

# FRBSF ECONOMIC LETTER

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## Small Business Lending and Bank Competition

Small businesses are a vital part of the fabric of the U.S. economy—according to the Small Business Administration, small businesses employ roughly half of the nation’s workers. So the question of how much bank financing small businesses are able to obtain is of real importance. Indeed, a regard for the volume of lending helps motivate enforcement of antitrust laws in banking. The Department of Justice and the Federal Reserve, which share responsibility for considering the effects of bank mergers and acquisitions on competition in local banking markets, do so, in part, because theory says that more competition generates more lending. In this *Economic Letter*, I examine what the data say about the relationship between the degree of competition in small business lending in local geographic banking markets and the total volume of small business lending in those markets.

### How competition could matter

The traditional theory of industrial organization—“Structure, Conduct, Performance” (SCP)—is the foundation of antitrust enforcement in banking as well as in other areas, and it argues that greater competition is associated with greater supply and lower prices. In markets with little or no competition—that is, with market power concentrated in only one or just a few producers—prices are higher and lower quantities are sold, compared to more competitive markets. In the context of bank lending to small businesses, SCP would say that greater competition is associated with higher small business loan volumes and lower small business loan interest rates.

But Petersen and Rajan (1995) identify a countervailing aspect of small business lending competition. They model a “relationship effect” in which an increase in banks’ market power—that is, less competition—also increases their ability to form lending relationships with young firms, which typically have relatively uncertain prospects. Specifically, banks with more market power can afford to offer low interest rates to young firms because the banks

can raise the rates when those firms are old without losing their business. Low interest rates are important because they are compatible with prudent behavior. Interest rates that are too high increase “moral hazard”—firms take bigger risks with the bank’s money in order to have a chance of paying back the high-priced loans and retaining some profit for themselves. The implication of this view of competition is that any observed correlation between banks’ market power and the amount of small business lending by banks could be influenced by the extent of new relationships between banks and small businesses at a point in time.

Empirical studies usually use market concentration, as measured by the Hirschman–Herfindahl index (HHI), as an indicator of the level of competition in a market. The HHI is simply the sum of the squares of the market shares of firms in a market. For example, a market consisting of four firms with market shares of 30%, 30%, 20%, and 20%, has an HHI of 2,600. HHIs for local small business lending markets in urban areas in the U.S. averaged about 1,500 over the years 2003–2005. Lower HHIs denote stronger competition. To see this, note that, given equal market shares, the HHI decreases as the number of lenders increases. Furthermore, with a fixed number of lenders, the HHI decreases as the distribution of market shares across firms in the market evens out.

Previous studies in banking outside of small business lending have tended to support SCP. For example, Berger and Hannan (1989) found that higher concentration was associated with lower deposit interest rates, and Rhoades (1992) found an association with higher mortgage interest rates.

In contrast, research results are more ambiguous on the average effects of decreases in competition on small business lending per se across local markets, in line with the possible existence of SCP and relationship effects. In particular, Petersen and Rajan (1995) found that, if a small business was

young enough, increases in the concentration of the banking market in which the firm was headquartered reduced the firm's loan interest rate, but that, if it was older, increases in concentration increased its loan interest rate. This suggests that if a small business is young enough, increases in concentration increase its loan amount, but that if it is older, the loan amount falls. This result does not tell us, however, whether, on average, increases in competition in a banking market would be expected to be associated with increases or decreases in small business loan volume in the market as a whole. For that, one needs to do empirical work at the banking market level.

### The evidence at first glance

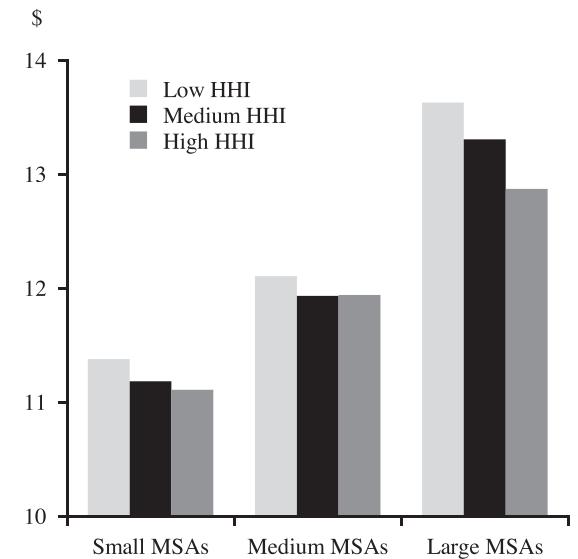
At a superficial level, at least, analysis of data from 2003 through 2005 on bank small business lending and market concentration across urban areas suggests that increases in competition may mean more lending. The data used in the analysis are from reports that banks file in compliance with the Community Reinvestment Act. The assignment of a loan to a given metropolitan statistical area (MSA) is based on the location of the small business borrower. The banks extending the loans may not have offices in the MSA, though most small business lending is accounted for by banks with offices in the MSA of the borrowing firm.

Figure 1 plots the log of the average volume of bank small business loans against the level of market concentration for small, medium, and large MSAs. Market concentration is measured by the HHI. The size of MSAs is measured by the number of small businesses in the MSA. The figure shows that for all sizes of MSAs, average loan volumes tend to decline as HHIs increase, most notably for large MSAs. However, it would be premature to conclude from this evidence alone that more competition tends to imply more lending. For example, even within MSA size categories, higher HHIs may be associated with lower loan volumes simply because higher HHIs are associated with fewer small businesses.

### A closer look

To evaluate the relationship between competition and lending more carefully, I conducted a regression analysis to control more finely for MSA size, both in terms of the number of small businesses and the population (see Laderman 2007 for a more complete analysis and discussion). The regression also controlled for other variables that may influence small business loan volume, such as general

**Figure 1**  
Average small business loan volume (in logs)



economic conditions of the MSA, as measured by employment growth. The concern here is that MSAs with strong economic growth, for example, may be associated with both a high level of demand for loans from small businesses (anticipating their own growth) and a high level of entry into the market by lenders, which would tend to reduce the HHI. Such analysis reduces the chance that any positive statistical correlation between loan volumes and concentration is due to this kind of channel. From a policy standpoint, we do not care if higher levels of competition are associated with higher levels of *demand* for bank loans, only if they are associated with higher levels of *supply*.

The analysis focused on the period 2003–2005 and showed that, on average, across MSAs, increases in market concentration were correlated, although relatively weakly, with decreases in small business loan volume. The results suggested that, on average, a merger between two banks, each with about 10% of the small business loan volume in the market, would be associated with about a 0.6% decrease in small business loans in the MSA. Lending credence to these results, the coefficients on the control variables had the expected signs, and most also were statistically significant. For example, the regression results indicated that both the number of small businesses and population had positive and highly statistically significant effects on loan volume.

To test the Peterson and Rajan hypothesis, the analysis also looked at the effect of firm age on the

relationship between competition and small business loan volume. Consistent with their findings, the results show that, as the proportion of young firms in the MSA increases, the marginal effect of an increase in concentration on the volume of small business lending becomes less negative and eventually turns positive. In particular, using owner tenure to measure firm age, concentration increases the volume of small business lending if more than about 13% of the small businesses have a current owner tenure of less than five years.

### Possible qualifications

Despite the controls included in the regression for the employment growth of the MSA, it is possible that the positive statistical relationship between competition and small business lending is not meaningful for policy and merely is an artifact. For example, the regression may have omitted other aspects of an MSA's economy that can both increase the demand for small business loans and increase the level of competition in bank small business lending, with no implications for how competition and the supply of loans are related.

However, the results for MSAs overall discussed here are consistent with those of another study done at the MSA level that is not subject to the same caveat. Cetorelli and Strahan (2006) study the effect of bank competition on the number and size distribution of firms within industries. They find that, across MSAs, for industries that depend on external sources of finance, increases in bank competition are associated with increases in the proportion of total firms in that industry that are small. The authors used an empirical design that allowed them to net out from this result any possible spurious factors common to MSAs and the level of bank competition within those MSAs. The authors did not examine the effect of competition on small business loan volumes explicitly. But, it is reasonable to suppose that a greater proportion of small firms in an industry in one MSA than in the same industry in a second

MSA may be the result of greater bank funding for small firms in that industry in the first MSA.

### Conclusion

For MSAs as a whole, greater small business lending competition appears to be associated with greater small business loan volume. This result controls for the sizes of the MSAs, both in terms of population and the number of small businesses. Underlying the result for MSAs as a whole appear to be opposite results for younger versus older small businesses, with the results for the older small businesses dominating the overall result.

A positive association between competition and lending is consistent with the empirical results of studies of other areas of banking done at the MSA level and is consistent with the traditional theory that is the foundation of all antitrust enforcement, which holds that greater competition reduces prices and increases supplies.

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