Is Commercial Banking a Distinct Line of Commerce?

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I N ANALYZING THE COMPETITIVE IMPACTS OF BANK CONSOLIDATIONS, BANKING AGENCIES AND THE U.S. DEPARTMENT OF JUSTICE HAVE TENDED TO RELY ON THREE BASIC NOTIONS: THE MARKET FOR BANK PRODUCTS IS PREDOMINANTLY LOCAL. IT IS DEFINED BY A GROUP OF PRODUCTS RATHER THAN BY INDIVIDUAL ONES. AND IT IS SERVED PRIMARILY BY COMMERCIAL BANKS. AT THEIR SIMPLEST,

these propositions assume that the market for all bank services is local and that the market is for services offered only by banks. This approach allows analysts to merge all products and services into a single "cluster of services" for analysis of competition.[1]

The concept of such a cluster of services, and the underlying ideas about the market for such services, is facing serious challenges, however. Since 1984 the U.S. Federal Reserve has taken a somewhat broader view by acknowledging savings and thrift institutions as local suppliers of banking services and including them in their competitive analysis; typically, though, these institutions are assigned a lesser weight than commercial banks in order to reflect their lower levels of expertise in providing some components of the cluster (Woosley 1995). In addition, some perceive that as bank services have evolved toward electronic distribution, as in the

case of mortgages, and remote distribution—through credit cards, for example—the set of services distributed locally is smaller (Ausubel 1991; Jackson 1992; Hymel 1994). Indeed, increases in types and locations of competitors have cast doubt on whether a cluster of services exists at all.[2] These changes have induced the U.S. Department of Justice to do separate analyses of small business lending in the consolidations that it analyzes (Board of Governors and U.S. Department of Justice 1995; U.S. Department of Justice and Federal Trade Commission 1997; Kramer 1999).[3]

Other evidence seems to support the conclusion that the demand for small business loans is largely confined to local financial institutions and that lenders serve only areas fairly close to their physical location (Cole, Wolken, and Woodburn 1996; Kwast, Starr-McClure, and Wolken 1997; Cole 1998;

Kwast 1999). As traditionally practiced, lending to small businesses involves diverse borrowers that have fewer of the standard measures of creditworthiness and require close monitoring of condition and collateral. The borrowers are not generally rated by national rating agencies and may lack audited financial statements, and the character and reputation of their owners/managers bears an important weight in the firms' performance and thus in the lender's analysis of the risks of their debts (Petersen and Rajah 1994; Frame 1995; Berger and Udell 1996).

Considerable anecdotal evidence also supports local origins for small business borrowers from banks. In addition, surveys have found that small businesses, like households, obtain credit from local institutions far more frequently than from other sources (Ellihausen and Wolken 1990, 1992; Kennickell and Kwast 1997; Kwast, Starr-McClure, and Wolken 1997). Indeed, a recent analysis of the National Survey of Small Business Finances indicated only a slight shift in business dependence on local bank sources (Kwast, Starr-McClure, and Wolken 1997).

> Community Reinvestment Act small business loan data give a broader picture of the out-of-market participation in a local small business lending market and therefore an indication of the degree of competitive pressure applied by these institutions.

Antitrust analysis by the Federal Reserve and the Department of Justice often implies that small business lending markets deserve special attention. The Federal Reserve basically holds to the cluster of products and services approach (Frame 1995).[4] The Antitrust Division of the Department of Justice often considers lending to small businesses as a separate local market in its analysis of bank consolidations (Board of Governors and U.S. Depart-ment of Justice 1995; Frame 1995; Cyrnak 1998; Kramer 1999).

The reasoning, anecdotes, and survey evidence have not, however, convinced all observers that small business lending is either a local market, a market in which financial services are marketed in a tight cluster, or a market served primarily by depository institutions (Jackson and Eisenbeis 1997; Radecki 1998; Samolyk 1998; Grant Thornton LLC 2000).[5] The increasing use of credit scoring in underwriting small business loans suggests that larger institutions believe high-powered scoring models can substitute at least to some extent for the

banking relationships and on-site monitoring that have typically characterized local banking (Frame, Srinivasan, and Woosley forthcoming). Reliability of surveys, particularly market-specific surveys conducted for purposes of antitrust analysis, is another issue, with existing surveys having unavoidable problems associated with missing or inaccurate responses to potentially sensitive questions. And while there is no evidence of bias in data collection by the surveys, it is also true that there is no cost associated with errors and omissions.

The surveys also have other kinds of problems. They historically deal with static conditions, and they generally reflect stable banking relationships. The surveys provide no evidence on the impact of marginal price changes or interest rate changes by lenders chosen by small businesses. If these changes would move customers to lenders located in another area to a significant extent, then one would have to extend the geographic market area. In the extreme, if there were a national market in small business loans with the same price for the same type of loan at every supplier, one would expect small business borrowers to choose the most convenient (that is, local) bank from which to borrow. The survey data are therefore subject to at least two interpretations—either the market is local or, under current market conditions, local convenience outweighs any price or availability advantages offered by out-of-market lenders. Consequently, the surveys do not conclusively show that small business lending markets are local.

New data collected on bank small business lending by location now allow analysis of the number and size of lenders to small businesses in local markets. By identifying the borrower location of small business loans, the number of each reporting bank's loans and their sizes can be assigned a local area. This information allows comparing the number of lenders originating loans in a specific local area with the number of lenders physically located in that area. Since loan number and dollar volume are also now reported, market concentration can be calculated and compared. If the data show significant numbers of nonlocal small business loan originators, there would be reason to doubt the assertion that small business lending markets are local. Comparisons of market concentration would give evidence on the impact of nonlocal lenders on market concentration and potentially on competition.

In addition, the data make it possible to compare local loan-market concentration measures with measures of market concentration on the basis of deposits in local institutions to determine whether the deposit-based measures are useful approxima-

tions of loan-market concentration. Although, like surveys, the new data reveal static conditions, the additional information available in the Community Reinvestment Act (CRA) small business loan data gives a broader picture of the out-of-market participation in a local small business lending market and therefore an indication of the degree of competitive pressure applied by these institutions. Although the Supreme Court said in *United States v. Philadelphia National Bank*, "In banking, as in most service industries, convenience of location is essential to effective competition," the presence of out-of-market lenders indicates that the convenience of local offices can be overcome, at least to some extent, by distant lenders offering, for example, better rates, greater access to credit, or more flexible products and hours of service. It may be that as time pressures increase for individuals, banking convenience is becoming more a matter of banking at a convenient time than at a convenient location.

The issues of whether banking markets are local and whether deposits are an appropriate proxy for the cluster are crucial for antitrust analysis, particularly in small markets. Finding a source of reliable information is important given that anecdotes are generally insufficient and surveys provide only inconclusive evidence.

This article compares measures of local market concentration across deposit and small business loan products to answer two questions: Are small business lending markets local, and is deposit concentration an adequate proxy for small business loan concentration?

New CRA Data

Given the apparent shift in banking patterns and practices, it is desirable to measure both the local orientation of lending markets and the degree to which deposits are a sufficient proxy for other parts of the cluster. The new CRA small business loan data permit assigning small business loans to the census tract of the borrower. The data were collected by bank and thrift regulatory agencies beginning in 1996 pursuant to the revision of federal regulations implementing the CRA. The data help bankers, bank examiners, and community groups monitor the extent to which commercial banks and thrift institutions serve small businesses in low- and moderate-income parts of their service areas.[6] Because the data are collected in the process of judging institutions' compliance with the Community Reinvestment Act, they are referred to as CRA data.

Each bank and thrift meeting or exceeding a certain size criterion (jointly, "large lenders") is required to report.[7] Because of these criteria, a number of smaller banks are excluded, particularly from rural areas. Nevertheless, data on number and concentration of reporters give evidence on the nonlocal competitors and the structure of local small business lending markets when large nonlocal bank and thrift competitors are included. A reasonable extension of the banking data is used to estimate the importance of a portion of the nonreporters.

The CRA data are a welcome alternative and supplement to Call Report and survey data for two reasons.[8] First, unlike Call Report lending data, CRA

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1. *United States v. Philadelphia National Bank*, 374 U.S. 321 (1963); *United States v. Phillipsburg National Bank*, 399 U.S. 350 (1969); *United States v. Marine Bancorporation, Inc.,* 418 U.S. 602 (1974); *United States v. Connecticut National Bank*, 418 U.S. 656 (1974); *United States v. Central State Bank*, 621 F. Supp. 1276, 1292 (W.D. Mich., 1985), Aff'd. 817 F. 2d, 22 (6th Cir., 1987).

2. For example, in *United States v. Philadelphia National Bank*, Sup. Ct. page 1737, the court noted that "Some commercial banking products or services are so distinctive that they are entirely free of effective competition from products or services of other financial institutions; the checking account is in this category." Today, bank checking accounts face competition from thrift checking accounts, credit union share draft accounts, and money market accounts. For a more complete discussion of this reasoning, see the section below on "The Cluster of Services and Local Deposits as a Proxy for Market Structure."

3. Some, rather than questioning the existence of the cluster, question the use of deposits as a proxy (Dillon 1997).

4. See, for example, "First Security Corporation," *Federal Reserve Bulletin* 86 (2000): 123–24 <http://www.bog.frb.fed.us/boarddocs/press/bhc/1999/19991213/19991213.pdf> (October 17, 2000); and "Chemical Banking Corporation," *Federal Reserve Bulletin* 82 (1996): 239.

5. Although this latter issue deserves to be carefully analyzed, this paper does not attempt to do so because the new data analyzed here are reported only by commercial banks and thrifts lending to small businesses.

6. Data on the location of loans to farms were also collected under the same mandate. These data are not analyzed in this study. Farm loan data were excluded primarily because of the lack of location-specific data on significant sources of farm credit, such as the Farm Credit System and trade credit granted by suppliers.

7. The criteria require reports of all depository institutions with assets greater than $250 million as well as all deposit-taking subsidiaries of bank holding companies with consolidated assets exceeding $1 billion, regardless of subsidiary size. This study is based on 1998 data, reported by 1,714 institutions. (In 1997 there were 1,727 reporters, and in 1996 there were 1,844.)

8. "Call Report" is the common name for the Report of Condition and the Report of Income, which are financial statements required by federal banking regulators.

Measuring Market Structure: The HHI

In this study, the Herfindahl-Hirschman Index measures banking market concentration. Both the Department of Justice and the Federal Reserve use this index as a first step in analyzing the likely competitive impact of mergers. Many articles that deal with market structure in any industry employ the HHI.

The HHI includes all the competitors that an analyst chooses in a particular market. To compute the index one squares each competitor's market share and sums these squared shares. If there is only one competitor, its share would be 100 percent and the market HHI would be 100 squared or 10,000. Two equally large competitors would each have market shares of 50 percent and the market would have an HHI of 5,000. Greater numbers of competitors and more widely spread market shares result in smaller indexes. A market with ten firms with equal shares has an HHI of 1,000.

The HHI has two other useful characteristics. Because of the squaring of shares, the HHI gives heavier weight to firms with larger shares. In addition, 10,000 divided by the HHI equals the number of competitors of equal size that would result in the given HHI value. This latter characteristic gives another perspective on market concentration.

To learn more about the HHI and its use, see Rhoades (1993) and Holder (1993a).

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lending data is location-specific. Second, while small businesses responding to surveys may be reluctant to respond to queries regarding their banking practices, lenders submitting small business loan data for CRA purposes are subject to regulatory pressure to file complete and accurate reports. Although the resulting data may be neither perfectly suited to competitive analysis nor perfectly accurate, it is a significant addition to the data available for analysis.

Cyrnak (1998) analyzed 1996 CRA small business loan data to determine the extent and impact of loan originations by out-of-market lenders on urban and rural small business loan markets of varying sizes. For all but the largest markets, Cyrnak found that the average number of out-of-market lenders exceeded the average number of in-market institutions, with the ratio of out-of-market competitors to in-market competitors inversely related to market population. At the same time, out-of-market institutions were responsible for fewer loans (both number and dollar volume) than in-market institutions. The average size of small business loans was smaller for out-of-market competitors than in-market lenders. In rural markets, out-of-market CRA reporters accounted for a higher proportion of loan dollar volume and a lower portion of small business loan originations by number of loans than in urban markets. Cyrnak concluded that the higher proportion of dollar lending by out-of-market banks was indicative of the greater importance of outside institutions in rural small business lending than in urban small business lending. For rural markets, Cyrnak found that out-of-market institutions accounted for 63 percent of institutions extending small business loans—17 percent of business loans by number and 14 percent by volume.

The potential significance of out-of-market lending in rural markets is clear. Limiting competitive analysis to local sources of credit is more often critical to antitrust analysis in small markets, in which consolidations are likely to remove a significant competitor. Markets outside of metropolitan areas (rural markets) typically have fewer commercial banks and thrift institutions than urban ones; by any local measure they are more concentrated (Cyrnak 1998; Woosley 1998). Mergers of banks in rural markets are, thus, more likely to breach guidelines that bank regulators and the Department of Justice use to identify mergers with potential for serious adverse effects on competition. For these reasons, this article focuses on measuring competition in rural counties.

This article extends Cyrnak's study by examining rural markets in greater detail. For the fifty states' rural counties, three separate market concentration measures are calculated and compared across four possible product markets, using 1998 data. (Concentration measures and product markets are discussed below in detail.) These metrics are reported by state and for the United States as a whole, allowing interested readers to compare a market's competition to the norms for the state.

In general, Cyrnak concluded that CRA data demonstrate that in some cases there is significant out-of-market competition. The potential implications of the research presented here are broader. If

market concentration measures differ significantly across the four product measures chosen, it may indicate either that the cluster theory no longer holds or that deposits are not the most appropriate proxy for the ability to provide banking products and services to a given locale.

Even if market concentration metrics are not significantly different, or if they differ only in degrees of extreme concentration, additional analysis will shed light on the use of these out-of-market competitors as a mitigating factor or anticompetitive factor. In one tabulation of mergers acted upon by the Federal Reserve Board, the most frequently cited mitigating factor was strong remaining competition, due either to thrift competition, numerous remaining competition, or nonbank and out-of-market competitors (Holder 1993b). If using deposit-based measures of concentration routinely understates the number and importance of remaining out-of-market competitors, then further consideration of potential mitigating factors is necessary. Furthermore, if Herfindahl-Hirschman Indexes (HHIs) and other concentration measures differ only insignificantly across product markets, the Department of Justice practice of considering local small business lending as a separate market may be overly strict or redundant.[9]

Finally, using 1998 data will permit users to make comparisons across time regarding the relative importance of out-of-market lenders in a changing competitive environment. It is possible that the increasing prevalence of interstate or nationwide branching and the continuing reduction in the number of commercial banks and thrifts has changed competitive patterns since 1996. Incidentally, one can assume that as reporting institutions have become more familiar with the reporting requirements, the CRA data have become more accurate.

What Do the New Data Reveal?

Rural markets analyzed here are counties that are not in metropolitan areas and that have at least one CRA reporter or banking office.[10] In 1998 there were 2,356 of these markets in the United States. Within the rural counties, concentration is measured in three different ways—number of competitors, HHI, and the three-firm ratio—across four different combinations of products and competitors, or markets.[11]

The first product market is the local deposit base, including total deposits of each bank and thrift with offices in the county.[12] Banks and thrifts annually report deposits held in each office to the Federal Deposit Insurance Corporation (FDIC) as part of the Summary of Deposits report. Bank regulators and the Department of Justice typically use such deposit-based HHIs in the first step of analyzing competitive effects of mergers.

The second market is small business loans based on Call Report loan data for depository institutions with physical locations within the market. Since Call Report data do not identify local markets in which an institution made small business loans, loans for each given market are estimated. The estimation method assumes that each institution's loans and deposits are distributed identically—that is, if bank A has 15 percent of its deposits in county Z, then 15 percent of bank A's small business loans are attributed to county Z.[13] This estimation is the one that has traditionally been used to examine small business lending for antitrust purposes when such lending has been separated from the cluster of banking products and services.

The third market is small business loans based on CRA data for the market.[14] A HHI table is constructed using only the CRA reporters that originated at least one loan in the county. This approach

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9. The HHI is the primary measure of concentration used by federal regulators to assess the effect of mergers and acquisitions. For an explanation of the HHI, see the box on page 42.

10. For the summary statistics presently in Tables 1, 2, and 3, all rural counties that had either a depository office or an out-of-market CRA lender are included. For Tables 4 through 7, only rural counties that had both a depository office and an out-of-market lender are included. There are 2,237 rural counties that meet these criteria.

11. The three-firm ratio is the sum of the market shares of the three largest competitors.

12. The article follows the Federal Reserve's policy of computing a market HHI counting all deposits held in branches of banks and thrifts affiliated with banks, and half the deposits of other thrift offices. The partial consideration of thrifts recognizes their limited offering of some bank products, such as business loans. All loans of banks or thrifts are given full weight for the purposes of calculating concentration metrics for the three small business loan product markets. However, since thrifts report small business lending differently than commercial banks, estimates based on Thrift Financial Reports may not accurately represent thrift small business loans in a locale.

13. In all three HHI tables based on small business loans, all banks and thrifts are given equal weight.

14. Cyrnak (1998) has reported 1996 HHI data excluding business credit card loans. Credit card loans are included here for three reasons. First, credit card debt is a prevalent means of small business finance. Second, a line of credit accessed by a credit card has few functional differences from other small business credit lines. Finally, for lenders that issue both credit card loans and other small business loans, the CRA data do not identify the type of loan made.

indicates market concentration among lenders large enough to meet CRA reporting size criteria, based on their CRA small business loan originations for the market.

The fourth market, referred to as combined measure, contains the most comprehensive set of competitors. It includes small business loans made by both in-market and out-of-market firms, with reporters' CRA data combined with in-market nonreporters' Call Report data to arrive at a more comprehensive set of market measures. Because of reporting criteria, the CRA data omit many smaller banks' business lending. In order to partially adjust for this omission, a set of market data is computed that adds nonreporting business lenders with at least one office in the county. This adjustment assumes that banks with offices in a county are likely to make small business loans in that county. Since these banks are too small to be captured by the CRA criteria, this assumption is at least somewhat defensible. The estimation methodology described above for the Call Report data is used to estimate the in-market loans of nonreporters. The inclusion of both small and large financial institutions is likely to give the most accurate portrayal of small business lending in each area, given the limited availability of small business loan data.

For CRA purposes lenders report loan originations while for Call Report purposes lenders report outstanding loans. Unless the CRA data are adjusted to approximate outstanding loans, a comparison of Call Report and CRA data will generally understate the impact of lending by CRA reporters. Typically, the small business loans reported for CRA purposes were approximately 60 percent of the outstanding small business loans noted on the Call Report. Accordingly, in calculating the combined small business loan product market, the loan originations reported for CRA purposes in a given market are assumed to be 60 percent of outstanding loans in that market.

The combined small business loan data for 1998 show much greater numbers of small business lenders when out-of-market CRA reporters are included.[15] Table 1 compares the number of competitors across the four product markets. The mean number of institutions more than doubles, from five to thirteen, when combined small business lenders are compared with deposit takers with local branches; on average, more than 60 percent of small business lenders do not have a physical presence in the market. For example, in the average rural county in Alabama, 4.98 depository institutions have offices, but 14.04 originated small business loans. Out-of-market banks are more important in smaller markets.

Since market concentration guidelines tend to be breached more often in smaller markets, the greater importance of out-of-market lenders implies that antitrust authorities should be more attentive to identifying outside lenders in these areas.

The HHI-based combined market structure measure did not differ as dramatically from Call Report or deposit measures as one might expect, given the substantial addition in the number of out-of-market lenders shown by the CRA and combined data. Table 2 shows that combined business loan concentration including both in- and out-of-market lenders is, on average, 5.71 percent (240 points) lower than the Call Report–based small business loan HHI with only in-market lenders counted and only 1.67 percent (65 points) higher than the deposit-based HHI. In other words, including out-of-market lenders reveals that the levels of lending concentration are lower than apparent from the Call Report lending data. Again using Alabama as an example, the average rural county has a deposit-based HHI of 3,572 points and an average small business loan HHI (based on Call Report data) of 4,080. The average rural Alabama HHI on the combined CRA and Call Report small business loan data is 3,479. Although the Call Report loan data generally indicate significantly higher concentration levels than deposit data, the combined small business loan data reveal average concentration levels that are closer to those of the deposit data. With all measures, rural markets typically exceed the HHI minimum set out in the Department of Justice guidelines for banks with mean HHIs of 3,901 (deposits), 4,206 (Call Report small business loans), and 3,966 (combined) (see Table 2).

Similarly, the three-firm ratios also differed less dramatically when comparing deposit market tables and combined small business loan market tables than might be expected in light of the greater total number of competitors. Table 3 compares the three-firm ratios across the various product and competitor combinations. As with the HHI, the variation in three-firm ratios generally indicates that omitting out-of-market small business lenders makes small difference in market concentration. The average three-firm ratio for the combined small business loan markets was 84.8 percent, compared with 85.4 percent and 87.7 percent for the deposit and Call Report small business loan markets, respectively.

Smaller relative differences in HHIs and three-firm ratios than in number of lenders when out-of-market lenders are included arise from the character of out-of-market loans. Many of the institutions with widespread lending outside their geographic footprint issue credit cards or signature loans with relatively small loan amounts. Including estimates of small

	Deposit	Call Reports	CRA	Combined
TABLE 1 Average Number of Competitors in Rural Markets				
Alabama	4.98	4.98	11.02	14.04
Alaska	2.70	2.50	6.44	6.69
Arizona	5.89	5.67	13.78	14.89
Arkansas	4.23	4.23	9.25	12.06
California	5.42	5.35	15.00	16.54
Colorado	3.71	3.67	9.02	11.02
Delaware	11.00	9.00	25.00	28.00
Florida	4.17	4.11	11.36	13.21
Georgia	3.57	3.56	8.33	10.78
Hawaii	7.67	7.67	18.00	18.33
Idaho	4.20	4.10	9.41	10.22
Illinois	7.90	7.87	11.19	16.55
Indiana	5.54	5.46	14.84	16.93
Iowa	6.88	6.88	8.75	13.74
Kansas	5.52	5.51	6.43	10.98
Kentucky	3.56	3.54	8.79	11.30
Louisiana	4.45	4.43	9.08	12.13
Maine	7.92	7.92	15.00	17.88
Maryland	7.44	7.44	14.56	17.44
Massachusetts	4.33	4.33	15.38	16.25
Michigan	5.02	5.00	13.93	15.88
Minnesota	7.47	7.40	9.77	15.97
Mississippi	4.05	4.05	10.60	12.28
Missouri	5.63	5.44	8.89	12.73
Montana	3.50	3.50	6.49	8.64
Nebraska	5.08	5.00	6.62	9.95
Nevada	4.00	3.83	8.77	9.38
New Hampshire	9.86	9.86	20.60	23.90
New Mexico	4.19	4.19	9.11	11.74
New York	7.17	7.17	18.21	20.75
North Carolina	5.72	5.70	14.05	15.20
North Dakota	4.23	4.21	5.37	8.18
Ohio	7.32	7.18	15.55	18.68
Oklahoma	5.46	5.46	8.63	12.20
Oregon	5.63	5.56	11.07	12.70
Pennsylvania	6.97	6.94	16.65	19.62
Rhode Island	5.00	5.00	10.00	10.50
South Carolina	5.64	5.52	13.87	15.25
South Dakota	3.66	3.66	5.52	8.11
Tennessee	4.49	4.46	10.71	13.04
Texas	4.03	4.02	8.38	11.19
Utah	3.57	3.48	8.92	9.83
Vermont	6.45	6.36	16.14	17.86
Virginia	4.66	4.65	10.16	11.79
Washington	6.07	5.89	11.93	13.81
West Virginia	3.82	3.77	9.33	10.71
Wisconsin	8.22	8.20	13.33	17.69
Wyoming	4.33	4.33	9.19	11.48
United States	5.08	5.04	10.09	12.84

Note for Tables 1, 2, and 3: "Deposit" data are for local deposit bases, including total deposits of banks and thrifts. Call Report data are small business loans based on Call Report loan data for depository institutions with physical locations within the market. CRA data are for small business loan originations for the market. "Combined" data include small business loans made by both in-market and out-of-market firms, as reported in CRA data and Call Reports. For all charts: Connecticut, New Jersey, and Washington, D.C., are omitted because they have no completely rural counties.

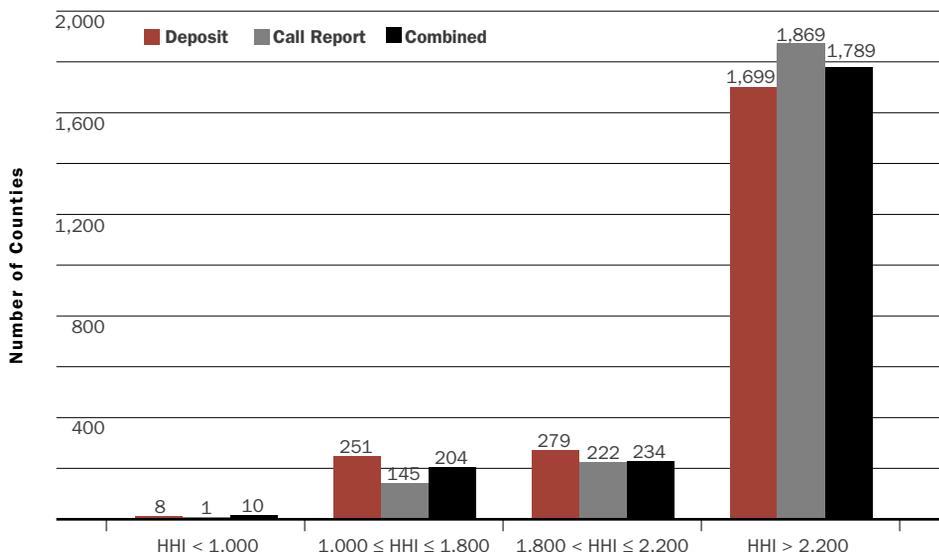Source for all tables and charts: Deposit data are from the FDIC Summary of Deposits. Call Report data are from the Federal Financial Institutions Examination Council (FFIEC) Call Reports accessed via the Federal Reserve System's National Information Center. CRA data are from small business loan data as reported to the FFIEC for CRA purposes.

15. Cyrnak (1998) shows similar changes for the 1996 data.

T A B L E 2 Average Rural Market HHI

	Deposit	Call Report	CRA	Combined
Alabama	3,572	4,080	4,063	3,479
Alaska	6,107	6,336	5,967	6,164
Arizona	3,714	3,806	2,404	3,689
Arkansas	4,060	4,292	4,959	4,172
California	3,762	4,298	2,944	3,427
Colorado	5,180	5,434	4,072	4,519
Delaware	7,382	2,033	1,726	1,315
Florida	4,410	4,642	3,817	4,794
Georgia	4,779	5,274	5,382	4,584
Hawaii	3,114	3,005	2,472	2,410
Idaho	4,405	4,268	4,036	3,835
Illinois	2,733	3,180	4,559	3,285
Indiana	3,398	3,769	3,417	3,282
Iowa	2,758	3,033	4,699	3,172
Kansas	3,510	3,751	5,194	3,672
Kentucky	4,700	4,914	4,687	4,643
Louisiana	3,951	4,076	4,410	3,799
Maine	2,355	2,692	3,333	2,883
Maryland	2,831	3,651	4,103	3,016
Massachusetts	3,633	4,563	2,411	3,164
Michigan	3,905	4,073	3,413	3,633
Minnesota	2,649	2,936	4,746	2,727
Mississippi	4,080	4,160	4,494	4,134
Missouri	3,209	3,571	4,795	3,355
Montana	5,508	5,720	4,947	5,781
Nebraska	4,225	4,427	5,548	4,131
Nevada	4,396	5,201	3,381	4,506
New Hampshire	3,012	2,338	2,216	2,372
New Mexico	4,714	4,987	4,703	4,771
New York	2,617	3,053	2,965	2,713
North Carolina	3,476	3,601	3,173	2,993
North Dakota	4,060	4,536	6,164	4,518
Ohio	2,719	3,241	3,218	3,089
Oklahoma	3,486	3,681	4,251	3,773
Oregon	3,637	4,454	3,978	4,603
Pennsylvania	3,116	3,311	3,258	2,658
Rhode Island	2,412	4,196	6,059	6,312
South Carolina	3,192	3,521	2,898	3,728
South Dakota	5,085	5,191	6,156	4,838
Tennessee	3,972	4,210	4,218	3,955
Texas	4,612	4,962	4,673	4,535
Utah	5,267	5,380	4,717	4,612
Vermont	3,178	3,236	3,027	3,789
Virginia	3,843	4,268	4,092	4,328
Washington	3,276	4,244	2,898	3,858
West Virginia	4,451	4,809	4,579	4,880
Wisconsin	2,626	3,091	4,167	3,060
Wyoming	3,647	3,913	5,022	4,232
United States	3,901	4,206	4,447	3,966

Number of Counties

Legend: ■ Deposit ■ Call Report ■ Combined

HHI < 1,000	1,000 ≤ HHI ≤ 1,800	1,800 < HHI ≤ 2,200	HHI > 2,200
8, 1, 10	251, 145, 204	279, 222, 234	1,699, 1,869, 1,789

business loans made by nonreporters improves the competitive picture significantly when concentration is measured by number of competitors, but the changes are less dramatic when the HHI or the three-firm ratio measures concentration. Combined small business loan HHIs and three-firm ratios were similar or lower, on average, than the corresponding measures of concentration using different sets of products and competitors. Some markets that were highly concentrated when only in-market competitors were considered become only moderately concentrated when measured by the HHI based on combined small business loans. Overall, however, with concentration measured by combined small business loans instead of deposits, 2.22 percent more markets exceeded Department of Justice guidelines.[16] Conversely, 3.25 percent fewer markets exceeded Department of Justice guidelines if concentration is measured by combined small business loans instead of Call Report data.

To give some idea of whether individual market concentration differs significantly when out-of-market CRA lenders are included in concentration measures, all markets with HHIs over 2,200 based on in-market deposit takers and lenders were identified.[17] Percentage differences in their HHIs when out-of-market lenders were included were measured.

Tables 4 and 5 and Chart 1 show the results. Approximately 52 percent of the 1,699 markets in which the deposit HHI exceeded 2,200 had lower HHIs based on combined small business loans. In addition, in 8.7 percent of markets in which the deposit HHI is extremely high, the combined small business loan HHI is less than 2,200. On average, the combined HHI was fifty points lower than the deposit HHI in very concentrated markets.

Similarly, in the markets in which the in-market Call Report small business loan measures exceeded 2,200, 63.6 percent showed lower HHIs when out-of-market lenders were included, and 9.5 percent of combined small business loan HHIs were less than 2,200. On average, the combined HHI based on small business loans was 302 points lower than the HHI based on Call Report data for these highly concentrated markets.

These results indicate that a market that is highly concentrated when measured by deposits or Call Report data is not likely to become unconcentrated when measured by combined CRA and Call Report data. On the other hand, it is possible that the market will appear only moderately concentrated, or at least less highly concentrated, when combined small business loans are used to measure concentration instead of when deposits or Call Report data are used.

16. The HHI exceeded 1,800 in 1,978 markets when the product market is deposits, in 2,091 markets when the product market is Call Report small business loans, and in 2,023 markets when the product market is combined small business loans.

17. Based on Call Report small business loan HHIs, there were 1,869 counties where the HHI exceeded 2,200. There were 1,699 counties where the deposit-based HHI exceeded 2,200 and 1,789 where the combined HHI based on small business loans was greater than 2,200. The upper limit of 2,200 for HHI was chosen to reflect precedent for mergers receiving approval without divestiture.

T A B L E 3 Average Three-Firm Ratios

	Deposit	Call Reports	CRA	Combined
Alabama	84.19	87.90	86.56	81.93
Alaska	97.06	97.28	96.85	95.27
Arizona	82.94	81.23	69.02	77.01
Arkansas	89.92	91.05	89.85	89.45
California	80.04	87.57	73.73	79.96
Colorado	90.21	91.83	84.18	87.27
Delaware	94.03	67.54	62.77	54.07
Florida	90.10	90.86	81.81	88.58
Georgia	92.21	93.84	91.66	90.53
Hawaii	87.35	85.66	77.04	75.92
Idaho	91.53	90.82	87.03	85.15
Illinois	73.08	78.37	87.27	76.67
Indiana	83.37	85.82	82.25	79.31
Iowa	74.69	78.87	89.19	78.05
Kansas	83.12	86.46	91.91	85.58
Kentucky	93.28	94.65	89.10	91.25
Louisiana	90.71	91.75	87.51	88.45
Maine	73.25	76.59	81.61	75.44
Maryland	75.32	84.45	85.36	83.84
Massachusetts	86.54	87.78	70.82	77.40
Michigan	86.53	87.73	81.49	82.28
Minnesota	73.58	78.08	88.33	74.52
Mississippi	91.44	91.83	89.27	88.70
Missouri	81.98	85.00	90.07	83.56
Montana	94.14	94.43	90.81	92.85
Nebraska	84.75	86.94	93.40	85.39
Nevada	87.72	91.83	80.50	84.50
New Hampshire	70.99	70.03	67.44	70.08
New Mexico	90.57	92.34	88.50	89.84
New York	75.07	79.78	78.35	75.40
North Carolina	82.51	82.91	81.88	78.35
North Dakota	91.73	93.24	92.86	92.36
Ohio	74.67	79.81	79.36	75.63
Oklahoma	81.62	85.54	89.89	84.41
Oregon	83.30	87.98	81.82	87.81
Pennsylvania	80.46	82.73	78.96	74.23
Rhode Island	76.93	88.08	82.62	87.36
South Carolina	81.24	82.73	77.53	81.24
South Dakota	92.43	93.57	96.27	92.52
Tennessee	86.79	88.71	88.21	85.92
Texas	89.26	90.71	86.26	88.28
Utah	94.10	94.35	91.72	90.13
Vermont	77.73	77.93	77.52	80.10
Virginia	87.74	89.26	86.14	88.10
Washington	81.07	87.09	76.96	80.01
West Virginia	93.25	93.43	88.96	88.76
Wisconsin	72.92	78.07	85.59	75.59
Wyoming	89.23	90.90	91.38	89.58
United States	85.42	87.72	87.11	84.79

TABLE 4 Highly Concentrated Deposit Markets

	Number of Counties with Deposit HHI > 2,200	Percentage of Highly Concentrated Counties with Combined HHI < 2,200	Percentage of Highly Concentrated Counties with Combined HHI < Deposit HHI	Percentage of Highly Concentrated Counties with Combined HHI > Deposit HHI
Alabama	35	5.71	54.29	45.71
Alaska	17	5.88	58.82	41.18
Arizona	5	20.00	60.00	40.00
Arkansas	56	3.57	41.07	58.93
California	13	30.77	61.54	38.46
Colorado	41	4.88	63.41	36.59
Delaware	1	100.00	100.00	0.00
Florida	28	7.14	46.43	53.57
Georgia	106	4.72	57.55	42.45
Hawaii	3	0.00	100.00	0.00
Idaho	37	16.22	64.86	37.84
Illinois	33	6.06	33.33	66.67
Indiana	41	19.51	60.98	39.02
Iowa	41	7.32	39.02	60.98
Kansas	69	7.25	49.28	50.72
Kentucky	94	4.26	50.00	50.00
Louisiana	36	8.33	52.78	47.22
Maine	6	0.00	16.67	83.33
Maryland	5	0.00	60.00	40.00
Massachusetts	2	0.00	50.00	50.00
Michigan	47	14.89	68.09	31.91
Minnesota	34	11.76	58.82	41.18
Mississippi	66	7.58	45.45	54.55
Missouri	64	14.06	43.75	56.25
Montana	46	0.00	43.48	56.52
Nebraska	58	5.17	58.62	41.38
Nevada	10	10.00	40.00	60.00
New Hampshire	3	66.67	66.67	33.33
New Mexico	23	0.00	43.48	56.52
New York	13	15.38	53.85	46.15
North Carolina	48	25.00	60.42	39.58
North Dakota	41	0.00	41.46	58.54
Ohio	27	25.93	40.74	59.26
Oklahoma	42	11.90	50.00	50.00
Oregon	19	5.26	47.37	52.63
Pennsylvania	20	30.00	70.00	30.00
Rhode Island	1	0.00	0.00	100.00
South Carolina	18	11.11	44.44	55.56
South Dakota	56	5.36	62.50	37.50
Tennessee	55	9.09	54.55	45.45
Texas	151	5.30	57.62	42.38
Utah	22	4.55	72.73	27.27
Vermont	5	20.00	60.00	40.00
Virginia	56	5.36	44.64	55.36
Washington	18	22.22	33.33	66.67
West Virginia	41	7.32	56.10	43.90
Wisconsin	25	8.00	32.00	68.00
Wyoming	21	4.76	42.86	57.14
United States	1,699	8.71	52.09	47.91

	Number of Counties with Call Report HHI > 2,200	Percentage of Highly Concentrated Counties with Combined HHI < 2,200	Percentage of Highly Concentrated Counties with Combined HHI < Call Report HHI	Percentage of Highly Concentrated Counties with Combined HHI > Call Report HHI
Alabama	38	10.53	84.21	15.79
Alaska	18	5.56	61.11	38.89
Arizona	6	16.67	33.33	66.67
Arkansas	57	1.75	54.39	45.61
California	22	27.27	50.00	50.00
Colorado	43	4.65	76.74	23.26
Delaware	1	100.00	100.00	0.00
Florida	29	3.45	44.83	55.17
Georgia	109	5.50	77.06	22.94
Hawaii	3	0.00	100.00	0.00
Idaho	35	11.43	57.14	42.86
Illinois	47	14.89	55.32	44.68
Indiana	46	21.74	65.22	34.78
Iowa	56	14.29	58.93	41.07
Kansas	73	5.48	73.97	26.03
Kentucky	95	6.32	69.47	30.53
Louisiana	39	7.69	66.67	33.33
Maine	10	10.00	30.00	70.00
Maryland	8	0.00	62.50	37.50
Massachusetts	2	0.00	100.00	0.00
Michigan	50	14.00	62.00	38.00
Minnesota	40	12.50	85.00	15.00
Mississippi	66	6.06	50.00	50.00
Missouri	77	10.39	54.55	45.45
Montana	49	0.00	57.14	42.86
Nebraska	62	3.23	72.58	27.42
Nevada	11	9.09	45.45	54.55
New Hampshire	4	50.00	50.00	50.00
New Mexico	25	4.00	48.00	52.00
New York	16	25.00	75.00	25.00
North Carolina	50	24.00	64.00	36.00
North Dakota	43	0.00	60.47	39.53
Ohio	34	29.41	61.76	38.24
Oklahoma	47	10.64	65.96	34.04
Oregon	25	4.00	40.00	60.00
Pennsylvania	23	30.43	69.57	30.43
Rhode Island	1	0.00	100.00	0.00
South Carolina	22	18.18	50.00	50.00
South Dakota	59	5.08	64.41	35.59
Tennessee	60	8.33	61.67	38.33
Texas	165	6.67	76.97	23.03
Utah	23	4.35	65.22	34.78
Vermont	7	14.29	42.86	57.14
Virginia	60	6.67	50.00	50.00
Washington	24	25.00	58.33	41.67
West Virginia	40	7.50	62.50	37.50
Wisconsin	31	16.13	58.06	41.94
Wyoming	19	0.00	26.32	73.68
United States	1,869	9.47	63.62	36.38

TABLE 6
Percentage Distribution of Southeastern Rural Markets by Degree of Concentration, 1998

Basis for Calculating HHI	Unconcentrated (HHI < 1,000)	Moderately Concentrated (1,000 ≤ HHI ≤ 1,800)	Highly Concentrated (1,800 < HHI ≤ 2,200)	Extremely Highly Concentrated (HHI > 2,200)
Alabama
Deposits	0.00	15.22	8.70	76.09
Call Report	0.00	10.87	6.52	82.61
Combined	2.17	10.87	8.70	78.26
Florida
Deposits	0.00	6.06	9.09	84.85
Call Report	0.00	6.06	6.06	87.88
Combined	0.00	9.09	0.00	90.91
Georgia
Deposits	0.00	3.48	4.35	92.17
Call Report	0.00	1.74	3.48	94.78
Combined	0.00	2.61	7.83	89.57
Louisiana
Deposits	0.00	2.50	7.50	90.00
Call SBL	0.00	2.50	0.00	97.50
Combined	0.00	2.50	7.50	90.00
Mississippi
Deposits	0.00	0.00	8.33	91.67
Call Report	0.00	1.39	6.94	91.67
Combined	0.00	1.39	11.11	87.50
Tennessee
Deposits	0.00	5.88	13.24	80.88
Call Report	0.00	4.41	7.35	88.24
Combined	1.47	2.94	10.29	85.29
Southeast
Deposits	0.00	4.81	8.02	87.17
Call Report	0.00	3.74	5.08	91.18
Combined	0.53	4.01	8.29	87.17
Nation
Deposits	0.36	11.22	12.47	75.95
Call Report	0.04	6.48	9.92	83.55
Combined	0.45	9.12	10.46	79.97

Sixth District Results

In the six states that are completely or partially included in the Sixth Federal Reserve District, there are 374 rural counties that have at least one banking office and one out-of-market lender.[18] The vast majority of these markets is considered highly concentrated by any of the product market measures used in this analysis, with less than 5 percent considered unconcentrated or moderately concentrated. In fact, no rural markets are unconcentrated when measured by depo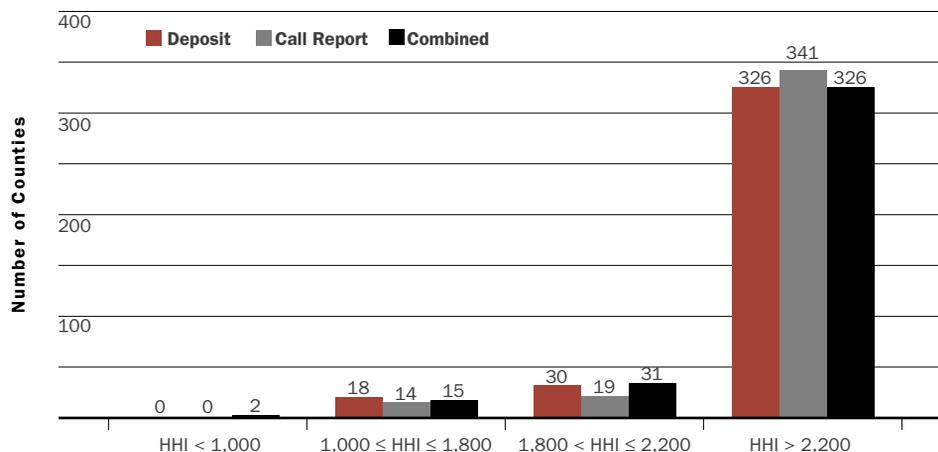sit HHI or Call Reports based on HHI, and only 0.53 percent of markets is unconcentrated when measured by combined small business loan HHI (see Table 6 and Chart 2).

For the Southeast overall, the combined small business loans reveal an average of 12.42 competitors, nearly three times the number of deposit and Call Report competitors (4.20 and 4.18, respectively). Similarly, the southeastern combined small business loan three-firm ratio is 2.1 percent lower than the deposit three-firm ratio and 3.9 percent lower than the Call Report three-firm ratio.[19] The average

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18. The terms *Sixth District*, *Sixth District states*, and *Southeast* are used interchangeably in this article. The Sixth District includes Alabama, Florida, Georgia, and parts of Louisiana, Mississippi, and Tennessee. The entire states of Louisiana, Mississippi, and Tennessee were included in this study.

19. The regional combined small business loan three-firm ratio is 87.7 percent while the deposit and Call Report small business loan three-firm ratios are 89.6 percent and 91.2 percent, respectively.

Number of Counties

Legend: ■ Deposit ■ Call Report ■ Combined

	Deposit	Call Report	Combined
HHI < 1,000	0	0	2
1,000 ≤ HHI ≤ 1,800	18	14	15
1,800 < HHI ≤ 2,200	30	19	31
HHI > 2,200	326	341	326

combined HHI of 4,123 is 8.2 percent lower than the HHI based on Call Reports (4,460) for the region but only 0.5 percent lower than the deposit HHI (4,143).

Some southeastern states benefit more than others from out-of-market lending competition. Georgia, for example, has the highest average rural deposit-based HHI in the region, at least partly as a relic of its previously restrictive branching laws. The combined HHI is 195 points (4.3 percent) lower than the deposit HHI and 690 points (15.1 percent) lower than the Call Report HHI. In Alabama, which has the lowest average rural deposit HHI in the southeast, the combined HHI is only 106 points (2.7 percent) lower than the deposit HHI but is 601 points (17.3 percent) lower than the Call Report HHI. Florida's average deposit HHI and Call Report HHI are both lower than the combined HHI, by 8.0 percent and 3.2 percent, respectively. In Florida, some of the largest banking organizations with widespread branching networks do not focus on small business lending in the state. As a result, the CRA data indicate fewer small business loans than estimated by Call Report data. The resulting average combined loan HHI is higher then the average deposit and Call Report–based HHI(s). Even so, the mean combined three-firm ratio is 1.7 percent lower than the deposit three-firm ratio and 2.6 percent lower than the Call Report three-firm ratio.

Although most markets remain highly concentrated regardless of the measurement used, the variations in results illustrate the benefits of using the combined small business loan HHI in addition to the deposit measurements of concentration. The use of multiple measures reveals additional information about the specific markets in question that may be helpful in analyzing the county's competitive profile

and any potential mitigating factors in apparently anticompetitive mergers.

The Cluster of Services and Local Deposits as a Proxy for Market Structure

In *United States v. Philadelphia National Bank*, the Supreme Court noted that "some commercial banking products or services are so distinctive that they are entirely free of effective competition from products or services of other financial institutions; the checking account is in this category."[20] With the rise of thrift checking accounts, credit union draft accounts, and money market accounts offered by investment companies, this distinction no longer holds. The Supreme Court also noted, "Others enjoy such cost advantages as to be insulated within a broad range from substitutes furnished by other institutions. For example, commercial banks compete with small-loan companies in the personal-loan market; but the small-loan companies' rates are invariably much higher than the banks', in part, it seems, because the companies' working capital consists in substantial part of bank loans." These conditions also no longer hold. Specialty lenders are not dependent on commercial banks for working capital, relying instead on access to capital markets and securitization to provide needed funds. The Court also held that "there are banking facilities which, although in terms of cost and price they are freely competitive with the facilities provided by other financial institutions, nevertheless enjoy a settled consumer preference, insulating them, to a marked degree, from competition; this seems to be the case with savings deposits." In today's marketplace, savings deposits are subject to competition from thrifts, credit unions, annuities, mutual funds, and other

securities and insurance products. With the rise of alternative delivery systems, competing products from nonbank institutions, and greater price competition among financial institutions, it may no longer be accurate to assume this settled consumer preference.

As noted previously, deposits held by banks located within the local market area typically are used to measure market concentration (Woosley 1995). These deposit-based HHIs are said to approximate market structure of the cluster of banking services.[21] The availability of CRA data gives an opportunity to partially test this assertion and indeed provides evidence about whether the concept of a cluster of services is appropriate in today's financial environment.[22] A series of paired T-tests indicated that some of the differences in the means of the various HHIs were not statistically equal to zero (Table 7).[23] Similar results were found for the differences in the means of the three-firm ratios and number of competitors. It appears that the deposit concentration measures are not a consistently reliable proxy for concentration in small business loans, whether measured by the traditional Call Report data or by the combined Call Report and CRA data. The debatable

20. Similarly, *United States v. Connecticut National Bank* stated, "Commercial banks in the State offer credit-card plans, loans for securities purchases, trust services, investment services, computer and account services, and letters of credit. Savings banks do not." Today, all of these products are offered by at least one type of nonbank financial institution.

21. Although deposits are routinely used as a proxy for the cluster by the federal banking agencies, case law does not require such usage. Indeed, in *United States v. Philadelphia National Bank,* deposits, loans, and assets were used to measure concentration. Similarly, in *United States v. Phillipsburg National Bank* and *United States v. Marine Bancorporation, Inc.,* demand deposits, loans, assets, and number of banking offices were used. Until recently, only deposits could be easily identified by locale, encouraging regulators to use this readily available data for antitrust purposes. The advent of CRA small business loan and small farm loan data and Home Mortgage Disclosure Act of 1975 data has increased the amount of available data regarding banking products and services sold by location.

22. Antitrust review in the federal banking agencies still utilizes the cluster of products and services concept in the face of much change in the nation's financial system. Sometimes this adherence is supported as adherence to a concept stated by the Supreme Court. The court, however, has changed its concepts when contrary evidence was presented. See, for example, *Brown v. Board of Education of Topeka, Kansas, 349 U.S. 294* (1955). Furthermore, the banking agencies have also ceased to adhere to some of the dictates of previous Supreme Court decisions. For example, *United States v. Philadelphia National Bank* included only commercial banks with their head offices in the local market as competition. Federal banking regulators include all banks with offices in the local market. *United States v. Connecticut National Bank* specifically excluded savings banks, but the banking regulators give local thrifts at least half weight in antitrust analysis, and the Federal Reserve cited thrift competition as a mitigating factor in more than 53 percent of cases reviewed by Holder (1993b). *United States v. Philadelphia National Bank* rejected "countervailing power," or the market share of the dominant firm, as a potential mitigating factor. Holder found that the Federal Reserve cited this factor as mitigating potential anticompetitive effects in some markets affected by merger activity.

23. A T-test is a statistical measurement of the probability that the difference observed in the means is due to chance. Paired T-tests are used when, as in this instance, the observed measurements are drawn from related, rather than independent, samples. Pearson correlation coefficients indicated modest correlations between concentration measures based on the various products.

reliability of deposits as a proxy for the cluster is consistent with the changing role of deposits in modern banking. Banks today rely less on deposits and more on wholesale, noncore funding, such as federal funds, Federal Home Loan Bank advances, notes, and commercial paper. Given the greater access to national and global capital and funding markets, even for regional banks, deposits are becoming less relevant as a measure of the capacity to provide banking products and services. Smaller banks may have fewer wholesale funding options, but they are also relying less on deposits and more on Federal Home Loan Bank advances and similar funding sources.

> As credit scoring, disinter-mediation, and electronic distribution of banking services increase, out-of-market providers are likely to increase in importance. At the same time, local institutions are likely to remain significant.

Conclusions and Policy Considerations

Use of the data first reported for 1996 CRA analysis sheds new light on sources of and the importance of competition in rural markets for small business loans. Analysis shows that the number of lenders in these markets is seriously underesti-mated when only lenders located in the market are counted as competitors. Including out-of-market lenders more than doubles the number of total reporting loan originators on average, and the importance of out-of-market lenders increases with markets of smaller size.

Out-of-market lenders typically make fewer and smaller loans than in-market lenders, however. Thus, out-of-market lenders have much less influence on traditional measures of market concentration than they do on the number of competitors in a market. Even so, in markets in which the deposit-based HHI exceeds the level typically approved in merger transactions, using the combined HHI reduces the HHI enough for it to fall below that level in 12.7 percent of markets. Similarly, when the deposit HHI exceeds 1,800, the combined HHI falls within the parameters of the Department of Justice guidelines 7.8 percent of the time.[24] Including both CRA reporters and non-reporters with local offices reduces both mean concentration in highly concentrated markets and the number of markets in which concentration exceeds Department of Justice guidelines.

Using the four concentration measures above to analyze variation of HHIs indicates that markets vary widely. No single measure approximates any other precisely. Hannan (1991) concludes that variations in deposit and loan concentration in banking markets will introduce considerable noise into tests of the relationship between deposit concentration and market performance. Consequently, a single concentra-tion measure is a poor approximation of market concentration as a structure measure in the structure-conduct-performance approach to antitrust analysis. Although using multiple measures of concentration might increase the uncertainty connected with receiv-ing regulatory approval of mergers, it appears that, for at least some markets, deposits are not an adequate proxy for small business lending.

Furthermore, the use of multiple measures is not inconsistent with the reasoning or evidence used in precedent. For example, in *United States v. Philadelphia National Bank,* Justice Brennan wrote, "There is no evidence of the amount of business done in the area by banks with offices outside the area; it may be such figures are unobtainable." One could infer from this statement that such evidence should be presented, if available. In addition, *United States v. Philadelphia National Bank, United States v. Phillipsburg National Bank*, and *United States v. Marine Bancorporation, Inc.,* all used multiple market share indicators. Finally, the consideration of business loans has received at least some support from the high court. In dissenting from the majority opinion in *United States v. Marine Bancorporation, Inc.*, Justices White, Brennan, and Marshall opined, "A main component of that cluster, and one which determines profits, is the ability to provide loans, and it seems to me that a prospect of competition for loans, whether based on deposits garnered in Spokane or elsewhere, has a substantial possibility of effecting deconcentration in at least one segment of the banking business."

The considerable variation in concentration mea-sures across product markets also casts doubt on two of the practices carried on in government antitrust circles since *United States v. Philadelphia National Bank*. Specifically, for small businesses it is unclear whether commercial loans are provided as part of a cluster of banking products and services (since out-of-market lenders are not likely to be providing all other parts of the cluster to these businesses) by local institutions and whether deposit concentration is an appropriate proxy for small business loan con-centration. Although the Court has held that out-of-market banks are not important, at least to small businesses (*United States v. Philadelphia National Bank)* and that, as a result of relationship banking, "the cluster has economic significance well beyond the various products and services involved" (*United*

States v. Phillipsburg National Bank), the financial services sector, its technology, and its customers' preferences may have changed enough that these findings are no longer valid. As credit scoring, disintermediation, and electronic distribution of banking services increase, out-of-market providers are likely to increase in importance. At the same time, local institutions are likely to remain significant, particularly for businesses that have need of coin and currency services. Further research into the effect of out-of-market lenders is needed to determine whether such lenders influence prevailing local loan rates, lend to a broad customer base within a given market, are more likely to garner local customers for nonloan products and services, or are more likely to establish a branch office than outside banks with no local loans.

Despite the need for additional research, using multiple measures of market concentration is likely to give a truer picture of market concentration, especially in marginal cases. Furthermore, if additional research indicates that the changes in structure due to out-of-market competitors result in changes in pricing or behavior, the Federal Reserve should consider subjecting the acquisition of an in-market institution by an out-of-market lender active in the local market to competitive review similar to that given to a merger of two in-market firms.[25]

Finally, the CRA data suggest that the traditional use of mitigating factors may understate remaining competition. Because of changes in the business of banking since *United States v. Philadelphia National Bank*, the Board of Governors of the Federal Reserve System has exhibited flexibility in its approach to antitrust matters by considering the particular factors of a case market-by-market. In some cases, the Board has considered mitigating factors such as remaining competition. The results of this study support the approach of giving close scrutiny beyond local-deposit-based concentration measures to markets that would be affected by a merger application.

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24. In 9.7 percent of the rural markets examined, the combined small business loan HHI is less than 1,800 when the Call Report small business loan HHI exceeds 1,800.

25. Cyrnak and Hannan (1999) compared deposit and combined small business loan HHIs in 98 metropolitan statistical areas and found a relatively low correlation (a Pearson correlation coefficient of 0.56) between them. Their results indicated that deposit-based HHIs performed as well, or better than, loan-based HHIs in determining business loan pricing. However, it is uncertain whether their results using urban data are applicable to rural markets. First, there is generally much greater overlap between the competitors with offices in a market and the competitors with loan originations in that market for urban markets than for rural markets. Second, rural markets tend to be less competitive than urban markets (when competitiveness is measured by market structure), so the price response to out-of-market competitors may be different. In addition, Cyrnak and Hannan did not control for individual borrower characteristics.

Structure-Conduct-Performance:
The Reigning Antitrust Paradigm and Alternatives

Antitrust analysis by both the federal bank regulators and the Department of Justice has its base in what is called the structure-conduct-performance approach. This approach, introduced and well explicated by Caves (1964), begins with theoretically based and empirically verified assertions that the number and market share of competitors in a product market influence the prices offered and other competitive behavior of the firms offering the product. Each will charge a profit-maximizing price, but that price will vary with the market's structure. At one extreme, a single provider will maximize its profit by selling at a price that extracts monopoly rents. At the other, in a market with many competitors, price will tend to equal the marginal cost of producing the product. In structures other than those at the ends of the monopoly-competitive continuum, pricing will become closer to monopoly pricing as the number of competitors becomes fewer and the market becomes more concentrated. Hannan (1991) formally models this paradigm specifically for markets with banking firms that offer multiple types of loans and deposits. His results follow those of many other descriptive applications; however, his findings are more detailed and offer guidelines for identifying variables to be controlled for in empirical work when the model is applied to banking markets.

Thus, in the structure-conduct-performance model, market structure influences the pricing conduct of sellers of a product as well as many other kinds of competitive conduct. When structure is concentrated, it is more likely that prices will be higher than marginal costs of producing a product and that predatory conduct of other sorts will occur.

This pricing and other anticompetitive conduct affects the way the market performs in bringing about prices and quantities of products sold in the market. As concentration increases toward monopoly, as prices increase, and as quantities of the product decline, other sellers and new products are deterred so that the users of the product are less well served by the producers. The market moves farther away from an optimum solution provided in a market with many sellers of similar size—that is, its performance declines. Out of this comes the concentration of antitrust authorities on market structure and seller conduct as keys to market performance.

There are other approaches to market performance that provide alternative forms of analysis and, at times, opposite conclusions. These tend to emphasize the dynamics of market development. While the structure-conduct-performance approach essentially takes structure as a given, these approaches go deeper to assess how the basic physical dimensions of production and their changes influence structure-conduct-performance and, again, structure.

The two most often presented take different paths. The contestable markets approach, developed by Baumol (1982), deals with the influence of possible competitors not currently operating in a local or product market but able to do so in the future at higher costs than current competitors. The approach thus focuses on the opportunities of out-of-market or fringe sellers who might sell in a market if, for example, prices were somewhat higher. The approach concludes that it is realistically possible for out-of-market fringe sellers to influence market conduct and performance because the threat of their entry limits the conduct of in-market sellers. Current structure may still be important, but more than static structural analysis is required to generate valid conclusions about likely market performance. If the contestable markets hypothesis holds for local banking markets, the out-of-market lenders could play the role of fringe sellers as depicted by this theory.

Another alternative, called the variable efficiency approach, is associated with Demsetz (1973). It turns the structure-conduct-performance approach on its head. In this approach, production and marketing efficiency play a major role in determining market structure. The more efficient firms gain the higher market shares and earn the higher profits. They do not, however, charge the higher prices. Their ability to produce more efficiently allows them to charge lower prices and gain market share. In the extreme, if economies of scale will allow a single seller to supply the full market at a cost lower than any number of other sellers, the market will both tend to be a monopoly market and have the lowest possible production costs for its output. In this

model, methods of production and marketing determine optimal market structure; moves away from this structure may reduce production efficiency and raise prices. If this theory best explains competition in local banking markets, the out-of-market competitors are the efficient producers of small business loans. Their lower cost structures in originating, underwriting, or monitoring loans, which may be due to better use of banking technologies such as credit scoring or electronic delivery, would allow them to enter the market and gain market share by charging lower prices. Additional research into the pricing practices of out-of-market lenders and the effect on local prices is necessary to determine whether this theory of competition holds.

Department of Justice Merger Guidelines

In order to identify mergers that deserve special analysis, the Antitrust Division of the Department of Justice has issued "guidelines" for consolidations (Board of Regents and U.S. Department of Justice 1995; U.S. Department of Justice and Federal Trade Commission 1997). These guidelines are stated in terms of the HHI explained in the box on page 42. The guidelines call for using a market's HHI and the change in the HHI caused by a proposed merger to decide whether the consolidation might have anticompetitive impacts. For most industries, addition of more than 50 points resulting in an HHI of 1000 or greater sends a warning. For banking, the guidelines recognize that local banks are not the only providers of bank services by using different benchmarks—an addition of 200 or more points resulting in a market HHI of 1800 or more signals danger.

REFERENCES

AUSUBEL, LAWRENCE M. 1991. "The Failure of Competition in the Credit Card Market." *American Economic Review* 81 (March): 50–81.

BAUMOL, WILLIAM J. 1982. "Contestable Markets: An Uprising in the Theory of Industry Structure." *American Economic Review* 72 (March): 1–15.

BERGER, ALLEN N., AND GREGORY F. UDELL. 1996. "Universal Banking and the Future of Small Business Lending." In *Universal Banking: Financial System Design Reconsidered,* edited by A. Saunders and I. Walters, 558–67. Chicago: Irwin.

BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM AND THE U.S. DEPARTMENT OF JUSTICE. 1995. "Bank Merger Competitive Review: Introduction and Overview."

CAVES, RICHARD E. 1964. *American Industry: Structure, Conduct, Performance.* Englewood Cliffs, N.J.: Prentice-Hall, Inc.

COLE, REBEL. 1998. "The Importance of Relationships to the Availability of Credit." *Journal of Banking and Finance* 22 (August): 959–77.

COLE, REBEL, JOHN WOLKEN, AND R. LOUISE WOODBURN. 1996. "Bank and Nonbank Competition for Small Business Credit: Evidence from the 1987 and 1993 Surveys of Small Business Finances." *Federal Reserve Bulletin* 82 (November): 983–95.

CYRNAK, ANTHONY W. 1998. "Bank Merger Policy and the New CRA Data." *Federal Reserve Bulletin* 84 (September): 703–15. <http://www.bog.frb.fed.us/pubs/bulletin/1998/998lead.pdf> (October 17, 2000).

CYRNAK, ANTHONY W., and TIMOTHY H. HANNAN. 1999. "Is the Cluster Still Valid in Defining Banking Markets? Evidence from a New Data Source." *Antitrust Bulletin* 44 (Summer): 313–36.

DEMSETZ, HAROLD. 1973. "Industry Structure, Market Rivalry, and Public Policy." *Journal of Law and Economics* 16 (April): 1–9.

DILLON, ED. 1997. "Are Deposits the Best Antitrust Measure?" *Bank Mergers and Acquisitions* 12, no. 16:1–4.

ELLIHAUSEN, GREGORY E., and JOHN D. WOLKEN. 1990. "Banking Markets and the Use of Financial Services by Small and Medium-Sized Businesses." *Federal Reserve Bulletin* 76 (October): 801–17.

———. 1992. Banking Markets and the Use of Financial Services by Households." *Federal Reserve Bulletin* 78 (March): 169–81.

FRAME, W. SCOTT. 1995. "Examining Small Business Lending in Bank Antitrust Analysis." Federal Reserve Bank of Atlanta *Economic Review* 80 (March/April): 31–40.

FRAME, W. SCOTT, ARUNA SRINIVASAN, and LYNN W. WOOSLEY. Forthcoming. "The Effect of Credit Scoring on Small Business Lending." *Journal of Money, Credit, and Banking.*

GRANT THORNTON LLC. 2000. *The Changing Community of Banking.* <http://www.grantthornton.com/resources/finance/banksurvey2000/survey00_4print.html> (November 30, 2000).

HANNAN, TIMOTHY H. 1991. "The Functional Relationship between Prices and Market Concentration: The Case of the Banking Industry." Board of Governors of the Federal Reserve System Finance and Economics Discussion Series Paper No. 169.

HOLDER, CHRISTOPHER L. 1993a. "Competitive Considerations in Bank Mergers and Acquisitions: Economic Theory, Legal Foundations, and the Fed." Federal Reserve Bank of Atlanta *Economic Review* 78 (January/February): 23–36.

———. 1993b. "The Use of Mitigating Factors in Bank Mergers and Acquisitions: A Decade of Antitrust at the Fed." Federal Reserve Bank of Atlanta *Economic Review* 78 (March/April): 32–44.

HYMEL, MICHAEL. 1994. "The Retail Bank CD Market." *Growth and Change* 25 (Fall): 427–44.

JACKSON, WILLIAM E., III. 1992. "Is the Market Well Defined in Bank Merger and Acquisition Analysis?" *Review of Economics and Statistics* 74, no. 4:655–61.

JACKSON, WILLIAM E., III, AND ROBERT A. EISENBEIS. 1997. "Geographic Integration of Bank Deposit Markets and Restrictions on Interstate Banking: A Cointegration Approach." *Journal of Economics and Business* 49 (July/August): 335–46.

KENNICKELL, ARTHUR B., AND MYRON L. KWAST. 1997. "Who Uses Electronic Banking?" Board of Governors of the Federal Reserve System Finance and Economics Discussion Series Paper No. 1997-35. <http://www.bog. frb.fed.us/pubs/feds/1997/199735/199735pap.pdf> (October 17, 2000).

KRAMER, ROBERT. 1999. "Mega-Mergers in the Banking Industry." Speech made at the American Bar Association Meeting, Antitrust Section, April.

KWAST, MYRON L. 1999. "Bank Mergers: What Should Policymakers Do?" *Journal of Banking and Finance* 23 (February): 629–36.

KWAST, MYRON L., MARTHA STARR-MCCLURE, AND JOHN D. WOLKEN. 1997. "Market Definition and the Analysis of Antitrust in Banking." Board of Governors of the Federal Reserve System Finance and Economics Discussion Series Paper No. 1997-52. <http://www.bog.frb.fed.us/pubs/feds/1997/199752/199752pap.pdf> (October 17, 2000).

PETERSEN, MITCHELL A., AND RAGHURAM G. RAJAH. 1994. "The Benefits of Lending Relationships: Evidence from Small Business Data." *Journal of Finance* 49, no. 1:3–37.

RADECKI, LAWRENCE J. 1998. "The Expanding Reach of Geographic Banking Markets." Federal Reserve Bank of New York *Economic Policy Review* 4 (June): 15–34. <http://www.ny.frb.org/rmaghome/econ_pol/698rad.htm> (October 17, 2000).

RHOADES, STEPHEN A. 1993. "The Herfindahl-Hirschman Index." *Federal Reserve Bulletin* 79 (March): 188–89.

SAMOLYK, KATHERINE. 1998. "Small Business Credit Markets: Why Do We Know So Little about Them?" *FDIC Banking Review* 10, no. 2:14–32. <http://www.fdic.gov/bank/analytical/banking/1998mar/small.pdf> (October 18, 2000).

U.S. DEPARTMENT OF JUSTICE AND FEDERAL TRADE COMMISSION. 1997. "Horizontal Merger Guidelines." <http://www.usdoj.gov:80/atr/public/guidelines/horiz_book/hmg1.html> (October 11, 2000).

WOOSLEY, LYNN W. 1995. "Agencies Explain Screening of Bank Acquisitions." Federal Reserve Bank of Atlanta *Financial Update* 8 (January–March): 1–3.

———. 1998. "Bank Consolidation Affects Lending in Southeastern Rural Markets." Federal Reserve Bank of Atlanta *Financial Update* 11 (July–September): 4–5. <http://www.frbatlanta.org/publica/finan_update/v11n3/fu_v11n3_4.html> (October 11, 2000).