Has Multi-Market Banking Changed the Response of Small Business Lending to Local Economic Shocks?

By William R. Keeton

The consolidation of the U.S. banking industry has greatly increased the importance of large multi-market banking organizations relative to smaller, single-market banks. Economists have conducted many empirical studies of the effects of this shift, including the impact on the competitiveness of banking markets, the volume of small business lending, and the safety and soundness of the banking system. An issue that has not received as much attention is how multi-market banking has affected the response of local bank lending to local economic shocks. When an area is hit particularly hard by a recession, is bank lending now more likely to decline in the area, exacerbating the downturn? Or is bank lending now more likely to remain unchanged, moderating the downturn? The answer is important to local communities because it affects the volatility of their output and employment. But it is also important to the national economy, because the distribution of credit across markets can affect overall productivity and growth.

In principle, the shift to multi-market banking could either increase or decrease the sensitivity of bank lending to local economic shocks. On the one hand, the ability of multi-market banks to shift funds to offices

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in other markets could make these banks more prone to reduce local lending when a slowdown in the local economy decreases the creditworthiness or credit demands of local borrowers. On the other hand, the diversification and capital-market access of multi-market banks could make them better able to continue funding local loans when a local economic downturn reduces the availability of funds from depositors or decreases bank capital. Moreover, while multi-market banks may be better able to shift lending from slumping markets to thriving markets, two factors could deter them from making such a shift—a greater ability to cope with increases in the risk of local lending, and a lesser ability to identify and react to changes in local economic conditions.

Because the impact of multi-market banking is ambiguous in theory, the only way to determine how the sensitivity of bank lending to local economic shocks has been affected is to examine the data. Until recently, such empirical studies have been hampered by the lack of data on bank lending at the local level. In the mid-1990s, a new source of data on local lending to small businesses became available as part of the Community Reinvestment Act (CRA), a law enacted a decade earlier to encourage banks to lend to their local communities. This article uses the new data to examine the impact on local lending of the slowdowns in some local economies during the 2001 recession and recovery. The basic approach is to see whether these slowdowns had a different effect on lending by single-market banks than on lending by multi-market banks. The article finds substantial support for the view that the shift to multi-market banking has reduced the overall sensitivity of bank lending to local economic shocks. The article also finds some evidence that this effect may be due to a lesser ability of multi-market banks to identify and respond to changes in local economic conditions.

The first section of the article documents the sharp increase in the importance of multi-market banking over the last two decades. The second section discusses the different effects that multi-market banking could have on the response of bank lending to local economic shocks. The next section describes the new CRA data on local lending to small businesses and explains why the 2001 recession and recovery provide a good opportunity to examine the impact of multi-market banking on such lending. The third section describes the specific approach used to investigate the impact of multi-market banking and presents the main findings. The last section discusses the implications of the findings.

I. THE SHIFT TO MULTI-MARKET BANKING

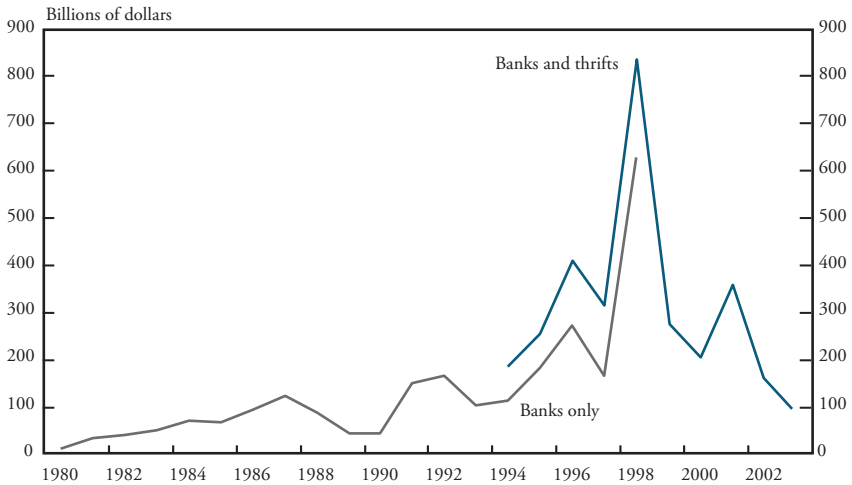
The U.S. banking industry has undergone significant consolidation during the last three decades. The merger wave began in the 1980s, as barriers to geographic expansion were gradually relaxed (Chart 1). At the beginning of the period, some states still prohibited banks from operating branches throughout the state, and some even prohibited bank holding companies from acquiring additional banks in the state. In addition, all states banned acquisition of banks by out-of-state holding companies. By the early 1990s, most of the states that had restricted intrastate expansion had dropped those restrictions, and almost all 50 states had passed new laws permitting acquisitions of banks by out-of-state companies. Such deregulation led to a gradual increase in merger activity, with the volume of assets acquired in bank mergers rising from $10 billion in 1980 to over $160 billion in 1992.

The process of geographic deregulation culminated with the passage by Congress of the Riegle-Neal Act of 1994. This act not only authorized out-of-state acquisition of banks in all states but also allowed banks to operate out-of-state branches. Thus, for the first time, multi-bank holding companies with separately incorporated banks in different states were able to merge the banks into a single institution with out-of-state branches.[1] Most banking companies viewed out-of-state branches as more efficient and cost effective than out-of-state bank subsidiaries. Thus, even though most states already allowed acquisitions of banks by out-of-state companies, the Riegle-Neal Act made interstate mergers among banking companies more attractive, contributing to the surge in merger activity in Chart 1 in the second half of the 1990s. Although not shown in the chart, the authorization of interstate branching also led to a surge in *intracompany* mergers—in particular, mergers among banks belonging to the same holding company but headquartered in different states.

An important effect of the merger wave has been a sharp increase in the importance of multi-market banking—the concentration of banking activity in geographically dispersed organizations with operations in multiple markets. The first three columns of Table 1 provide three alternative measures of this shift toward multi-market banking for the period from 1990 to 2007. Examples are provided in the accompanying box. The data are for metropolitan areas, which the Census Bureau defines as areas with a central city of at least 50,000 people.[2]

Chart 1

ASSETS ACQUIRED IN BANK AND THRIFT MERGERS, 1980-2003



Note: Excludes mergers among banks and thrifts in the same holding company.
Source: Rhoades for banks only; Pilloff for banks and thrifts

Table 1

PERCENT OF METRO-AREA DEPOSITS IN DIFFERENT TYPES OF BANKING OFFICES, MIDYEAR

	Offices located in a different market than organization HQ	Offices located in a different market than bank HQ	Offices located in a market with less than half of org. deposits	Subordinate offices (those meeting all three conditions)
1990	38.8	20.2	46.7	19.3
1995	48.3	27.5	55.4	26.1
2000	55.0	42.0	60.8	39.0
2005	57.6	52.4	66.4	45.5
2007	60.1	54.5	69.8	45.9
Total change (percentage points)	21.4	34.3	23.1	26.6

Note: Data are for commercial banks and thrifts. The Census Bureau's 2003 definitions for metropolitan areas are used for the entire period.
Source: Summary of Deposits, National Information Center Database

MEASURES OF MULTI-MARKET BANKING

The three different measures of multi-market banking in Table 1 can be best explained by example. Suppose that XYZ Bancorp, based in Charlotte, North Carolina, owned a separately incorporated bank, ABC Bank, based in Kansas City, Missouri. Then ABC's offices in Kansas City would be located in the same market as the bank's headquarters (Kansas City) but a different market than the organization's headquarters (Charlotte). As a result, the deposits of ABC Bank's branches in Kansas City would be included in the first column of Table 1 but not the second.

Suppose next that XYZ Bancorp owns another bank, XYZ Bank, also based in Charlotte, North Carolina, and decides to merge ABC Bank into XYZ Bank. Then, after ABC Bank became a branch of XYZ Bank, the Kansas City offices that XYZ Bank acquired from ABC Bank would be located in a different market than both the bank's headquarters (Charlotte) and the organization's headquarters (also Charlotte). As a result, the deposits of XYZ Bank's newly acquired offices in Kansas City would be included in both the first and second columns of Table 1. If these deposits also represented less than half of XYZ Bancorp's total U.S. deposits, then they would be included in the third column as well. In this case, XYZ Bank's newly acquired offices would satisfy the definition of subordinate offices used in this article.

Consider finally the deposits in the Charlotte offices of XYZ Bank. These offices would be located in the same market as both the bank and the organization. As a result, the deposits would not be included in the first or second column of Table 1. If the deposits accounted for less than half of XYZ Bancorp's total U.S. deposits, they would be included in the third column. However, the Charlotte offices of XYZ Bank would still not meet the definition of subordinate offices, due to their location in the same market as the bank and organization headquarters.

The three measures of multi-market banking are all based on the deposits held at home and branch offices of banks and thrifts, because these data are the only data on local banking activity available over an extended period of time. The first column of the table shows the percent of total metro-area bank and thrift deposits held in offices located outside the market in which the *organization* is headquartered. In this article, organizations are defined as bank or thrift holding companies and independent banks or thrifts. In contrast, the second column shows the percent of total metro-area deposits held in offices located outside the market in which the bank is headquartered (the term "bank" is often used in this article to refer to both commercial banks and thrifts). The third column of the table shows the percent of deposits held in offices located in markets that are not a dominant source of deposits for the organization. In many cases, for example, the home office of a large multi-market banking organization will hold only a small fraction of the organization's total deposits. The deposits of these home offices would usually be included in the third column of Table 1, but not the first and second columns.

The three measures in Table 1 represent three different aspects of multi-market banking, each of which could affect the response of small business lending to changes in local economic conditions. An increase in the share of deposits held outside banking organizations' home markets indicates a lengthening of managerial lines of control between holding companies and their banking offices. To the extent lending decisions are made at the holding company level, such a change in organizational structure could reduce the response of small business lending to changes in local economic conditions. Similarly, an increase in the percent of deposits held outside banks' home markets represents a lengthening of managerial lines of control between banks and their branches. If many lending decisions are made at the bank level, such a change in organizational structure could also limit the response of small business lending to changes in local economic conditions. Finally, the percent of deposits held in markets with less than half of an organization's total deposits provides a more direct measure of geographic diversification in banking. The higher this measure, the less vulnerable banking organizations should be to local shocks to deposits, loan demand, or borrower creditworthiness.

All three measures of multi-market banking show a sharp increase in multi-market banking from 1990 to 2007. The share of metro-area deposits outside organization headquarters rose from 38.8 percent in 1990 to 60.1 percent in 2007, an increase of 21 percentage points. The share of deposits located in markets with less than half of organization deposits increased by a similar amount, rising 23 percentage points from 1990 to 2007. However, the biggest change was in the share of deposits located outside bank headquarters. This measure rose from only 20.2 percent at the start of the period to 54.5 percent at the end, an increase of 34 percentage points. Not surprisingly, the measure rose by a particularly large amount from 1995 to 2000, when the Riegle-Neal Act led many multi-state banking organizations to convert their out-of-state banks to out-of-state branches of the lead bank.

The last column in Table 1 reports the overall measure of multi-market banking that will be used in the remainder of the article—the percent of deposits in "subordinate" offices. These are offices located in a different market than both the organization headquarters and the bank headquarters and in a market accounting for less than half of the organization's total deposits. The term "primary" offices will be use to refer to all other offices—those located in the same market as the organization or bank headquarters or in a market accounting for at least half of the organization's total deposits. Like the first three measures of multi-market banking, the share of metro-area deposits in subordinate offices increased sharply over the period. Specifically, the deposit share of such offices rose from 19.3 percent in 1990 to 45.9 percent in 2007, with half of the increase occurring in the second half of the 1990s.

II. HOW MULTI-MARKET BANKING COULD CHANGE THE RESPONSE OF BANK LENDING TO LOCAL ECONOMIC SHOCKS

There are several ways the increase in multi-market banking documented in the previous section could affect the responsiveness of bank lending to local economic shocks. As noted in the introduction, the net result could be to make lending to small businesses either more sensitive to local shocks or less sensitive. A useful way to categorize such shocks is according to whether they affect the supply of loans by banks

(supply-side shocks) or the demand for loans and creditworthiness of borrowers (demand-side shocks).

Supply-side shocks. Some economists have noted that the spread of multi-market banking could make bank lending less responsive to those local economic shocks that reduce banks' ability to supply loans. Examples of such shocks include a decrease in local incomes that reduces the availability of funds from local depositors, or an increase in local loan losses that reduces the amount of capital that banks have to support their lending. Large multi-market banks tend to have greater geographic diversification and greater access to capital markets than small single-market banks. The geographic diversification of multi-market banks helps protect them from unusually large loan losses and deposit declines in some of the markets in which they operate. Faced with such shocks, single-market banks in these markets may be forced to sharply curtail their lending. In contrast, a multi-market bank may be able to maintain lending in these markets. First, the bank's overall capital may not decline very much if loan performance in other markets remains strong. And second, the bank may be able to offset the loss of deposits in slumping markets by shifting funds from the other markets in which it operates. Because of their greater diversification and size, multi-market banks also tend to enjoy greater access to capital markets. This ability to raise funds on capital markets is another factor making it easier for multi-market banks to maintain lending in markets hit by unexpected declines in deposits or capital-depleting increases in loan losses.[3]

Demand-side shocks. As explained above, the geographic diversification of multi-market banks tends to make their lending less sensitive to local supply shocks. But geographic diversification can also make lending of these banks *more* responsive to local demand shocks—those that reduce local borrowers' creditworthiness or demand for loans. When such shocks reduce the expected profitability of local lending, multi-market banks will generally find it easier than single-market banks to shift their lending to other markets in which the expected profitability of lending has remained unchanged or increased. To be sure, single-market banks may respond to a decrease in the expected profitability of local lending by shifting into other earning assets, such as government securities. But these banks are not likely to reduce local lending as much as multi-market banks that have the additional option of lending

in other markets.[4] Another reason single-market banks may not reduce lending as much as multi-market banks in response to adverse demand-side shocks is that they have put more effort into developing long-term relationships with local business customers. By continuing to lend to such a customer during hard times, a bank can help preserve its investment in the relationship.[5]

While lending by multi-market banks is usually viewed as more responsive to local demand-side shocks, two factors could cause their lending to be *less* responsive to such shocks. In some cases, the most important effect of a downturn in the local economy may be to increase the risk of local lending—that is, the variability of the return to such lending. Multi-market banks may be better able to tolerate such an increase in local risk than single-market banks, because multi-market banks can offset losses in one market with profits in other markets. As a result, multi-market banks may be less prone than single-market banks to respond to the increase in risk by reducing lending in the market.[6]

Another, quite different reason why multi-market banking organizations may be slower to adjust their lending to adverse demand-side shocks is that they are less attuned to the local economy than single-market banks. Some economists argue that large multi-market banks are not well suited to collecting "soft" information about business borrowers, such as information about the borrower's character.[7] Instead, these banks tend to rely on "hard" information, such as financial statements or credit scores. This reliance on hard information may make multi-market banks less able than single-market banks to detect a decline in the creditworthiness of local borrowers.[8] The hierarchical structure of large multi-market banks may also make it harder for these banks to react quickly to changes in local economic conditions than a single-market bank whose loan officers report directly to the head of the bank.[9]

III. A NEW OPPORTUNITY TO EXAMINE THE RESPONSE OF BANK LENDING TO LOCAL ECONOMIC SHOCKS

The 2001 recession is the first economic contraction in the United States for which comprehensive data have been available on small business lending at the local level. The new data, which are collected as part of the Community Reinvestment Act, are unique in that they identify

both the bank making the loan and the location of the business receiving the loan. The 2001 recession provides a good opportunity to use the new data to test opposing views about multi-market banking by comparing small business lending at different types of banks in the markets most affected and least affected by the downturn. This section first describes the new data and then provides background on small business lending during and shortly after the 2001 recession.

New data on small business lending at the local level

In 1996, regulators began requiring banks to report the geographic distribution of their small business lending as part of the Community Reinvestment Act, a law enacted a decade earlier to encourage banks to meet the credit needs of their communities (Bostic and Canner). From 1996 through 2003, all banks and thrifts were required to file these reports if they had assets of at least $250 million or were owned by a holding company with assets of $1 billion or more. After 2003, the size threshold for independent institutions was increased from $250 million to $1 billion to ease the reporting burden on smaller institutions.[10] In 2003, the last year the smaller size threshold was in effect for both banks and thrifts, about 1,640 banks and 470 thrifts filed reports. According to independent call report data, these institutions accounted for almost four-fifths of the total volume of small business loans outstanding in June of that year (Federal Financial Institutions Examination Council 2004).

Under the CRA regulations, banks and thrifts are required to report all gross originations of small business loans during the year.[11] Gross originations are defined to include extensions of new loans, granting of new credit lines, and refinancings of existing loans. Small business loans are defined as business loans under $1 million in size.[12] They include both commercial and industrial (C&I) loans and loans secured by nonresidential real estate.[13] Most important for purposes of this article, CRA reporters are required to indicate the specific location of each small business loan that they originate. This can be either the census tract in which the borrower's headquarters are located, or the census tract in which the proceeds of the loan are mainly to be used.

The CRA data on small business lending are the first data on small business lending at the local level. Before the advent of interstate

branching, a banking organization's total business lending at the state level could be calculated from call reports—financial reports that all banks and thrifts are required to file with regulators at the end of each quarter. However, in states that allowed intrastate branching, call report data could not be used to measure business lending at the metro level. Also, before 1993, business loans were not broken down by size in the call report, making it impossible to distinguish small business loans from large business loans. After interstate branching began to spread in the second half of the 1990s, call report data could not even be used to identify a banking organization's business lending at the state level, because banks reported only their total loans in all states.

The new CRA data helped fill this gap by providing an annual measure of bank lending to small businesses in narrowly defined geographic areas. The data do have the disadvantage of excluding originations by smaller banks and thrifts—those independent institutions with less than $250 million in assets. Also, because only *gross* originations are reported (that is, loan repayments are not subtracted), the data do not provide an exact measure of the change in small business loans in each location. Despite these limitations, the CRA data on small business lending represent an important advance over previous data, allowing researchers to compare the response of small business lending to local economic shocks at different types of banks.

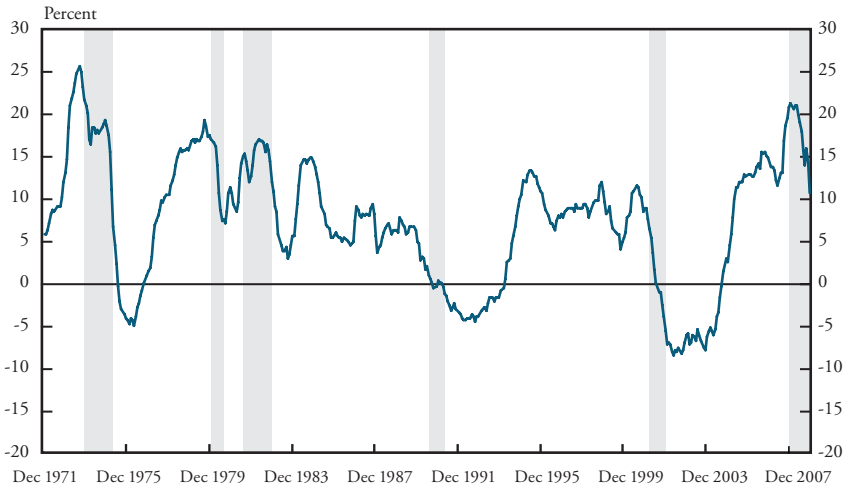
Small business lending in the 2001 recession and recovery

For the nation as a whole, bank loans to businesses typically grow slower during economic contractions. Chart 2 shows year-over-year growth in commercial and industrial (C&I) loans by U.S. banks since the early 1970s. In almost every recession shown, C&I loan growth peaked just before the start of the recession, fell during the recession, and did not turn back upward until after the recession had ended and recovery was under way.

Economists attribute this tendency for business loan growth to slow during and immediately after a recession to the same kinds of supply-side and demand-side shocks discussed in Section II. On the demand side, many businesses experience slower growth in sales during economic contractions, reducing their demand for credit to finance inventory accumulation and investment in new plant and equipment.

Chart 2

YEAR-OVER-YEAR GROWTH IN C&I LENDING BY U.S. COMMERCIAL BANKS



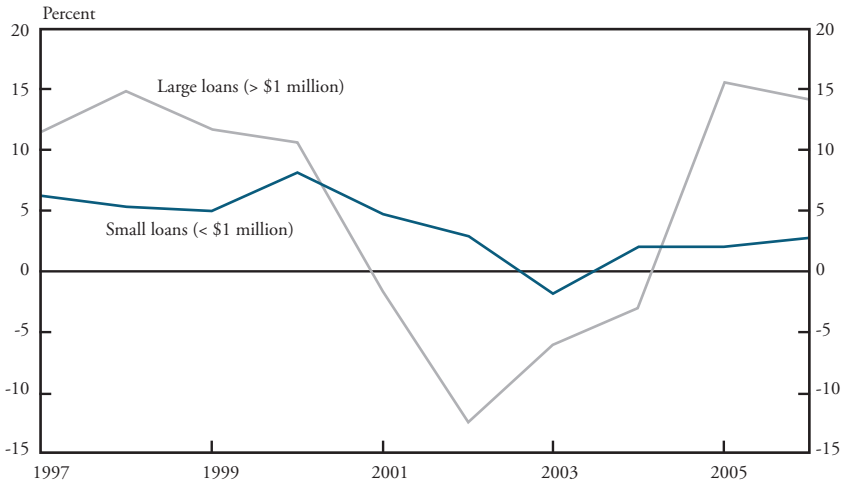
Note: Shaded areas are recessions.
Source: Board of Governors, H.8 Release

The slowdown in sales also reduces businesses' profits. This decline in profits makes it harder for businesses to repay their loans, decreasing the attractiveness to banks of new lending. On the supply side, an economic contraction can also make it harder for banks to fund loans to businesses. Declines in employment and income usually reduce the public's demand for deposits, which many banks depend on as a source of funds. In addition, decreases in incomes and profits may cause more consumers and businesses to default on their existing loans, reducing the capital that banks have available to support their lending.

In principle, these shocks to loan demand and loan supply during an economic contraction should affect lending to both small businesses and large businesses. Until recently, there was not sufficient data to say for sure whether an economic contraction affected lending to small businesses more than bank lending to large businesses. However, from data that banks began reporting to regulators in 1993 on their business loans outstanding by size of loan, it is possible to separate out the effect of the 2001 recession on small business lending from the effect on large business lending.

Chart 3

GROWTH IN SMALL AND LARGE C&I LOANS AT U.S. COMMERCIAL BANKS, JUNE-OVER-JUNE



Source: Board of Governors (1997, 2002, 2007)

Chart 3 compares growth of small and large C&I loans at all U.S. banks. As in the CRA data on small business lending, small loans are defined as those under $1 million in size, while large loans are defined as those over that amount. The chart confirms that growth in both small and large C&I loans fell during and after the 2001 recession, implying that the slowdown had the expected negative effect on both small and large business lending. The chart also shows that growth in small business loans slowed less than growth in large business loans. The smaller decline in small business loan growth is consistent with other evidence that the 2001 recession had a milder-than-usual effect on small businesses.[14] For the purposes of this study, however, the important point is that growth in small business loans did decline during and immediately after the 2001 recession. This fact suggests that insight into the impact of multi-market banking can be gained by comparing the change in small business loan growth at different types of banks in the markets most affected and least affected by the economic downturn.[15]

IV. METHODOLOGY AND RESULTS

Does the behavior of CRA loan originations during and after the 2001 recession suggest that multi-market banking is changing the response of small business lending to local economic shocks? This section first explains the method used to answer this question and then presents the results.

Using the CRA data to investigate the impact of multi-market banking

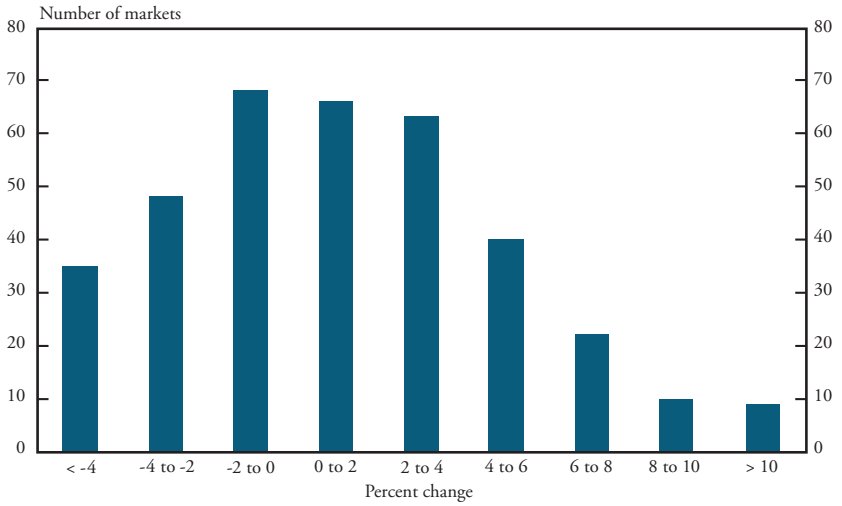
To determine if multi-market banking has changed the response of small business lending to local economic shocks, this article uses a "differences-in-differences" approach. The idea is to calculate the difference in loan growth between the markets most affected and least affected by the 2001 recession and then see if this difference in loan growth is greater for one type of banking office than the other.

Distinguishing between different types of offices. It was noted earlier that the growth of multi-market banking has been reflected in a sharp increase in the importance of subordinate banking offices relative to primary offices. Subordinate offices, it will be recalled, are those located in a different market than both the bank and organization headquarters and in a market accounting for less than half of the organization's deposits. Primary offices consist of all other offices—those located in the same market as the bank or organization headquarters or in a market accounting for at least half of the organization's deposits. The impact of multi-market banking will be assessed by comparing the effect of slower economic growth on growth in loan originations at these two types of offices.[16]

Calculating growth in loan originations. To calculate growth in originations at subordinate and primary banking offices in each market, the data first had to be adjusted for several factors that could artificially boost such growth. These factors include nonreporters becoming reporters, reporters merging with nonreporters, and reporters merging with each other. The originations data for each reporter were adjusted for these factors using the methods described in the appendix.[17] The current and previous-year originations of each reporter were then summed by market and type of banking office in the current year (subordinate vs. primary). The final step was to use this data to calculate the year-

Chart 4

DISTRIBUTION ACROSS METRO AREAS OF PERCENT CHANGE IN EMPLOYMENT, 2000-2003



Note: Employment is wage and salary employment plus proprietors employment.
Source: Bureau of Economic Analysis, Department of Commerce

over-year growth in originations for each market, each type of banking office, and each year during the 2001 recession and recovery.

Distinguishing between markets with high and low economic growth. The 2001 recession and recovery are commonly defined to include the years 2001, 2002, and 2003.[18] Chart 4 shows that the slowdown affected the 361 metropolitan markets in the U.S. quite differently. At one extreme, 83 metro areas suffered a total drop in employment greater than 2 percent from 2000 to 2003. But at the other extreme, 81 metro areas enjoyed a total employment gain of more than 4 percent over the period.[19] To isolate the effect of slowing economic growth on growth in loan originations, the 361 metro markets were divided into two groups—the "low-growth" markets, in which 2000-2003 employment growth was below the median of 0.74 percent, and the "high-growth" markets, in which 2000-2003 employment growth was above 0.74 percent.

For each market and each type of banking office for which data were available, total 2000-03 growth in loan originations was computed by summing the year-over-year growth in originations for 2001, 2002, and 2003.[20] Total 2000-03 growth in deposits was computed

the same way. For each type of banking office, growth in employment, deposits, and originations was then averaged across all low-growth markets for which data were available and across all high-growth markets for which data were available. These numbers are reported in Table 2. For each type of banking office, Table 2 also indicates the number of high-growth markets and the number of low-growth markets for which 2000-03 growth in deposits and originations could be computed.[21]

What the CRA data show about the impact of multi-market banking

The main finding from the 2000-03 data is that slow growth in the local economy was associated with lower growth in loan originations at primary banking offices, but *not* at subordinate banking offices. The top three rows of Table 2 show that at subordinate banking offices, deposit growth was 2.0 percentage points lower in markets with low job growth than in markets with high job growth. This result is consistent with the idea that the supply of local deposits varies with local income. However, growth in loan originations at subordinate offices was virtually the same in markets with low job growth as markets with high job growth. The next three rows of the table show that slower economic growth was also associated with lower deposit growth at primary banking offices—1.4 percentage points. But in contrast to subordinate banking offices, slower economic growth was also associated with significantly slower growth in loan originations at these offices—5.4 percentage points. Thus, slower economic growth had a much bigger effect on growth in small business loan originations at primary offices than at subordinate offices. As indicated in the last row, the difference in differences is 5.2 percentage points, which is both large and statistically significant.[22]

The different lending response at the two types of offices supports the view that multi-market banking decreases the sensitivity of bank lending to local economic shocks. As noted in Section I, the shift to multi-market banking has been reflected in a sharp increase in the importance of subordinate banking offices relative to primary offices. But Table 2 implies that small business lending is less responsive to local economic shocks at subordinate offices than primary offices. Thus, the net effect of the shift to multi-market banking should be to reduce the overall sensitivity of small business lending to local economic shocks.

Table 2

GROWTH IN DEPOSITS AND SMALL BUSINESS LOAN ORIGINATIONS, 2000-2003

(By type of banking office)

	Average job growth	Average growth in deposits	Average growth in CRA originations
Subordinate banking offices			
Markets with high job growth (179)	4.3	3.7	11.1
Markets with low job growth (179)	-2.3	1.7	10.9
Difference (percentage points)	6.6	2.0***	0.2
Primary banking offices			
Markets with high job growth (116)	4.0	8.6	14.9
Markets with low job growth (132)	-2.4	7.2	9.5
Difference (percentage points)	6.4	1.4*	5.4***
Difference in differences		-0.6	5.2***

Note: Subordinate banking offices are offices located in a different market than both bank and organization headquarters and in a market accounting for less than half of the organization's total deposits. Primary offices are all other offices. The growth rates in the table are arithmetic averages across markets of the cumulative 2000-2003 growth rates. For each market, the cumulative 2000-2003 growth rate is the sum of the annual growth rates expressed in log form (100 x difference in log levels). Observations on a market and type of banking office are included only if the growth in originations is available for all three years. For each market and year, organizations with extreme positive or negative growth rates for CRA originations are omitted from the data. Data are for metro areas only. See text for further details.

* Significant at 10 percent level

** Significant at 5 percent level

***Significant at 1 percent level

Some further questions

Table 2 yields important insights into the impact of multi-market banking on local bank lending, but it also leaves some important questions unanswered. Chief among these are the direction of causation between local employment growth and local loan growth, the effect of organization size on the results, and the relative roles of proximity to headquarters and share of organization deposits.

Could causation run from increased lending by primary offices to smaller declines in local economic growth? In the discussion of Table 2, it was assumed that employment growth in each market could be treated as exogenous, in the sense of being uninfluenced by growth in small business loan originations. There is, however, an alternative interpretation of the positive relationship between local employment growth and local

loan growth at primary offices. According to this alternative view, lending by primary offices is especially beneficial to local economic growth, because banks that operate primarily in one market are better able to identify creditworthy borrowers in that market. As a result, markets in which single-market banks decreased lending relatively little in 2000-03 suffered relatively small declines in employment in 2000-03.

This alternative interpretation of the results in Table 2 was investigated by using a different measure of local employment growth that is more likely to be exogenous with respect to local lending to small businesses. This measure is employment growth at very large businesses—specifically, those with at least 500 employees. Such businesses sell primarily to customers outside the local markets in which they are based. As a result, their output and employment are unlikely to be affected by changes in lending to small businesses in the same market. However, job growth at large businesses can have a substantial impact on the availability of deposits in the market through its effect on local income growth. And job growth at large businesses can have a significant effect on the vitality of small businesses in the market through spillover effects. Thus, job growth at large businesses can serve as a good proxy for local supply and demand shocks affecting banks' small business lending decisions, without itself being influenced by those decisions. When this alternative measure of employment growth was used, the results in Table 2 were similar, though not as statistically significant.[23] Thus, the results in Table 2 appear to reflect causation from changes in local economic growth to changes in small business lending at primary offices, rather than the other way around.

How much of the difference between primary and secondary offices is due to the larger size of multi-market organizations? Multi-market banking is much more prevalent among large banking organizations than small ones. As a result, subordinate offices tend to belong to larger organizations than primary offices. In 2000, for example, 64 percent of deposits at subordinate offices were in banking organizations over $50 billion in size, while only 32 percent of deposits at primary offices were in banking organizations that large. This raises the question whether Table 2 is mainly capturing the effect of organization size on local lending behavior, rather than the effect of geographic dispersion.

One way to test this idea is to perform the calculations in Table 2 for different size groups and see if local lending is still more responsive to local economic conditions at primary banking offices than at subordinate offices. Banking organizations were divided into three size groups—less than $10 billion in total assets, $10 to 50 billion in total assets, and greater than $50 billion in total assets (constant 2000 dollars). The comparison between primary and subordinate offices in Table 2 was then repeated for each of the three size groups. The results were very similar to those in Table 2. For example, for organizations under $10 billion in size, the difference in loan growth between markets with high job growth and markets with low job growth was 4.9 percentage points at primary offices, but -0.3 percentage points at subordinate offices. The difference-in-differences between the two types of offices was therefore 5.2 percentage points, a large and statistically significant amount. Thus, the marked difference in lending behavior between primary and subordinate offices in Table 2 does not appear to be due to differences in the size of the organizations to which the two types of office belonged.

Which difference between primary and subordinate offices is more important to the results—proximity to headquarters or share of organization deposits? According to the definition used in this article, primary offices can differ from subordinate offices in two possible ways—by being located in the same market as bank or organization headquarters, or by being located in a market that accounts for more than half of organization deposits. Either factor could account for the observed difference in lending behavior between primary and subordinate offices. A primary office located in the same market as bank or organization headquarters could enjoy more autonomy in lending decisions, allowing it to respond more quickly to changes in local demand shocks than a typical subordinate office. But a primary office located in a market with more than half of organization deposits would also be less able to draw on offices in other markets for support, making it more vulnerable to local supply shocks than a typical subordinate office.

One way to establish which difference between primary and subordinate offices is more important is to distinguish between two types of primary offices. First are offices located in the same market as the bank or organization headquarters, but in a market accounting for *less* than half of the organization's total deposits. Most of these offices are the home offices of

banks belonging to organizations that operate in many markets. Second are offices located in the same market as the bank or organization headquarters and in a market accounting for *more* than half of the organization's total deposits. Most of these offices are the home offices of banks in organizations operating primarily in one market.[24]

For subordinate offices and each type of primary office, Table 3 reports the same key measures as in Table 2. Specifically, the table shows the difference in average job growth, average deposit growth, and average loan growth between two groups of markets—those with high job growth and those with low job growth. The first row shows these measures for subordinate offices and is identical to the third row in Table 2. The next two rows report the measures for the two types of primary offices. Finally, the last three rows of the table show the differences-in-differences for each pair of office types.

Table 3 suggests that proximity to headquarters is the main reason why small business lending is more responsive to local economic shocks at primary offices than subordinate offices. The second and third rows show that slower economic growth actually had a somewhat smaller effect on loan growth at the second type of primary offices (those located in markets with *more* than half of organization deposits) than at the first type (those located in markets with *less* than half of organization deposits). Specifically, the difference in loan growth between markets with high job growth and markets with low job growth was 5.7 percentage points for the second type of primary office, versus 6.4 percentage points for the first type. Thus, among offices located close to bank or organization headquarters, being in a market with a large share of organization deposits *did not* make lending more responsive to local economic shocks. Furthermore, the first and second rows show that slower economic growth had a much bigger effect on loan growth at the first type of primary office than at subordinate offices—6.4 percentage points versus 0.2 percentage points.[25] Thus, among offices located in markets with a small share of organization deposits, being close to bank or organization headquarters *did* make lending more responsive to local economic shocks. Taken together, the results suggest that lending is more responsive to local economic shocks at primary offices mainly because these offices are close to bank or organization headquarters, and not because many of them are in markets with a large share of organization deposits.[26]

Table 3

DIFFERENCE IN GROWTH OF DEPOSITS AND SMALL BUSINESS LOAN ORIGINATIONS, 2000-2003

Markets with high job growth vs. markets with low job growth
(By type of banking office)

	Difference in average job growth	Difference in average deposit growth	Difference in average loan growth
1) Subordinate banking offices	6.6	2.0***	0.2
2) Primary banking offices			
a) Located in same market as bank or org. HQ and in market with *less* than half of org. deposits	6.0	1.1	6.4***
b) Located in same market as bank or org. HQ and in market with *more* than half of org. deposits	6.2	1.0	5.7***
Differences in differences			
2b) minus 2a): effect of greater share of org. deposits		-0.2	-0.7
2a) minus 1): effect of greater proximity to headquarters		-0.8	6.2***
2b) minus 1): effect of greater share of org. deposits and greater proximity to headquarters		-1.0	5.5***

Note: Subordinate banking offices are offices located in a different market than both bank and organization headquarters and in a market accounting for less than half of the organization's total deposits. Primary offices are all other offices. Growth rates are calculated as in Table 2.

* Significant at 10 percent level
** Significant at 5 percent level
***Significant at 1 percent level

V. IMPLICATIONS FOR THE COSTS AND BENEFITS OF MULTI-MARKET BANKING

The main finding of this article is that slower economic growth caused small business lending to fall less at subordinate offices than primary offices during the 2000-03 recession and recovery. The discussion in Section II of the possible effects of multi-market banking on local lending behavior suggests three possible explanations for this result. The first two explanations imply that multi-market banking has substantial economic benefits, but the third implies that multi-market banking may have some economic

costs. This section reviews the three possible explanations for the article's main finding and argues that the evidence at the end of the previous section supports the less benign explanation.

The first possible explanation for the unresponsiveness of small business lending at subordinate offices is that multi-market banks are better able to cope with local supply-side shocks. According to this view, decreases in local deposits or reductions in capital due to local loan losses need not force banks operating mainly in other markets to cut back on lending. The reason is that these banks can shift funds from the other markets or raise funds on the capital markets. If this explanation for the article's main result were correct, a shift to multi-market banking would benefit both the national economy and local communities. The allocation of credit in the economy would be improved, because businesses with profitable investment opportunities would continue to receive credit in markets experiencing declines in deposits or bank capital. Local communities would also benefit, because the greater stability of bank lending would lead to greater stability in local economic activity.

The second possible explanation for the unresponsiveness of small business lending at subordinate offices is that multi-market banks are better able to tolerate an increase in the risk of local lending. When a market experiences an economic downturn, the profits from lending to small businesses in that market may become more variable. Banks with widely dispersed operations will be less concerned about such an increase in local lending risk and thus less disposed to cut back lending in the market. Like the first explanation, this explanation suggests that a shift to multi-market banking would be beneficial. The allocation of credit would be more closely tied to the expected profitability of lending in each market, and local communities would be less subject to destabilizing changes in bank lending.

The last possible explanation for the unresponsiveness of small business lending at subordinate offices is less benign. According to this story, offices far removed from bank headquarters are either unable to detect changes in the creditworthiness of local borrowers, or not allowed to use such information in making loan decisions. To be sure, setting uniform lending policies based on hard information could make sense for a widely dispersed banking organization. Such an approach might reduce the bank's costs of lending and help ensure that loan officers at distant

branches act in the bank's interests. If the reduction in costs were great enough, such a lending strategy could even increase the total supply of credit to small businesses. Nevertheless, this last explanation for the unresponsiveness of small business lending at subordinate offices suggests a possible cost of multi-market banking. Specifically, when a demand-side shock reduces the expected profitability of lending in a market, lending may not fall as much as it should, because multi-market banks operating there either fail to recognize or fail to respond to the shock.

Which of these three stories is correct? Although this article cannot provide a definitive answer, the evidence presented at the end of the previous section provides some support for the last explanation. The first two explanations are based on the idea that subordinate offices benefit from belonging to geographically diversified banking organizations. According to both these stories, the main factor affecting the response of local lending to local economic shocks should be the share of the market in the organization's total operations. If an office is located in a market accounting for a small share of total operations, the office should be better able to draw on the support of offices in other markets in the event of an adverse supply shock. And if lending risk increases in the market, the parent organization should be more willing to allow the office to continue lending, because losses in that market can be offset by profits in other markets. But Table 3 showed that the main reason lending is more responsive to local economic conditions at primary offices than subordinate offices is *not* because primary offices are more likely to be located in markets representing a large share of the organization's total operations. Instead, the greater responsiveness of lending at primary offices is due to the fact that these offices, unlike subordinate offices, tend to be located in the same market as bank or organization headquarters. This evidence is more consistent with the last of the three stories, which predicts that offices located close to bank or organization headquarters will be better able to identify and respond to adverse demand shocks.

VI. CONCLUSIONS

The rapid pace of bank mergers over the last two decades has led to a substantial increase in the importance of multi-market banking organizations. A key question is how this phenomenon has affected the sensitivity of local bank lending to local economic shocks. This

question has been discussed on a theoretical level but has not been the subject of extensive empirical study due to the unavailability of data on bank lending at the local level. This article helps remedy this deficiency by using new data associated with the Community Reinvestment Act to examine local lending to small businesses during the 2001 recession and recovery.

The basic approach of the article is to compare the effect of slower economic growth on small business lending at two types of banking offices—primary and subordinate. Primary offices are those located in the same market as bank or organization headquarters or in a market accounting for a major share of the organization's total operations. These offices are the offices that dominated the U.S. banking system before the advent of multi-market banking. Subordinate offices are those located in the same market as bank and organization headquarters and in a market accounting for a small share of the organization's total operations. These are the offices that have grown most rapidly as multi-market banking has spread.

The main finding of the article is that slow growth in the local economy reduced small business lending at primary offices but not subordinate offices. This finding supports the view that multi-market banking is reducing the sensitivity of local lending to local economic shocks. In principle, the unresponsiveness of local lending at subordinate offices could reflect the greater ability of multi-office banks to offset local shocks to deposits and bank capital. Or it could reflect a greater tolerance of multi-market banks for increases in local lending risk. In either case, the implications of multi-market banking would be favorable both for the allocation of credit across markets and the stability of local economic activity. However, the unresponsiveness of local lending at subordinate offices could also reflect an inability of multi-office banks to detect or respond to changes in credit conditions in distant markets. In that case, multi-market banking could end up distorting the allocation of credit across markets. In support of the last explanation, this article found that proximity to bank or organization headquarters was the main reason for the difference in lending behavior between primary and subordinate offices. Given the importance of the issue, however, further research is clearly warranted.

APPENDIX

This appendix explains how the CRA originations data were adjusted to correct for various factors that could distort growth in reported originations. The first potential distortion is from smaller banks and thrifts growing and passing the $250 million size threshold for CRA reporters. Such an increase in the number of reporters would artificially boost measured growth in originations. The second distortion is from CRA reporters acquiring institutions that were originating small business loans before the merger but were not large enough to be reporters. Such acquisitions would also artificially boost growth in originations, because the originations of the acquired offices would only be included in the data after the merger.[27] The last potential distortion is from mergers between institutions that are both CRA reporters. Such mergers would not affect total growth in originations, but they could distort relative growth in originations at primary and secondary banking offices by shifting reported originations from one type of office to the other.[28]

To adjust the originations data for these potential distortions, it was first necessary to estimate small business loan originations by market for each non-reporter that was acquired by a reporter in the next year and for each non-reporter that became a reporter in the next year. These estimates were derived in three steps from bank-level data on small business loans outstanding and branch-level data on deposits. In the first step, bank-level data for CRA reporters with less than $1 billion in assets were used to estimate the average relationship of originations to deposits, small business loans outstanding in the current year, and small business loans outstanding in the previous year. In the second step, branch-level data for the same group of reporters were used to estimate the average relationship between CRA originations and deposits. Finally, the results from the first two steps were combined with data on non-reporters' small business loans outstanding and deposits to estimate their small business loan originations in each market.[29]

After small business loan originations were estimated for non-reporters, the originations data were adjusted for mergers. Specifically, for each acquisition by a CRA reporter—whether of a reporter or of a non-reporter—the originations of the acquired bank in the year before the merger were added to the originations of the acquiring bank in

that year. Reporters' current and previous-year originations were then summed by market and type of banking office in the current year (subordinate vs. primary), so that year-to-year growth in originations could be calculated for each market and type of banking office.[30]

Even with the adjustments described above, growth in originations could be distorted by changes in reporting requirements. Of most concern for this study was the decision in 2001 to allow reporters to treat renewals of small business loans (extensions of maturity) the same way as refinancings—i.e., to include them in originations (Federal Financial Institutions Examination Council 2002, Hannan). Such reporting changes could have a significant effect on overall growth in originations. However, they should not distort comparisons of growth at different types of banks in a particular year, as long as they affect all banks the same way.

ENDNOTES

[1]See Johnson and Rice for a comprehensive explanation of the Riegle-Neal Act and its impact on interstate branching.

[2]In mid-2007, the 361 metro areas in the U.S. accounted for 88.5 percent of total deposits.

[3]Morgan and others find evidence that the geographic deregulation of banking led to a decrease in state-level business cycle volatility and attribute this change to the ability of large, geographically diversified organizations to withstand local shocks that decrease bank capital. Similarly, Becker finds that geographic deregulation reduced the responsiveness of bank lending to differences in local deposits due to demographic factors—specifically, differences across markets in the percentage of elderly. Finally, a number of studies of multi-bank holding companies (MBHCs) support the view that these companies serve as a source of liquidity and capital to their subsidiaries. For example, Houston and others found that the lending of banks belonging to MBHCs depends more on the capital and cash flow of the holding company than the capital and cash flow of the bank, while Holod and Peek found that MBHCs use both capital transfers and loan sales to re-allocate funds from subsidiaries with high capital to subsidiaries with low capital. In another set of studies, Ashcraft, Campello, and Huang all found that a tightening of monetary policy led to greater decreases in lending at stand-alone banks than at banks with similar characteristics belonging to MBHCs.

[4]A few studies have found evidence that banks belonging to MBHCs are more likely than stand-alone banks to decrease lending in response to decreases in local demand. Houston and James found that lending by subsidiaries of MBHCs was more responsive than lending by stand-alone banks to changes in overall loan growth in the state. Huang found that a tightening of monetary policy caused a bigger reduction in bank lending in counties that were dependent on manufacturing (counties in which tighter monetary policy could be expected to cause bigger declines in loan demand), and that lending in these counties declined significantly more at banks belonging to MBHCs than at stand-alone banks.

[5]For evidence that small businesses can increase their access to credit or smooth their borrowing costs by forming long-term relationships with banks, see Petersen and Rajan and Berlin and Mester.

[6]Hughes and others (1996, 1999) found that the expansion of banks across state lines improved their risk-return tradeoff, reducing the variance of total profits associated with each expected level of total profits.

[7]Stein argues that large hierarchical banks do not rely on soft information because loan officers in such banks do not have enough incentive to invest in such information—their investment could end up being wasted, because top management might not provide the funds needed to act on the information. Berger and Udell suggest that economies of scale give large banks a strong comparative

advantage in transactions-based lending, and that it is inefficient for large banks to engage in both transaction-based lending and relationship lending. Berger and others find evidence consistent with the view that large banks rely less than small banks on soft information and relationship lending.

[8]Canales and Randa argue that decentralized banking offices with authority to make loan decisions are more likely to collect information about the local market and use that information to their advantage than centralized banking offices that do not enjoy such autonomy. In support of this point, they show that in the Mexican banking system, decentralized branches tend to charge higher loan rates than centralized branches in highly concentrated markets.

[9]Multi-market banks are likely to have an especially difficult time monitoring offices when those offices are located at a large distance from organization headquarters. Consistent with this view, Berger and DeYoung found that the ability of MBHCs to exercise control over their subsidiaries decreased with the distance of the subsidiary from the lead bank, though they also found that the adverse effect of distance on control had diminished somewhat over time.

[10]This change became effective for thrifts in 2004 and for commercial banks in 2005. The $1 billion size threshold was also indexed to the price level, so that the threshold would automatically increase with inflation.

[11]Purchases of small business loans must also be reported, but these tend to be much smaller than originations. In 2003, for example, purchases were only 2 percent of originations. The CRA data are also broken down by the size of the loan (under $100,000; $100,000 to $250,000; and $250,000 to $1 million) and by the gross annual revenues of the borrower (less than or greater than $1 million).

[12]While there is no exact relationship between the size of the loan and the size of the borrower, surveys have shown a strong correlation between the two (Keeton). According to the 2003 Survey of Small Business Finances, 96.5 percent of credit line extensions to small businesses were associated with commitments of $1 million or less (Board of Governors 2007, p. 39).

[13]Independent data from bank call reports suggest that the amounts of the two types of small business loans were of similar magnitude in 2001 (Board of Governors 2002). A substantial portion of the small loans backed by nonresidential real estate are backed by owner-occupied real estate (e.g., factories or stores), making them more similar to C&I loans than to commercial real estate loans (Mortgage Bankers Association).

[14]For example, Helfand and others report that businesses with less than 100 employees accounted for only 20 percent of the average quarterly decline in net employment during the 2001 recession and recovery, versus 60 percent during the 1990-1991 recession and recovery.

[15]As noted earlier, the CRA data on small business loan originations combine small C&I loans with small loans secured by nonresidential real estate. Growth

in small nonresidential real estate loans also declined after 2000, though by much less than growth in small C&I loans.

[16]Some loan originations are by banking organizations that have no offices in the market in which the loans are made. Such "non-local" lending is not covered by this article but is examined in detail in Hannan and Laderman.

[17]Year-over-year growth in small business loan originations is highly volatile, even after making the adjustments described in the appendix. As a result, the data were trimmed by computing the year-over-year growth rate for each bank, market, and year and dropping observations falling in either the top or bottom decile.

[18]For example, annual nonfarm employment peaked in 2000 and returned to approximately the same level in 2004.

[19]Following common practice, growth in employment, loan originations, and deposits are all measured in log terms in this article—specifically, as 100 times the difference in log levels.

[20]If the year-over-year growth in originations was missing for any of these years, that market/type combination was dropped from the data.

[21]For example, Table 2 indicates that the growth of deposits and originations in primary banking offices could be computed for 116 high-growth markets and 132 low-growth markets.

[22]All significance levels are adjusted for heteroskedasticity using the White-Eicker method.

[23]The difference-in-differences for primary and subordinate offices was 4.3 percentage points, which is statistically significant at the 5 percent level. For this exercise, a different set of 248 metro areas had to be constructed. This was necessary because the Census data on employment by size of firm are only reported for metro areas, and because the 2000-2002 employment data are based on the 1999 metro-area definitions rather than the new 2003 metro-area definitions.

[24]In 2000, 35.8 percent of primary office deposits were in the first type of office and 62.0 percent in the second type. The remaining 2.3 percent of primary office deposits were in offices located in a different market than bank and organization headquarters but in a market with more than half of organization deposits.

[25]As indicated in Table 3, the difference-in-differences for this case is 6.2 percentage points, which is significant at the 1 percent level. In contrast, the difference-in-differences for the two types of primary office is -0.7 percentage points, which is statistically insignificant.

[26]An additional issue is whether proximity to bank headquarters or proximity to organization headquarters is the more important factor affecting the responsiveness of local lending to local economic shocks. This question is beyond the scope of the current article, but differences-in-differences tests similar to those in Table 3 suggest that proximity to bank headquarters is the more important factor.

[27]The combined effect of the first two distortions, both of which result from the existence of a size threshold for reporters, was to reduce the average annual growth in originations during 2000-2003 by 2.1 percentage points.

[28]Suppose, for example, that a reporter based in Kansas City and operating primarily in that market was acquired in 2001 by another reporter based in a different market and operating primarily outside of Kansas City. If the data were not adjusted for the merger, the first bank's originations in the Kansas City market would be included with those of other primary offices in 2000, but with those of subordinate offices in 2001. Thus, in the Kansas City market, the effect of the merger would be to artificially decrease 2000-2001 growth in primary-office originations and artificially increase 2000-2001 growth in subordinate-office originations.

[29]For other studies that use bank-level call report data and branch-level deposit and CRA data to estimate originations by market for non-reporters, see Hannan and Laderman.

[30]In a few cases, offices located in the same market in which the bank was headquartered operated alongside offices of a bank belonging to the same organization but headquartered in a different market. In such cases, both groups of offices were classified as being in the same market as bank headquarters if the first group held more deposits and as being in a different market than bank headquarters if the second group held more deposits.

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