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# Financial Evolution in Core and Peripheral Areas: Tracking Ohio's Metropolitan Experience

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**Abstract.** The wave of mergers, acquisitions and consolidations in the financial industry since 1994 changed the spatial environment. This paper investigates features of core and peripheral metropolitan areas in Ohio. From a spatial perspective, the Cleveland metropolitan area possesses financial characteristics more closely matched to those of a high-end benchmark financial-core such as Charlotte, North Carolina than to those of medium-size MSAs within the state. Findings suggest that medium-size MSAs are unlikely to be financial-core areas and that they are not evolving in that direction. Although peripheral areas lack a comparative advantage for developing depth and breath of financial services and are subject to a retailing function from large out-of-market institutions, there was no explicit evidence of funds drainage from medium-size peripheral areas because of compliance with the Community Reinvestment Act.

## 1. Introduction

The financial environment has evolved rapidly in the last twenty years. The Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994 represents de jure removal of geographic limits; since 1997, bank holding companies have been unifying interstate banks into branch networks. In 1999 the Gramm-Leach-Bliley Financial Services Modernization Act repealed provisions of the Glass-Steagall Act of 1933 that separated commercial and investment banking. Federal laws, along with the wave of mergers, acquisitions and consolidations, changed conditions in the financial industry.

Financial evolution has national and local economic effects. Cetorelli (1999) highlights competitive aspects at the national level which receive considerable attention; foremost in this respect are potential impacts of concentration in the banking industry. The elusiveness of regional financial processes, however, contributes to difficulties in measuring impacts across local markets.

Spatial change in financial characteristics is investigated by focusing on Ohio's large- and medium-size metropolitan areas. Do significant differences exist? Are medium-size metropolitan areas evolving into

peripheral areas? Are significant economic impacts associated with that distinction? Has funds drainage, a process by which core-area financial intermediaries optimally restrict credit to borrowers because of location, occurred in medium-size metropolitan areas?

Section 2 reviews spatial features of U.S. banking laws and financial evolution. Section 3 examines characteristics of financial core- and peripheral areas. Intra-state comparisons appear in Section 4. Economic implications are assessed in Section 5. Traditional regional measures emphasize spatial features and suggest impacts on urban employment and income from an evolving financial structure.

## 2. Banking Laws and Spatial Evolution

Banking is a regulated business activity. Federal laws influence behavior of depository institutions and shape the structure in the industry with respect to competition and geographic scope. Two laws have contributed significantly to spatial changes in the industry over the last ten years.

The Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994 phased out geographic restrictions imposed by the McFadden Act of 1927. It allowed adequately capitalized and managed bank

holding companies (BHCs) to acquire banks in any state. After June 1, 1997 it permitted interstate mergers between adequately capitalized and managed banks. Those mergers are subject to concentration limits, state laws, and evaluations under provisions of the Community Reinvestment Act (CRA) of 1977. Two sections of the Riegle-Neal Act directly affect the industry nationwide and within local markets.

### **Section 102**

#### **Interstate Bank Mergers**

- (B) *Statewide concentration limits. The responsible agency may not approve an application for an interstate merger transaction if -*
  - (ii) *the resulting bank, upon consummation of the transaction, would control 30 percent or more of the total amount of deposits of insured depository institutions in any such state.*

### **Section 109**

#### **Prohibition against Deposit Production Offices**

- (a) *Regulations. The appropriate Federal banking agency shall prescribe uniform regulation effective June 1, 1997, which prohibits any out-of-State bank from using any authority to engage in interstate branching pursuant to this title, or any amendment made by this title to any other provision of law primarily for the purpose of deposit production.*
- (b) *Guidelines for Meeting Credit Needs. Regulations issued under subsection (a) shall include guidelines to ensure that interstate branches operated by an out-of-State bank in a host State are reasonably helping to meet credit needs of the communities which the branches serve.*
- (c) *Limitations on Out-of-State Loans.*
  - (1) *Limitation. Regulation issued under subsection (a) shall require that, beginning no earlier than 1 year after establishment or acquisition of an interstate branch or branches in a host State by an out-of-State bank, if the appropriate Federal banking agency for the out-of-State bank determines that the bank's level of lending in the host State relative to the deposits from the host State (reasonably determinable from available information including the agency's sampling of the bank's loan files during an examination or such data as is otherwise available) is less than half the average of total loans in the host State relative to total deposits from the host State (as determinable from relevant sources) for all banks the home State of which is such State -*
    - (A) *The appropriate Federal banking agency for the out-of-state bank shall review the loan portfolio of the bank*

*and determine whether the bank is reasonably helping to meet the credit needs of the communities served by the bank in the host State; and*

*(B) If the agency determines that the out-of-State bank is not reasonably helping to meet those needs*

*(i) The agency may order that an interstate branch or branches of such bank in the host state be closed unless the bank provides reasonable assurances . . .*

*(ii) The out-of-State bank may not open a new interstate branch in the host State unless the bank provides reasonable assurances . . .*

The Riegle-Neal Act enhanced efficiency in banking by allowing banks to move across state lines, consolidate functions, and lower costs through economies of scale. For local areas there is some evidence that weaker banks lost ground to larger, more efficient banks in the years following passage of this law (Jayaratne and Strahan 1997). In short, industrial changes should have resulted in lower costs and higher economic growth in local areas in general. These results need not be uniform across local areas, however.

The Gramm-Leach-Bliley Financial Services Modernization Act of 1999 basically repealed the Glass-Steagall Act's separation of commercial banking and investment banking by allowing affiliations between banks and insurance underwriters. It also prohibited state actions that have the effect of preventing bank-affiliated firms from selling insurance on an equal basis with other insurance agents. New financial holding companies were authorized to underwrite and sell insurance and securities, to engage in commercial and merchant banking, and to invest in and develop real estate and other complimentary activities. Banks with national charters were also permitted to underwrite municipal bonds. Gramm-Leach-Bliley also amended the Community Reinvestment Act of 1977 by specifying that financial holding companies cannot be formed before their insured depository institutions receive and maintain a satisfactory CRA rating. This resulted in greater movement toward homogenization in the financial services industry.

The national landscape of banking changed rapidly during the 1990s, with a wave of "mega-mergers" the most notably observed phenomenon. Based on total assets, nationwide banking giants include: Bank of America, National Association (NA), the result of a 1998 merger between BankAmerica Corporation in San Francisco and Nations Bank Corporation in Charlotte, NC and Citibank NA, the commercial banking unit of Citigroup, Inc., the largest BHC in the nation. Bank of America's geographic reach is extensive, with 3,800 branches located in 27 states. It has an asset base

of more than \$580 billion, about 1.5 times the asset base of Citibank. That reach expanded with its purchase of Fleet Financial Group, in Providence, RI. As a unit of the largest BHC, Citibank has extensive reach, as well. Citigroup, Inc. resulted from the merger of Citigroup in New York City and Travelers Group in Connecticut. Citigroup, the largest financial services organization in the world, has operations in over 100 countries. Such large BHCs are “financial supermarkets” that offer customers services ranging from traditional retail banking to brokerage services to insurance. Such large institutions are sometimes referred to as large complex banking organizations (LCBOs).

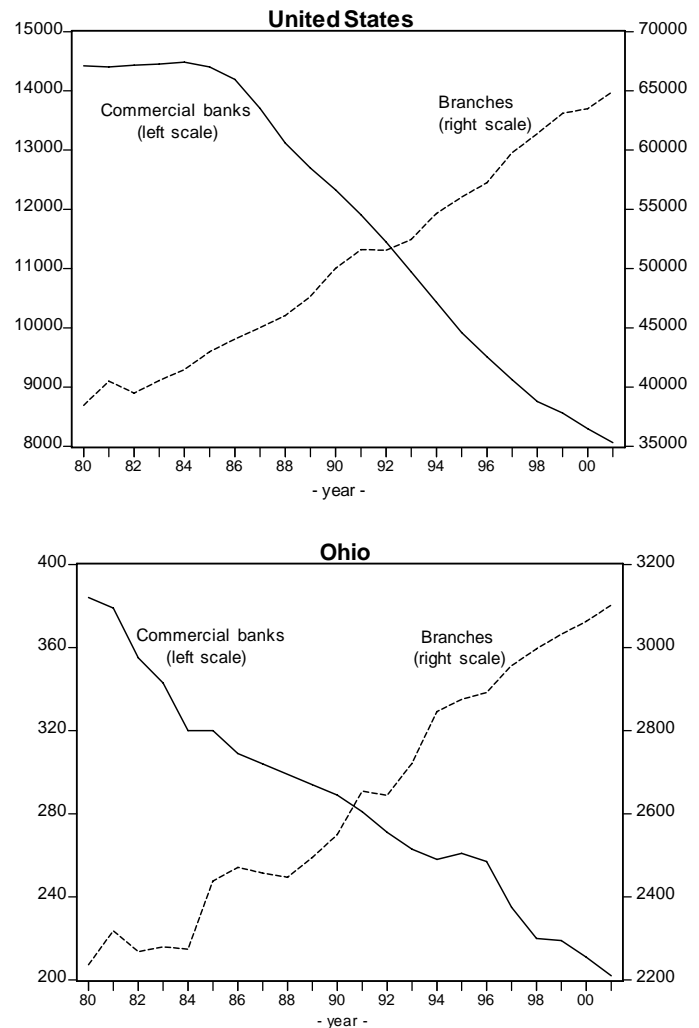
When banks throughout the country are ranked by size of the asset base, only one Ohio bank, Key Bank NA, with headquarters in Cleveland, is in the top 20; it ranked 12 in 2001. For the top twenty BHCs in 2001, however, three had headquarters in Ohio: National City Corporation (13) and Keycorp (14) in Cleveland and Fifth Third Bancorp (19) in Cincinnati. Each has a significant presence in Ohio’s urban areas.

The wave of mergers and consolidations in the 1980s and 1990s decreased the number of banks and increased branches. Banks fell by 44% nationwide and by 47% in Ohio. This downtrend is illustrated in Figure 1. By 2001, 8,062 commercial banks existed in the U.S.; 202, or 2.5%, were located in Ohio. That is nearly the same share that existed in the state two decades ago. The trend in branches is in the opposite direction. The number of branches rose 69% in the United States compared to only 39% in Ohio. At the end of 2001, the state had 202 institutions classified as commercial banks: 156 had branches; the others were unit banks. The 3,100 branches of commercial banks serving the state accounted for 4.8% of total branches nationwide in 2001. The state’s share is down from 5.8% in 1980.

Financial evolution has contributed to a larger share of deposits held by the biggest banks. DeYoung (1999) showed that the share of deposits in the ten largest banks nearly doubled from about 19% to 37% during the 1980s and 1990s. For the entire country, concentration did not increase in local markets (MSAs) because about two-thirds of large mergers were the market-extension type, basically a combination of banks operating in different regions. Market-extension mergers change the ownership of acquired banks without reducing the number of banks inside a local market.

The bank-merger wave resulted in fewer banks and a larger share of deposits for big depository institutions. Figure 2 shows the relatively large number of mergers in Ohio from 1980 to 2001. Market-extension mergers improved efficiency, lowered costs, and enhanced investment of bank assets. DeYoung (2000)

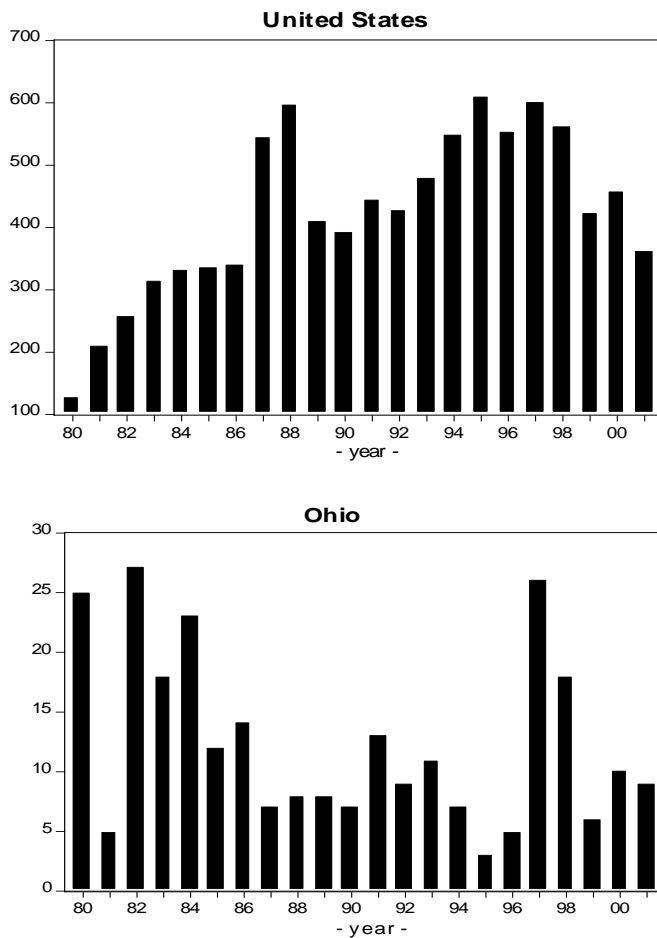
pointed out that, while large banks held a more prominent position nationwide compared to twenty years ago, concentration in local banking markets did not increase substantially throughout the country. Nevertheless, structural and competitive evolution is still underway, and local markets can and do vary from the observed national pattern.



**Figure 1.** Commercial Banks and Branches Source: FDIC, Historical Statistics on Banking

The intense process of consolidation and the decline in the number of commercial banks nationwide raised concerns about market power and dominance by large financial institutions that may inflict higher prices and welfare costs in local and regional markets. The U.S. Department of Justice, the Office of the Comptroller of the Currency, the Federal Deposit Insurance Corporation, and the Federal Reserve System take charge in enforcing U.S. antitrust laws in the

banking industry. These regulatory agencies are sensitive to dominant bank situations where a large bank controls the market while smaller, competitive-fringe banks follow.



**Figure 2.** Unassisted Mergers of Commercial Banks  
Source: FDIC, Historical Statistics on Banking

### 3. Core and Peripheral Financial Areas

From a regional science perspective, financial-core areas are locations where financial institutions and markets are concentrated (Porteous, 1995). New York City is an obvious financial center; with respect to financial markets, it is the center of the nation. No other urban area compares favorably to New York in scope and depth of financial activities. Some urban areas do possess key characteristics of a financial-core. The Charlotte-Gastonia-Rockhill MSA, for example, on the border of North and South Carolina evolved rapidly during the last two decades as it shifted from an older, industrialized, textile concentration that dominated its past. It is a representative financial-core area and three

features distinguish it for comparative purposes: industrial composition, location quotients, and headquarters.

Employment composition is a crude measure and no absolute threshold exists. As shown in Table 1, manufacturing industries accounted for 14 percent of employment in Charlotte. Finance and insurance accounted for a relatively high 10 percent of employment in the local area. Moreover, more than 6 percent of the area's employment is attributable to depository credit intermediation: banks, savings associations and credit unions. In financial activity, especially with respect to banking, Charlotte compares favorably with the New York metropolitan area.

Traditional location quotients provide more detailed information because they measure the share of employment in industry *i* within a local area relative to a national benchmark:  $LQ > 1$  indicates an above-average concentration of employment in an industry within the local market. That is certainly the case for financial industries in the Charlotte MSA. An earnings quotient, EQ, complements the traditional LQ. For a financial-core area such as Charlotte EQ is also considerably greater than 1, indicating financial activities accounted for a relatively high proportion of earnings in that urban area. These results strongly suggest that core areas will have  $LQ > 1$  and  $EQ > 1$  for financial activities, reflecting a high relative amount of development in the local market.

Furthermore, the Charlotte MSA is the location for large bank headquarters with significant national status, i.e., LCBOs. Bank of America, the largest bank in terms of total assets is located there. First Union National Bank, formerly the fourth largest bank also had its headquarters there. First Union Corporation and Wachovia Corporation merged in December 2001, making the new parent company, Wachovia Corporation, the fourth largest BHC in the nation with \$187 billion in deposits. Like Bank of America, Wachovia possesses extensive geographic reach: 2,800 full-service financial service offices and nearly 4,700 ATMs located in eleven east-coast states from Connecticut to Florida. Wachovia also lists 600 retail brokerage offices in 49 states. Moreover, the two LCBOs have large shares inside the Charlotte market: Bank of America with 53 percent of deposits and First Union National Bank with 28.4 percent.

The Charlotte MSA, therefore, possesses characteristics identified with a financial core. LCBOs dominate assets and liabilities in its financial sector. The area is marked by high LQs and EQs within the financial sector. Although it represents a high end for financial-core areas, the rapidly growing Charlotte MSA, with a 29 percent increase in population from 1990 to 2000,

**Table 1.** Financial Characteristics: Charlotte-Gastonia-Rockhill MSA

| Industry                         | Employment Share | Location Quotient | Earnings Quotient |
|----------------------------------|------------------|-------------------|-------------------|
| Manufacturing                    | 14.2%            | 1.02              | 1.06              |
| Finance and insurance            | 10.1%            | 1.85              | 1.46              |
| Depository credit intermediation | 6.2%             | 3.44              | 2.38              |

| Top 8 Institutions                | Headquarters    | Total Assets (millions) | Share of Deposits |
|-----------------------------------|-----------------|-------------------------|-------------------|
| Bank of America                   | Charlotte       | \$562,166               | 53.0%             |
| *First Union National Bank        | Charlotte       | 301,645                 | 28.4%             |
| Branch Banking & Trust Co.        | Winston-Salem   | 58,156                  | 3.5%              |
| *Wachovia Bank NA                 | Winston-Salem   | 72,117                  | 3.1%              |
| First Charter Bank                | Concord, NC     | 3,464                   | 2.7%              |
| Central Carolina Bank & Trust Co. | Durham          | 10,783                  | 2.2%              |
| First Citizens Bank & Trust Co.   | Raleigh         | 10,766                  | 1.2%              |
| **RBC Centura Bank                | Rocky Mount, NC | 14,076                  | 1.1%              |
|                                   |                 | \$1,033,123             | 95.2%             |

**Notes:** Location quotient is the traditional ratio of the employment share in the area to the share in the nation. Earnings quotient is the ratio the earnings share in the area/earnings share in the nation.

\*Merger December 2001.

\*\*Subsidiary of the Royal Bank of Canada Holding Company, headquarters in Montreal.

Sources: FDIC, *Summary of Deposits*. U.S. Department of Commerce, Bureau of Economic Analysis, *Regional Economic Information System 1969-2002*, CA25N and CA05N, May 2004.

does provide a clear benchmark for assessing features in other metropolitan areas as they evolved in the period of financial liberalization following the Riegle-Neal Act.

Within states, core and peripheral areas may not be obvious, however. Measures such as employment composition, LQs, EQs, and headquarters provide information to identify structural characteristics across markets. Financial-peripheral areas are likely to exhibit low absolute shares of employment in financial services along with  $LQ < 1$  and  $EQ < 1$  in financial sector. A low concentration for financial headquarters can also be expected. Financial-peripheral areas are likely to be dependent on branches of core-based institutions for financial services within the local market.

#### 4. Intra-state Comparisons

Where do medium-size MSAs fit in the financial structure of a state? Summary statistics are outlined in Table 2. The large Cleveland metropolitan area has an employment share for the financial sector well below that of the benchmark Charlotte MSA. For depository credit intermediation, the shares are 1.9 percent for the

former and 6.2 percent for the latter. The state's medium-size MSAs have employment shares in financial industries that are even lower.

During the 1990s, the Dayton and Toledo MSAs experienced virtually no population growth, and employment growth in financial industries was relatively slow. The result is small shares for depository credit intermediation in each of the medium-size MSAs. The medium-size MSAs in Ohio are very similar with respect to employment in the financial sector.

The number of financial institutions and offices (branches) linked with population are also shown in Table 2. As the smallest of the four metropolitan areas, Toledo has fewer FDIC-insured depository institutions and offices. The branching density measure, however, reveals that Toledo is well serviced by financial institutions, with density close to that of the Cleveland financial core.

Keybank, National City Bank, and Fifth Third Bank have a significant presence in each of the four metropolitan areas (see, Table 3). Those three large institutions are affiliates of BHCs that are in the top 25 nationwide. They are major forces in the state's financial sector and in the medium-size MSAs.

**Table 2.** Financial Characteristics: Ohio Metropolitan Areas

|  | Akron   | Cleveland | Dayton  | Toledo  |
|--|---------|-----------|---------|---------|
| Population (2000)                              | 695,781 | 2,250,096 | 950,177 | 618,111 |
| Change from 1990                               | 5.6%    | 2.1%      | -0.2%   | 0.6%    |
| Total employment (2001)                        | 397,373 | 1,327,204 | 517,030 | 409,502 |
| Change from 1990                               | 17.0%   | 9.1%      | 5.4%    | 13.0%   |
| Employment share                               |         |           |         |         |
| Finance and insurance <sup>a</sup>             | 3.6%    | 5.6%      | 3.4%    | 3.0%    |
| Depository credit intermediation <sup>b</sup>  | 1.5%    | 1.9%      | 1.0%    | 1.1%    |
| Number of FDIC-insured depository institutions | 28      | 52        | 29      | 20      |
| Number of Offices                              | 221     | 731       | 290     | 209     |
| Branching Density <sup>c</sup>                 | 3148    | 3078      | 3276    | 2957    |

**Notes:** a. North American Industrial Classification System (NAICS) 52.

b. NAICS 5221 includes commercial banks, savings institutions, credit unions.

c. Branching density = population/number of offices.

Sources: Federal Deposit Insurance Corporation, *Summary of Deposits*, June 30, 2001. U.S. Department of Commerce, Bureau of Economic Analysis, *Regional Economic Information System 1969-2002*, CA25 and CA25N, May 2004. U.S. Census Bureau, *Metropolitan Business Patterns (NAICS)*, 2001.

Akron, Dayton and Toledo depend heavily on branches of depository institutions with headquarters in other areas, especially those located in the state's financial core area of Cleveland. Table 3 presents the top-8 financial institutions in each metropolitan area. Large banks dominate. Keybank, the twelfth largest bank in the country, has a significant presence in each area. With respect to deposits it ranks number one in Cleveland, four in Akron, four in Dayton, and three in Toledo.

National City Bank also has large shares of deposits: Cleveland (2), Akron (3), Dayton (3) and Toledo (6). Fifth Third Bank, with headquarters in Cincinnati, has a strong presence in western Ohio, ranking first in shares of deposits in Dayton and Toledo. Furthermore, the top-8 institutions accounted for more than 90 percent of deposits in the Toledo MSA, which is, by far, the biggest share by the top-8 among the four areas.

The two headquarters located inside the Toledo MSA, Sky Bank and Farmers & Merchants State Bank, accounted for only 18% of total deposits of the top-8, FDIC-insured institutions. The bulk of deposits in Toledo flowed to banks with headquarters elsewhere.

The three banks from Cleveland: Keybank, Charter One Bank, and National City Bank, absorbed about one-third of deposits in Toledo through seventy-one offices. Fifth Third Bank, the institution with the largest share of deposits, served the Toledo market through thirty-four offices. With respect to assets, the three banks from Cleveland accounted for 62 percent of total assets for the top-8 institutions shown in Table 3. The two banks located inside the Toledo market accounted for only one percent of those total assets.

The largest depository institution with headquarters in Toledo is Sky Bank-MidAm Region, an affiliate of the BHC, Sky Financial Group. While this BHC has aggressively acquired banks in Pittsburgh and Cleveland, it remains small in terms of the size of financial institutions with extensive geographic reach. Its deposits were just 11 percent of the deposits reported by National City Corporation in Cleveland, the largest BHC with affiliates in the medium-size MSAs. In 2001 total assets of Sky Financial Group amounted to only 7.6% of assets reported by National City Corporation. Although Sky Financial Group's acquisition of Metropolitan Financial Corporation in Cleveland moved it

**Table 3.** Deposit Shares, Top-8 FDIC-insured Depository Institutions, 2001

| Location and Institution               | Number of<br>Offices | Deposits<br>(millions) | Market<br>Share |
|--|----------------------|------------------------|-----------------|
| <b>Akron:</b>                          |                      |                        |                 |
| Firstmerit Bank NA                     | 37                   | \$2,561                | 29.7%           |
| Bank One NA                            | 21                   | 1,080                  | 12.5%           |
| National City Bank                     | 27                   | 1,061                  | 12.3%           |
| Keybank NA                             | 17                   | 569                    | 6.6%            |
| Ohio Savings Bank, F.S.B.              | 6                    | 492                    | 5.7%            |
| Charter One Bank, F.S.B.               | 16                   | 486                    | 5.6%            |
| Fifth Third Bank                       | 17                   | 465                    | 5.4%            |
| Huntington National Bank               | 9                    | 306                    | 3.6%            |
| Sum                                    | 150                  | 7,020                  | 81.4%           |
| <b>Cleveland:</b>                      |                      |                        |                 |
| Keybank NA                             | 72                   | \$11,860               | 22.6%           |
| National City Bank                     | 84                   | 10,776                 | 20.6%           |
| Third Federal Savings and Loan Assn.   | 25                   | 4,594                  | 8.8%            |
| Key Bank, USA NA                       | 1                    | 3,380                  | 6.5%            |
| Charter One Bank, F.S.B.               | 56                   | 3,255                  | 6.2%            |
| Firstmerit Bank NA                     | 68                   | 2,515                  | 4.8%            |
| Fifth Third Bank                       | 58                   | 2,136                  | 4.1%            |
| Firststar Bank NA                      | 3                    | 1,896                  | 3.6%            |
| Sum                                    | 437                  | 40,412                 | 77.2%           |
| <b>Dayton:</b>                         |                      |                        |                 |
| Fifth Third Bank                       | 57                   | \$2,427                | 24.0%           |
| Bank One NA                            | 33                   | 1,615                  | 16.0%           |
| National City Bank                     | 42                   | 1,381                  | 13.6%           |
| Keybank NA                             | 26                   | 842                    | 8.3%            |
| Firststar Bank NA                      | 29                   | 632                    | 6.2%            |
| Provident Bank                         | 10                   | 557                    | 5.5%            |
| Security National Bank & Trust Company | 14                   | 475                    | 4.7%            |
| Liberty Savings Bank, F.S.B.           | 13                   | 323                    | 3.2%            |
| Sum                                    | 224                  | 8,252                  | 81.5%           |
| <b>Toledo:</b>                         |                      |                        |                 |
| Fifth Third Bank                       | 34                   | \$2,044                | 27.5%           |
| Sky Bank-MidAm Region                  | 34                   | 991                    | 13.3%           |
| Key Bank National Association          | 25                   | 972                    | 13.1%           |
| Charter One Bank, F.S.B.               | 20                   | 893                    | 12.0%           |
| Huntington National Bank               | 24                   | 685                    | 9.2%            |
| National City Bank                     | 26                   | 632                    | 8.5%            |
| Farmers & Merchants State Bank         | 6                    | 350                    | 4.7%            |
| Standard Federal Bank                  | 9                    | 285                    | 3.8%            |
| Sum                                    | 178                  | 6,852                  | 92.1%           |

**Notes:** NA is National Association.

Source: FDIC, *Summary of Deposits*, June 30, 2001.



to the \$13 billion asset level, it is a relatively small BHC whose behavior is not likely to change the peripheral area status of the medium-size Toledo MSA.

Concentration in banking increased in each of the MSAs after the passage of the Riegle-Neal Act of 1994. Application for merger is approved if the merger does not violate the 1800/200 rule used by the U.S. Department of Justice. This rule applies the Herfindahl-Hirschman Index (HHI) as a measure of concentration to assess bank-merger situations. The HHI formula is specified in equation 1 as follows:

$$HHI_k = \sum MSD_i^2 \quad (1)$$

where  $MSD_i$  is the market share of deposits for bank  $i$  in market area  $k$ .

The HHI accounts for the distribution of market share and the number of banks in the local market. Its

high-end extreme – a monopoly bank controlling 100 percent of the local market – is 10,000; it moves down as the number of banks increases and market shares decline. In short, if a post-merger HHI is below 1800 and the increase in HHI pre- to post-merger is less than 200, then regulators conclude that the merger does not violate the working 1800/200 rule; that is, significant anti-competitive impacts are not present in the local market.

HHI can also be used to compare concentration across local market areas and over time. As shown in Table 4, the HHI rose in all four areas from 1994 to 2001. The biggest increase occurred in Toledo. This suggests movement toward greater concentration in deposits for that area. In 2001, the medium-size Toledo MSA had the highest HHI; the larger Cleveland MSA had the lowest concentration.

**Table 4.** Measures of Concentration, Ohio Metropolitan Areas

|      | Herfindahl-Hirschman Index (HHI)            |           |        |        |
|------|---|-----------|--------|--------|
|      | Akron                                       | Cleveland | Dayton | Toledo |
| 2001 | 1374  | 1192      | 1216   | 1447   |
| 1994 | 1342  | 1023      | 1036   | 1025   |
|      | Share of Total Deposits, Top-3 Institutions |           |        |        |
|      | Akron                                       | Cleveland | Dayton | Toledo |
| 2001 | 54.5%                                       | 52.0%     | 53.6%  | 53.9%  |
| 1994 | 55.6%                                       | 48.4%     | 48.8%  | 42.6%  |

**Notes:** HHI calculations from equation (1).  
Source: FDIC, *Summary of Deposits*, June 30, 1994 and 2001.

The share of deposits in the top-3 institutions confirms the implication about movement toward concentration. The top-3 institutions accounted for more than one-half of total deposits in each MSA, and the largest increase occurred in Toledo. Table 4 reveals greater concentration in deposits for the medium-size MSAs than for the larger financial-core area of Cleveland. For medium-size metropolitan areas this movement represents a significant structural change within the financial sector in the period of liberalization following the Riegle-Neal Act.

Location quotients confirm the core/peripheral distinction within the state. As shown in Table 5, the four Ohio MSAs employed about 40% more in manufacturing industries than the nation as a whole. In the financial sector,  $LQ > 1$  for Cleveland, but  $LQ < 1$  for

the medium-size MSAs. The EQ for Cleveland is also greater than one and well above the EQs for the medium-size MSAs. An important result from comparing these measures is that the medium-size MSAs are less concentrated in financial activities than the larger financial-core area. Employment and income generated by financial businesses are relatively smaller in the peripheral areas. Moreover, Cleveland's EQ for depository credit intermediation, which includes commercial banks, savings associations and credit unions, is higher than its EQ for manufacturing: 1.39 compared to 1.32. That is certainly not the case for the peripheral-financial areas. Although Cleveland's LQs and EQs are below those of Charlotte, the measures examined clearly reveal Cleveland as the financial-core area within the state.

**Table 5.** Location Quotients, Ohio Metropolitan Areas

| Industry                         | Akron | Cleveland | Dayton | Toledo |
|----------------------------------|-------|-----------|--------|--------|
| Manufacturing                    | 1.43  | 1.37      | 1.41   | 1.36   |
| Fabricated metal products        | 2.33  | 2.92      | 1.29   | 1.83   |
| Industrial machinery & equip.    | 2.05  | 1.85      | 3.32   | .99    |
| Transportation equipment         | .79   | 1.44      | 3.14   | 3.65   |
| Finance and insurance            | .73   | 1.11      | .63    | .57    |
| Depository credit intermediation | .84   | 1.06      | .55    | .60    |
| Earnings quotient (EQ)           | .53   | 1.39      | .78    | .52    |
| Business services                | .79   | .89       | 1.12   | .89    |
| Health services                  | 1.14  | 1.26      | 1.28   | 1.35   |

Sources: U.S. Department of Commerce, Bureau of Economic Analysis, *Regional Economic Information System 1969-2002*, CA05N, May 2004.  
U.S. Department of Labor, Bureau of Labor Statistics (Economy.com), [www2.fdic.gov/recon](http://www2.fdic.gov/recon).  
U.S. Census Bureau, *Metropolitan Business Patterns (NAICS)*, 2001.

## 5. Economic Implications

Mergers, acquisitions, and consolidations of depository institutions are part of the ongoing process of financial liberalization. Hamid and Satyendra (1994) showed that technological change and economies of scale support consolidation of regional banks. Depository institutions may perform not only the traditional intermediation function but may also be part of a basic process with export potential. Consequences of an evolving financial structure on a local economy are not clear, however. Several factors appear important: the flow of funds, local financial concentration, in-market vs. out-of-market bank ownership, and possible funds drainage.

With fewer and bigger banks accounting for larger shares of local deposits, concerns arise about differences in the local market between “transaction-based” lending, dominant at large banks, and “relationship” lending, which is widespread at smaller banks. In processing loan applications, for example, a transaction-based procedure relies on financial statements of borrowers that are easily obtained; larger banks with out-of-market headquarters find this approach convenient and more efficient. Smaller banks with local headquarters may have better access to local information and may have a commitment to development in the area. Their relationship-lending practices are more likely to be based on information about local business conditions that seems imprecise and not measurable in a traditional economic sense. The more intense competitive environment following the Riegle-Neal Act of

1994 suggests that smaller banks’ relationship-lending must be profitable, however.

### *Theoretical Propositions and Empirical Specifications*

Theoretical research and empirical studies suggest a range of possible impacts on local markets linked to changes in the financial sector. Dow (1987), for example, not only specified a flow of funds proposition that highlights the intermediation role for local depository institutions but also introduced confidence in local assets as a determinant of supply and demand for credit. Important factors are captured in equation 2 as follows:

$$LF_k = \mu(r, i_{o,k}, s_k) \beta(l_k, p_k, C_k) \quad (2)$$

where  $r$  is the reserve requirement  $i_{ok}$  are the propensities of depository institutions to invest outside area  $k$ ,  $s_k$  is the propensity of the public to spend in area  $k$ ,  $l_k$  are liabilities of the national monetary authority,  $p_k$  is the exogenous component of the balance of payments for  $k$ , and  $C_k$  is the demand for credit in area  $k$ .

LF is multi-factor specification of a local supply of funds, with  $\mu$  and  $\beta$  representing functions for the local multiplier and monetary base. LF is endogenously determined by local behavioral factors to some extent.  $C_k$  and  $i_{o,k}$  represent two important factors for examining behavior of depository institutions on local markets.

A rise in demand for credit,  $C_k$ , can be met by local financial institutions borrowing outside the area and then lending locally; this increases LF within the local

market. If financial institutions lend outside the local area, then LF decline as  $i_o$  increases. A change in  $i_o$  depends, however, on behavior of management in depository institutions. Expectations of higher returns outside an area, for example, lead to an increase in  $i_o$  and a drop in LF inside the local market. Post-1994 banking liberalization, followed by a more competitive situation, expands the spatial search for higher rates of return and potentially increases  $i_o$ .

Total deposits (TD), therefore, can be used to satisfy local credit demand ( $C_k$ ) or for investment outside a local market ( $I_o$ ). Private, profit-seeking financial institutions, with multi-area, multi-state affiliates search for the highest returns. In a spatially liberalized environment, funds are more likely to move out of local markets to locations with higher returns. For peripheral areas, the propensity to invest outside may be higher because the commitment to the local economy may be lower than in the core area where headquarters are located and where key management decisions are made. Funds drainage may actually be optimal for financial institutions with large spatially dispersed branch networks, but it is certainly not optimal from a local-market perspective, especially where below-average rates of return exist. This, of course, was not a major problem in the geographically restricted environment before liberalization.

Measuring important factors is far from straightforward, however. The theoretical concept of propensity to invest outside an area ( $i_o$ ) cannot be measured directly. It represents expectations as well as private financial business decisions. The nature of the process underlying such decisions is nebulous at best in the rapidly evolving financial industry.

A local loan-to-deposit ratio in area  $k$ , specified in equation 3 captures some effects.

$$LN_k/TD_k = LN_k/(C_k + I_{o,k}) = C_k/(C_k + I_{o,k}) \quad (3)$$

A lower loan-to-deposit ratio in area  $k$ , for example, represents a crude proxy for relatively lower confidence in the local market and for more investment of local funds outside the area ( $I_o$ ). Unfortunately, consolidation of financial institutions and their balance sheets after 1997, according to provisions of the Riegle-Neal Act of 1994, removed the geographic designation from loan data reported on the asset side of balance sheets in the Report of Conditions, i.e., bank call reports, filed by depository institutions. Consolidated reports come from headquarters now. They include assets and liabilities for the entire institution. A bank's branches in metropolitan areas are not required to report publicly loan data with specific geographic designations. The loss of geographic specification is a

paradox for regional analysis identified by Kozlowski (1999): less financial information is available for local market areas in the information age. This is a direct consequence of the Riegle-Neal Interstate Branching and Banking Efficiency Act of 1994 which resulted in more competition and lower costs in the industry nationwide, but less information about specific market areas.

Although it is difficult to measure impacts of the evolving financial structure directly, Collender and Shaffer (2001) investigated the phenomenon of banking concentration in metropolitan areas throughout the U.S. They specified a variety of structural features in equation 4 that affect growth of local income.

$$gY_{0,T} = \alpha + \beta_1 NIB_0 + \beta_2 NXB_0 + \beta_3 XTB_0 + \beta_4 DIB_{T,0} + \beta_5 DXB_{T,0} + \beta_6 DDEP_{T,0} + \gamma_1 DCP_0 + \gamma_2 LEDU_0 + \gamma_3 LPOP_0 + \gamma_4 LRPCI_0 + \gamma_5 HHI_0 + \varepsilon \quad (4)$$

where,  $gY_{0,T}$  is the geometric mean of annual growth rates of real per capita income from the initial time 0 to the end of the period  $T$ ,  $NIB_0$  is the number of offices of banks headquartered in the market at the start of the sample period,  $NXB_0$  is the number of local branches of banks headquartered outside the market at the start of the sample period,  $XTB_0$  is the ratio of the out-of-market to in-market owned bank offices at the start of the sample period,  $DIB_{T,0}$  is the ratio of the number of in-market owned bank offices at 0 to the number at  $T$ ,  $DXB_{T,0}$  is the ratio of the number of out-of-market owned bank offices at 0 to the number at  $T$ ,  $DDEP_{T,0}$  is the change in share of local deposits accounted for by out-of-market owned banks from time 0 to  $T$ ,  $LEDU_0$  is the logarithm of the percentage of total adult population having at least 4 years of college (a proxy for the quality of human capital),  $LPOP_0$  is the logarithm of the population in the local market,  $LRPCI_0$  is the logarithm of real per capita personal income in the local market, and  $HHI_0$  is the Herfindahl-Hirschman Index of deposits in the local market.

The regression statistics outlined in Table 6 show greater significance for 1984 to 1996 than for the earlier years of 1973 to 1984. The empirical results reject the hypothesis that long-run growth of real per capita income is independent of local banking structure, a conclusion consistent with the theoretical consensus in regional finance. Moreover, market concentration for total deposits, captured by HHI, had a significantly positive association with growth of real per capita income during the 1984-1996 period. Out-of-market bank mergers and/or acquisitions, therefore, do not necessarily impede economic growth in urban markets.

**Table 6.** Collender/Schaffer Long-run Metropolitan Growth Model

| Time period             | 1973-1984 | 1984-1996 |
|-------------------------|-----------|-----------|
| Observations            | 260       | 264       |
| Adjusted R <sup>2</sup> | .3107     | .3058     |
| Intercept               | .0514*    | .0442*    |
| NIB                     | -1.56E-6  | 4.21E-6*  |
| NXB                     | 8.36E-6   | -9.58E-6  |
| XTB                     | -.0037    | -.0044**  |
| DDEP                    | .0056**   | .0028***  |
| DIB                     | -6.1E-5*  | 1.11E-5   |
| DXB                     | 4.53E-7   | -4.27E-6* |
| LPOP                    | .0017*    | .0011**   |
| LEDU                    | .0088*    | .0032**   |
| LRPCI                   | -.0187*   | -.0150*   |
| DPC                     | .0014**   | .0004**   |
| HHI                     | -.0112*   | .0133*    |

Two-tailed significance levels: \*.01, \*\*.05, \*\*\*.10.

Source: Collender and Shaffer (2001), Table 3, 2001, p. 240

Other specific findings for metropolitan areas include:

1. The change in the ratio of bank offices owned-in-market is not significant for 1984-1996.
2. The change in the ratio of bank offices owned out-of-market has a negative and statistically significant effect for 1984-1996.
3. The share of deposits controlled by out-of-market owned banks has a statistically significant negative effect for 1984-1996.
4. The combined effect of bank offices owned in-market vs. out-of-market shows a decrease in growth of real per capita income associated with out-of-market owned bank offices in MSAs. The quantitative impact is small, however.

Theoretical deductions and empirical tests suggest that increased concentration, measured since 1994 in Ohio's urban markets (Table 4), does not necessarily indicate adverse economic consequences. A greater share of out-of-market bank offices does seem to increase the potential for negative effects, however. Such consequences would be more significant if the propensity to invest outside the local area ( $i_o$ ) actually rose. The probability of such negative effects appears to have risen for all peripheral areas, suggesting that funds drainage may occur as depository institutions search for higher returns. Compliance with federal regulations limits that effect, however.

### Legal Compliance

Funds drainage is addressed indirectly through compliance with laws governing banking. The Community Reinvestment Act (CRA) of 1977 is important in this respect. Congress enacted the CRA to encourage federally insured banks and thrift institutions to address the credit needs within their communities, including low- and moderate-income residents. The CRA requires individual FDIC-regulated banks and savings associations to undergo CRA compliance examinations and performance evaluations. They receive ratings that are public information.

Sections 2901 and 2903 highlight important provisions of the CRA.

### Sec. 2901.

#### *Congressional findings and statement of purpose.*

*The Congress finds that - (1) regulated financial institutions are required by law to demonstrate that their deposit facilities serve the convenience and needs of the communities in which they are chartered to do business; (2) the convenience and needs of communities include the need for credit services as well as deposit services; and (3) regulated financial institutions have continuing and affirmative obligation to help meet the credit needs of the local communities in which they are chartered. (b) It is the purpose of this chapter to require each appropriate Federal financial supervisory agency to use its authority when examining financial institutions, to encourage such institutions to help meet the credit needs of the local communities in which they are chartered consistent with the safe and sound operation of such institutions.*

### Sec. 2903.

#### *Financial institutions; evaluation*

*In general. In connection with its examination of a financial institution, the appropriate Federal financial supervisory agency shall - (1) assess the institution's record of meeting the credit needs of its entire community, including low- and moderate-income neighborhoods, consistent with the safe and sound operation of such institution; and (2) take such record into account in its evaluation of an application for a deposit facility by such institution. (b) Majority-owned institutions In assessing and taking into account, under subsection (a) of this section, the record of a nonminority-owned and nonwomen-owned financial institution, the appropriate Federal financial supervisory agency may consider as a factor capital investment, loan participation, and other ventures undertaken by the institution in cooperation with*

*minority- and women-owned financial institutions and low-income credit unions provided that these activities help meet the credit needs of local communities in which such institutions and credit unions are chartered.*

The Gramm-Leach-Bliley Financial Services Modernization Act of 1999 also requires public disclosure of bank-community CRA-related agreements. It does grant some regulatory relief to small depository institutions by reducing the frequency of CRA examinations if a bank received outstanding or satisfactory ratings in previous examinations. In short, the Gramm-Leach-Bliley Act strengthened the CRA in the new, more competitive, less spatially restricted financial environment.

From a regional perspective, federal law addresses the issue of a rise in  $i_o$  to some extent by limiting funds drainage through regulations that specify clearly that depository institutions must serve the communities in which they take deposits. Section 109 of the Riegle-Neal Act prohibits operation of deposit-production offices by out-of-state banks; this is a direct reference to the issue of funds drainage from communities. The Gramm-Leach-Bliley Act of 1999 requires public disclosure. It is also important to note that depository institutions are regulated private business and that, while the Riegle-Neal and Gramm-Leach-Bliley Acts represent further moves toward de-regulation in the industry, the laws do recognize and strengthen the principles of serving communities contained in the original Community Reinvestment Act of 1977.

The CRA requires appropriate supervisory agencies of depository institutions to assess institutions' performance for CRA compliance. The Federal Financial Institutions Examination Council points out that a financial institution's performance in helping to meet credit needs of its community is evaluated through information about the institution: its capacity, constraints and business strategies, its community, demographic and economic data, lending, investment, and service opportunities, and its competitors and peers (FFIEC 2002). Four ratings are used and reported after examinations: outstanding, satisfactory, needs to improve, and substantial noncompliance. The FFIEC also indicates that for an interstate bank, federal bank supervisory agencies are required by law to evaluate an institution's CRA performance in each state and metropolitan areas in which it has branches in addition to providing an overall rating for the bank's performance. A bank's performance in these areas is appropriately weighted to determine its final CRA rating.

CRA ratings for major depository institutions in the medium-size Toledo MSA are shown in Table 7.

The six institutions have headquarters in other locations but accounted for 74 percent of total deposits in the local market. There were no unsatisfactory CRA ratings for this group from 1990 to 2000. Three institutions: Keybank, National City Bank, and Standard Federal Bank, received outstanding ratings at each examination. In short, out-of-market owned bank branches were meeting the credit needs of the community according to provisions contained in the CRA. Within this medium-size peripheral area, therefore, the intermediation function of depository institutions was measured as more than adequate. Therefore, while the probability of funds drainage may have risen for all peripheral areas, there is no direct evidence suggesting that has occurred in Ohio's metropolitan areas.

## 6. Findings and Conclusions

From a spatial perspective, the Cleveland metropolitan area possesses financial characteristics that more closely match those of the high-end benchmark financial-core of Charlotte, North Carolina than those of medium-size MSAs within the state. The results from measurements in Ohio show that peripheral areas have location quotients for employment and earnings that were considerably below one. That reflects the lack of depth in financial activities in such areas.

In addition, measures of banking concentration rose in peripheral areas as liberalization after the Riegle-Neal Act of 1994 led to greater dominance by large institutions with headquarters elsewhere. This suggests that business development in peripheral areas is less likely to occur in the financial sector because such areas do not seem to possess a comparative advantage for enhancing depth and breadth of financial activities. Intense competition in the rapidly evolving financial environment contributes to consolidation of depository institutions which seems to enhance business development prospects in financial-core areas.

The results also show that medium-size peripheral MSAs are a mixture of large depository institutions and smaller community banks. That is not unusual, but out-of-market ownership adds a behavioral impact: larger institutions operate retail outlets (branches) in local market areas while major decisions occur outside the area. Although a large financial retailing function may be more efficient nationwide, it does affect employment and income in peripheral areas. Within Ohio, the low location quotients for the medium-size MSAs compared to the financial-core area of Cleveland highlight those effects.

**Table 7.** Bank Ratings under the Community Reinvestment Act

| Institution  | Headquarters | Exam Year | Rating       |
|--|--------------|-----------|--------------|
| Fifth Third Bank                                       | Cincinnati   | 2001      | Satisfactory |
| <sup>a</sup> Fifth Third Bank of Northwestern Ohio, NA | Toledo       | 1998      | Satisfactory |
|  |              | 1996      | Satisfactory |
|  |              | 1993      | Satisfactory |
|  |              | 1991      | Satisfactory |
| Keybank National Association                           | Cleveland    | 1999      | Outstanding  |
|  |              | 1996      | Outstanding  |
| <sup>b</sup> Society National Bank                     |              | 1994      | Outstanding  |
|  |              | 1990      | Outstanding  |
| Charter One Bank, F.S.B.                               | Cleveland    | 1998      | Satisfactory |
|  |              | 1995      | Satisfactory |
|  |              | 1993      | Satisfactory |
|  |              | 1991      | Satisfactory |
| Huntington National Bank                               | Columbus     | 1999      | Satisfactory |
|  |              | 1996      | Satisfactory |
|  |              | 1994      | Satisfactory |
| National City Bank                                     | Cleveland    | 2000      | Outstanding  |
| <sup>c</sup> National City Bank Northwest              | Toledo       | 1996      | Outstanding  |
|  | Toledo       | 1993      | Outstanding  |
| Standard Federal Bank                                  | Troy, MI     | 1998      | Outstanding  |
|  |              | 1995      | Outstanding  |
|  |              | 1993      | Outstanding  |
|  |              | 1991      | Outstanding  |

a. Now an affiliate of Fifth Third Bank with headquarters in Cincinnati.

b. Acquired by Keybank NA.

c. Now an affiliate of National City Bank Ohio with headquarters in Cleveland

Source: Federal Financial Institutions Examination Council, *INTERAGENCY CRA RATINGS*.

Although the peripheral areas examined lacked a comparative advantage for developing financial services in a traditional export-base sense, there was no explicit evidence of funds drainage from peripheral areas. Compliance with the Community Reinvestment Act of 1977 requires sensitivity to local credit demands by all depository institutions. CRA ratings revealed that large out-of-market institutions had good records in serving the credit demands of peripheral areas. Out-of-market, large depository institutions appear to serve peripheral areas with a traditional intermediation function. Loans through retail outlets of institutions with out-of-market headquarters are not restricted by local deposits, however; funds can flow through a transaction-lending process to borrowers at

locations where returns are highest. Medium-size peripheral areas are certainly not excluded from that flow of funds. Moreover, federal law and compliance with regulations require depository institutions to continue to perform that function.

A key issue for future economic development is the role of the financial sector as a basic activity in addition to its traditional intermediation function. The results from the intra-state examination in Ohio suggest that medium-size peripheral areas do not appear to be well-positioned to take advantage that phenomenon. The spatial implication is that financial evolution appears to favor further development in larger financial-core areas.

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