catch up to unaffected firms in innovation activities.

**Short-term effects of IPO suspension on innovation.** To conduct their analyses, researchers formed two groups of firms. The “control” group consisted of firms that received approvals earlier in the 12-month analytical window preceding each IPO suspension and successfully listed before the ban. The “treated” group consisted of firms that received approvals later in the 12-month window and could not publicly list until the IPO suspension had ended. Those firms not only endured a longer wait time (on average 16 months compared to 3 months for the control group), but also faced significant uncertainties about the timing of their IPOs.
The analysis concludes that policy uncertainty engendered by government IPO suspensions played a more significant role than financial constraints in reducing innovation due to a dampening effect on managerial risk-taking and disruptions to the cumulative process of innovation.

One year after IPO approval, the treated firms, which were still almost entirely pre-IPO, exhibited 28% fewer Chinese patent applications than control firms, which were nearly all post-IPO. Assuming constant growth rates for the two groups after approval, researchers determined that firms in the treated group would need 7.7 years to catch up in patent applications to their counterparts in the control group.

In addition to the number of patent applications, the delay also induced a decline in patent quality. Delayed firms were granted 20% fewer Chinese patents. They also received 36% to 46% fewer citations (depending on the statistical model used) to Chinese patents in the year after their IPO approval.

**Long-term effects of IPO suspension on innovation.** Researchers also found that the negative effects on patenting activity persisted long after the treated firms had successfully listed. Specifically, in the third year following their IPO approvals, conditional on having listed, the treated firms averaged 23% fewer patent applications, while in the fourth year, they still averaged 18% fewer patent applications.

To explain why policy uncertainty might play such a dominant role, researchers point to the cumulative nature of innovation. The productivity of any firm’s investment in innovation depends on whether it maintains its R&D infrastructure and remains at the forefront of innovation. By analyzing executive turnover data from the CSMAR Executive and Board Database, researchers also found that managers who experienced suspension-induced delays innovated less, whereas firms that changed CEOs innovated more after the suspension. Researchers posit that policy uncertainty might lower managerial appetite for risk and experimentation following the delays.

**Importance of regulatory stability and clarity.** Innovation is central to China’s ongoing efforts to transition from export- and infrastructure-led growth to an economy centered around high-tech industries and consumption. It is widely understood that China’s government plays an especially active role in its financial markets. Accurately assessing how state interventions in China’s market operations affect domestic innovation is critically important. According to this research, Chinese regulators should prioritize regulatory stability and clarity going forward in order to encourage firm innovation.