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Does banking competition alleviate or worsen credit constraints faced by small- and medium-sized enterprises? Evidence from China

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ABSTRACT

Banking competition may enhance or hinder the financing of small and medium-sized enterprises. Using a survey on the financing of such enterprises in China, combined with detailed bank branch information, we investigate how concentration in local banking market affects the availability of credit. We find that lower market concentration alleviates financing constraints. The widespread presence of joint-stock banks has a larger effect on alleviating these constraints, than the presence of city commercial banks, while the presence of state-owned banks has a smaller effect.

1. Introduction

The impact of competition in the banking sector on the availability of credit for small- and medium-sized enterprises (SMEs) is a crucial policy and academic question that has again attracted widespread attention in light of global economic developments including the subprime crisis. Formal (bank) financing is associated with economic growth (Beck et al., 2005), while SMEs are often constrained in obtaining it (Beck et al., 2008). Yet the determinants of this "financing gap" for SMEs have not yet been fully examined, in particular in the context of a developing financial system such as China. Competition in the banking sector, for example, may be an important driver (Petersen and Rajan, 1995; Carbo-Valverde et al., 2009).

The Chinese government has long recognized the difficulties SMEs face in obtaining financing and it has tried to help them in getting bank loans. SME financing was even added to the national development agenda, which in 2003 resulted in the "SMEs Promotion Law". However, SME financing difficulties may have never been fully solved by the implemented government policies. Therefore, to understand the determinants of SME financing in China is vitally important not only for academics but also for policy-makers.

To investigate the impact of competition in the banking sector on the availability of credit to SMEs in a developing economy, we employ the nearly 4000 responses to a unique stratified survey that was sent to Chinese private enterprises in 2006 (mainly SMEs according to the extant official definition in the Chinese law). China provides an almost ideal setting to investigate the banking competition – SME financing gap nexus. China's economy is populated with a very large number of SMEs, which contribute substantially to the national economy.[1] At the same time SMEs in China are known to face major obstacles in their access to financing, not only from the state-owned banks, but also from other types of formal financing (Ayyagari et al., 2010; Cheng and Degryse, 2010a).

We test the *Information Hypothesis* versus the *Market Power Hypothesis* with respect to the effect of banking competition on credit availability. On the one hand, in the *information hypothesis* fiercer competition may make it more difficult for banks to internalize the benefit of assisting opaque firms which in turn leads

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[1] 4.3 million SMEs account for 99% of all firms at year-end 2004 and 75% of the industrial value added during 2004. The number of SMEs increased at an annual rate of 20% between 2001 and 2004 (Sources: *State Administration for Industry and Commerce of China* and *National Commission for Reform and Development of China*).

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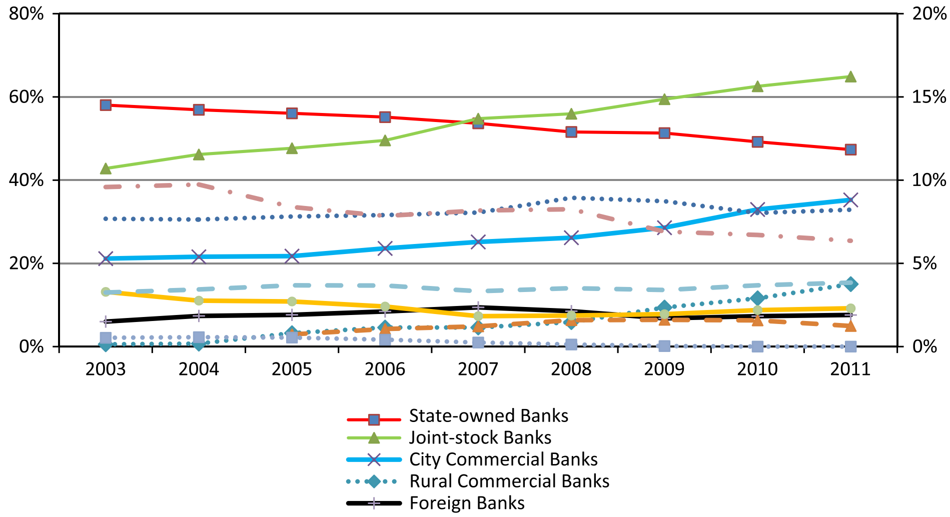

Fig. 1. Market share of banks by total assets. State-owned banks' shares are displayed on the left *Y*-axis, and the shares for the other types of financial institutions are on the right *Y*-axis. Data Source: China Banking Regulatory Commission 2011 Annual Report.

to more credit constraints (Petersen and Rajan, 1995). On the other hand, under the benchmark of *market power hypothesis* more competition in the banking market reduces the interest rate and hence increases the availability of credit to all firms irrespective of their opacity (Carbo-Valverde et al., 2009).

We find that financing constraints are alleviated in those regions where banking markets are less concentrated, irrespective of whether concentration is measured by the Herfindahl–Hirschman Index (HHI) or the three-bank concentration ratio (CR3) based on bank branch presence. An analysis of the heterogeneous effect of the HHI according to the presence of the different types of banks, namely the state-owned banks (national banks), joint-stock banks (regional banks) and city commercial banks (local banks), shows that the widespread, i.e., "un-concentrated", presence of joint-stock banks better alleviates credit constraints as compared to the presence of city commercial banks or state-owned banks. The results basically support the validity of the *market power hypothesis* for China.

This paper contributes to the literature by providing evidence on the effect of banking sector concentration (intended to measure the intensity of competition) on SME credit constraints in China. It is also the first study of its kind on emerging economies. For this purpose, we augment the survey with a new dataset of bank branches across China and employ a quantitative measure called the ratio of financing gap over credit demand to capture the information of credit constraints. The new measure is by nature more informative than traditionally used qualitative measures of credit rationing.

The rest of the paper is organized as follows. Section 2 gives an introduction of China's banking system and SME financing. Section 3 presents the dataset. Section 4 introduces the measures of the financing gap, the tested hypotheses and the methodology. Section 5 discusses the summary statistics for the variables of interest. Section 6 presents the estimates and establishes the economic importance of banking competition. Section 7 shows the instrumental variable regression. Section 8 conducts robustness checks. Section 9 concludes the paper.

2. China's banking system and SME financing

China's banking sector is dominated by four state-owned banks. As shown in Fig. 1, about half of total banking assets were owned by these four state-owned banks in 2005, which are also the least efficient banks in China (Berger et al., 2009). State-owned banks usually provide funds to state-owned firms (which are often very large firms in their own right) and show much less interest in financing SMEs. Berger et al. (2005) show that small banks are better able (than large banks) to collect and act on soft information, while large banks are less willing to lend to firms without financial records (such as small and young firms).

In addition to the four state-owned banks, there are 12 joint-stock banks in China, who range in size between that of a large state-owned bank, and that of a city commercial banks. Joint-stock banks can open branches freely around the country and their business orientation includes targeting SMEs (in contrast to their state-owned counterparts that have less such orientation).

On the "small-sized end" of the banking market, there are city commercial banks (112 in total at the end of 2005), most of which were restructured from urban credit cooperatives. Urban credit cooperatives came into being in the 1980s as the main providers of credit to SMEs, and were categorized as non-bank financial institutions by the Chinese government.[2] However, from the middle 1990s onwards the Chinese government restructured urban credit cooperatives and set-up city commercial banks in order to enhance financial stability. According to the financial regulation before 2006, city commercial banks could generally only operate within their headquarters cities, thus focusing exclusively on local banking markets and have a strong business orientation towards SMEs, which also correspond to their prior operations as urban credit cooperatives and their small sizes.

In parallel, competition in the banking market has intensified dramatically during the past decade. On the one hand, city commercial banks in China are still expanding, resulting in fiercer

[2] According to the *Almanac of China's Finance and Banking* (1995), there were 5229 urban credit cooperatives at year-end 1994. In later years, around 3000 of them were restructured into 112 city commercial banks, which means that on average 26 (= 3000/112) urban credit cooperatives were merged into one city commercial bank, while the remaining ones were merged with one of the rural credit cooperatives. There were around 600 urban credit cooperatives still in operation at the end of 2005, representing a market share of less than 0.60% in terms of branch numbers. Hence, although we include urban credit cooperatives in our analysis as a source of credit for SMEs, the exclusion of their branches when calculating our concentration measures is not likely to change our results substantially. Besides, there is a large population of rural credit cooperatives, trust and investment companies, finance companies, and three policy banks which are designed to provide loans to agriculture, infrastructure, and foreign trade respectively. As these institutions usually do not provide loans to SMEs, we exclude them from our analysis.