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## Rise of Bank Competition

### Evidence from Banking Deregulation in China

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**B**anks are the most important financial intermediaries in many countries and play an essential role in economic growth. Banking sectors are often heavily regulated around the globe, and a central question is whether banking deregulation and the subsequent increased competition are desirable. Increased bank competition may be beneficial to borrowers by lowering borrowing costs but can also have negative consequences, such as increased risk taking and decreased efforts in information collection. Previous studies have shown mixed evidence on the aggregate effects of increased competition in the banking sector.

We use individual loan-level data to separate the costs and benefits of increased bank competition in China, the largest bank loan market worldwide. We find that following a deregulation in the form of geographically lowered bank entry barriers, banks entering into deregulated cities increased lending amounts significantly, as anticipated. But the impact was filtered through and altered by the local industrial organization of banks, and the potential benefits were mitigated adversely by a preference for lending to state-owned enterprises (SOEs) over more-productive private firms. In particular, the soft budget constraint of SOEs, with implicit government guarantees, makes new entrant banks prefer inefficient SOEs to contemporaneously opaque local private firms. That is, for private firms that did get funding, the entrant banks required

more guarantees and higher internal loan ratings as indicators of quality. In the long run, entrant banks learned the characteristics of local private firms and lent more to them, but in some sense that we try to make precise, the quite sizable amount of money lent to SOEs in new markets was “lost.” Besides this loss, there were beneficial immediate impacts. The on-lending interest rates in deregulated cities decreased significantly following deregulation, and the private firms that received such credit achieved yet higher levels of growth and profitability. We describe this as a novel tradeoff of banking deregulation and in turn contribute to the ongoing debate.

We study the impacts of the 2009 partial bank entry deregulation on bank competition and consequent economic activities. Five large state-owned commercial banks have dominated China’s banking system, with 51,557 branches covering 85 percent of the country. Twelve joint equity banks were suppressed severely in regard to competition, with only 4,161 branches covering 9 percent of the country in 2008. Before 2009, the China Banking Regulatory Commission (CBRC) restricted joint equity banks’ expansion by allowing such banks to open only one branch in one city at a time. In April 2009, the CBRC partially lifted this barrier and allowed joint equity banks to open branches freely in cities where they already had branches. Joint equity banks were also allowed to enter all cities in a province when they operated branches in the province’s capital city.

This deregulation offers an opportunity to analyze competition and economic outcomes before and after the relaxation of entry barriers. In particular, banks in cities in which no equity banks have been allowed to expand are mostly immune to the deregulation shock and can serve as the control group. We identify and quantify the impacts of how joint equity banks compete, how “big five” banks respond, and how firms react across cities with different *ex ante* competition levels.

Our primary data are from the CBRC, which records detailed loan-level information on the 17 largest commercial banks in China for 2006–2013. The loan-level data cover all borrowers with an annual credit line of more than RMB 50 million (approximately USD \$8 million), which represent approximately 80 percent of the total bank loan market in China. The data allow us to trace out each loan that a firm borrowed and to study how firms react to deregulation in terms of their investment, employment, performance, and profitability trends.

We first document how joint equity banks expand and compete with big-five banks. Joint equity banks have been growing substantially since the 2009 deregulation. Their market share increased from 24.5 percent in 2008 to 33.5 percent in 2010. The percentage of cities covered by joint equity banks increased from 9.5 percent in 2008 to 15.7 percent in 2010, while big-five banks increased their coverage by only 2 percent over the same period. When joint equity banks enter, expansion is mainly to existing borrowers; 88 percent of the loans of entrant banks go to firms that have been borrowing from incumbent banks. On the other hand, the 2009 deregulation has had insignificant effects on deposits. This is mainly due to the deposit interest rate cap imposed by the Chinese government. New entrant banks must offer the same interest rate to depositors as incumbent banks.

Second, we study how deregulation affects loan contract terms and loan performance. Our analysis shows that the 2009 deregulation led to significantly lower interest rates, better internal loan ratings, more third-party guarantees, and lower default rates for joint equity bank loans in deregulated cities. These effects are mainly observed for private firms rather than for SOEs. In particular, the 2009 deregulation led to a 6.6 percent decrease in the interest rates of private firms but had no significant effects on SOEs’ borrowing costs. Deregulation also led to stronger screening standards applied by new entrant joint equity banks and, consequently, to a 77.7 percent decrease in the default rates of private-firm loans, while the default rates of SOEs did not change significantly.

Third, we explore the effects of the 2009 deregulation on firm activities. We restrict our sample to firms that have borrowed from banks, because such firms should be affected

directly by loan contract term changes caused by deregulation. We find that the 2009 deregulation led to increases in growth rates of both fixed assets and the number of employees by 21.3 percent and 8.1 percent, respectively. In addition, deregulation also led to increases in firms’ net income growth and return on assets by 44.0 percent and 1.8 percent, respectively. The positive effects of deregulation on borrowers are more pronounced in cities with higher market concentration *ex ante* or in cities in which new entrant joint equity banks have greater total assets. Thus, deregulation was more effective in previously less-competitive areas or when entrant banks were more powerful.

Next, we explore the negative consequences of deregulation. SOEs in China, similar to those in many other countries, are much less efficient than private firms and distort credit allocation. After the 2009 deregulation, joint equity banks made even more loans to SOEs. In particular, our analysis shows that SOE loans outstanding and shares of SOE loans made in deregulated cities increased by 39.3 percent and 5.3 percent, respectively. This pattern weakens in the two-year window following deregulation (i.e., 33.5 percent and 4.5 percent increases in SOE loan amounts and shares, respectively) and becomes insignificant in the three-year window. This suggests that although the distortion is large, it is short term (i.e., within two years). Among SOEs, joint equity bank branches in deregulated cities lent significantly more to less-efficient ones with lower productivity, which further distorted credit allocation. These less-efficient SOEs have greater assets on average and rank higher in the political hierarchy (e.g., central-government SOEs), which equips them with softer budget constraints (i.e., stronger implicit government guarantees).

The distortion to SOEs requires elaboration, and we gain additional insights from the data to which we have access. On the one hand, it is well documented that SOEs enjoy soft budget constraint with explicit or implicit government guarantees. Moreover, we find that less-efficient SOEs have greater assets on average and rank higher in the political hierarchy (e.g., central-government SOEs), which equips them with softer budget constraints (i.e., stronger implicit government guarantees). On the other hand, new entrant joint equity banks typically lack sufficient information on local borrowers, especially for those contemporaneously opaque local private firms, and tend to reduce what would be credit risks in the short run by lending to SOEs with that soft budget constraint. Consistently, we find that when these entrant banks accumulate more information on local firms, they start to increase lending to more productive ones in the long run (e.g.,

in three years). To further support this hypothesis, we use the monthly internal ratings of each loan in the sample to measure banks' information on borrowers—that is, banks' ability to downgrade the internal loan ratings before delinquency. We find that banks can predict approximately 22.6 percent of the delinquency events within two years after branch opening, while this ratio increases to 42.3 percent after the third year, suggesting that new entrant banks indeed lack sufficient information on local borrowers at the beginning but accumulate more information over time.

In addition to entrant joint equity banks' preferences for SOEs with soft budget constraints, incumbent big-five banks did not alter their lending to SOEs significantly after deregulation. Consequently, more credit flowed to SOEs following deregulation. Because we find that private firms can benefit from deregulation significantly more than SOEs can in terms of growth and profitability, credit should have been granted to more-productive private firms.

These results emphasize the potential unintended adverse consequences of banking deregulation in China. Deregulation improved firm growth and profitability for individual private firms with bank credit access, especially in previously less-competitive banking areas. However, the worsening of credit allocation to inefficient SOEs

undermined the positive effects of deregulation. Performing back-of-the-envelope calculations, we find that the total amount of credit misallocation to SOEs following the deregulation is approximately RMB 684 billion, equivalent to 2 percent of China's GDP in 2008.

This unintended adverse consequence has broad implications beyond China. The core of the first and second welfare theorems is that market competition can be beneficial, while under the theory of second best, this might not be the case with market frictions. Fixing one friction (e.g., bank entry restrictions) can introduce unintended adverse effects arising from other frictions (e.g., the soft budget constraints of SOEs). These results suggest that policymakers should consider the interaction of different frictions in reform policies. Governments should optimally sequence reforms to minimize risks and maximize benefits.

#### **NOTE:**

This research brief is based on Haoyu Gao, Hong Ru, Robert Townsend, and Xiaoguang Yang, "Rise of Bank Competition: Evidence from Banking Deregulation in China," NBER Working Paper no. 25795, May 2019, <http://www.nber.org/papers/w25795>.