



FINANCIAL INDUSTRY

FEDERAL RESERVE BANK OF DALLAS
THIRD QUARTER 1998

Issues

Bank Mergers: Creating Value or Destroying Competition?

Mergers are playing a useful role in reshaping the banking industry without risking a lack of competition.

The recent flurry of big mergers is attracting much attention, partly because of heightened interest in what motivates firms to merge and how mergers affect competition and the economy. One often-held view of mergers, especially those involving megabanks, is that firms are merging just to get bigger. Accompanying that notion is a fear that as merging firms grab greater market share, individual freedoms and competition are threatened, because bigger is perceived as greater concentration of power.

In contrast to that negative view, we argue that mergers are motivated by more than a desire to become bigger. Mergers enable the banking industry to take advantage of new opportunities created by changes in the technological and regulatory environment. While mergers have certainly reduced the number of banks nationwide, concentration of power in local banking markets has not increased. And the very forces of technological and regulatory change that are spurring mergers are also bringing new sources of competition to local banking markets. Hence, mergers are playing a useful role in reshaping the banking industry without risking a lack of competition.

Recent Merger Activity

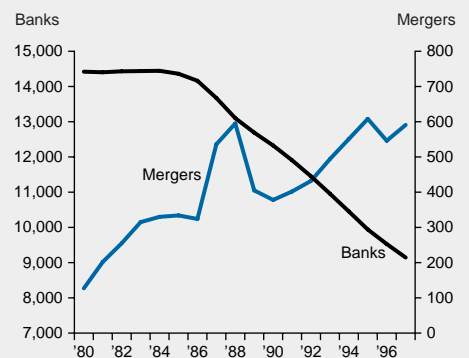
This has been a record-shattering year for merger activity, with over \$1 trillion in deals announced so far. Total deal values already surpass 1997's record \$920 billion in mergers. Through July 1998, we have witnessed nine of the 10 biggest merger deals ever announced involving U.S. companies,

as shown in Table 1. Four of these mergers involve U.S. commercial banking organizations; other megamerger deals have been announced in telecommunications, the automotive industry and biotechnology.

Our focus is on the banking industry, which we will treat like a case study. But note that much of the same philosophy and rationale for bank mergers applies to other industries as well.

For the U.S. banking industry, the current consolidation wave started nearly 15 years ago, as reflected in Chart 1. In 1984, there were roughly 14,500 banks in the United States. Today, there are about 9,000. While there have been some bank failures, most of this consolidation has come through bank mergers and acquisitions,

Chart 1
U.S. Banking Industry



DATA SOURCES: Report of Condition and Income; NIC (the Federal Reserve's National Information Center for Systemwide Structure and Financial Information).

Table 1
Biggest Merger Deals

Merging institutions	Deal value (billions of dollars)	Announcement date
Travelers–Citicorp	\$73	April 6, 1998
Bell Atlantic–GTE	68	July 28, 1998
SBC Communications–Ameritech	60	May 11, 1998
NationsBank–BankAmerica	59	April 13, 1998
AT&T–TCI	48	June 24, 1998
WorldCom–MCI Communications	37	November 10, 1997
Daimler-Benz–Chrysler	36	May 7, 1998
American Home Products–Monsanto	35	June 1, 1998
Wells Fargo–Norwest	34	June 8, 1998
Banc One–First Chicago NBD	26	April 13, 1998

SOURCE: SNL Securities.

Removal of branching restrictions alone would be expected to spur consolidation in the U.S. banking industry.

which have been on an upward trend for more than two decades.

What's Driving Mergers?

Analysts have offered many reasons why companies are merging today. However, we see two primary factors affecting the need for firms to remain competitive: deregulation and technology.

Deregulation has significantly changed how and where banks do business. The relaxation of restrictions on banks' securities activities was a move toward expanded powers, blurring the traditional distinction with investment banking. And the elimination of branching restrictions created vast geographic expansion possibilities.

Removal of branching restrictions alone would be expected to spur consolidation in the U.S. banking industry. Given California's long-standing permission of branching within its borders, examination of the banking industry in California provides a way to project the effect of eliminating branching restrictions on the U.S. banking industry as a whole. If the structure of the U.S. banking industry were to mimic California's, continued consolidation would eventually result in about 3,000 banking organizations, as shown in Chart 2, with a handful of gargantuan superbanks competing simultaneously with many smaller community banks. In fact, the result might be analogous to retailing, in which we have giant outlet stores and department stores on the one hand and specialized, single-location boutiques on the other, all surviving in the marketplace.

Beyond deregulation, advancements in technology are also creating incentives to merge. Improvements in communication technology and the resulting decline in

costs allow dissemination of information throughout a geographically widespread organization, making it practical to operate far-flung operations created through mergers. At the same time, lower communication costs are strengthening the role of competitive forces, as physically distant financial service providers become increasingly relevant as competitors; mergers provide one avenue to respond to the heightened level of competition.

Technology has also blurred the lines of specialization among financial intermediaries. Computing power has promoted asset securitization, resulting in intermediation of similar assets across different types of intermediaries. Computing power also allows investment banks to offer accounts with characteristics similar to bank accounts. As technology creates overlap in financial products, some merger partners are seeking

Chart 2
Number of U.S. Banking Organizations*



* Banks belonging to a common holding company are counted as a single banking organization.

DATA SOURCE: Report of Condition and Income.

to provide an even broader spectrum of products by creating financial supermarkets, where customers can receive one-stop financial services. These players envision greater efficiencies through better information flows and lower transaction costs.

The two forces of technology and deregulation, working together, have fueled change that increasingly blurs accepted boundaries of time, geography, language, industries, enterprises, economies and regulations. The Chrysler deal with German-based Daimler-Benz highlights the trend toward globalization. In Europe, the soon-to-be-launched euro and the move toward a common market have already brought on a wave of cross-border mergers among European banks. As market-oriented economies continue to break down trade barriers and adopt policies that attract investors, more firms will seek opportunities to expand by partnering and aligning themselves with established companies.

Types of Mergers

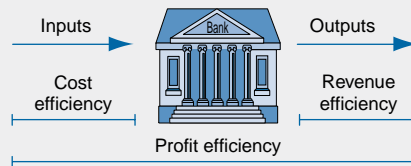
Merging institutions can be classified into two types: mergers of unequals (the acquisition of one firm by another firm that is typically much larger and stronger) and mergers of equals (the so-called megamergers of two large firms).

Of the 6,492 bank mergers in the last 10 years, 3,210 were acquisitions of relatively small, independent banks. What does the reduction in the number of banks through acquisition mean for the industry? Believers in free enterprise argue that market forces tend to eliminate firms that are not providing what consumers want. If that is an accurate assessment, the reduction in the number of banks would be a good thing.

To see whether bank mergers fit the free enterprise picture, a recent study examined the characteristics of independent banks.¹ Statistical analyses were then done to see what characteristics affected the probability of a bank being acquired. Interestingly, bank acquisitions tended to conform, at least statistically, to a survival-of-the-fittest view. While there are certainly exceptions, a bank was more likely to be acquired if its growth was relatively slow and its profitability, market share, capital-to-asset ratio and loan-to-asset ratio were relatively low. All these factors suggest that the acquired firms made attractive targets because they had room for improvement.

While accounting for a much smaller percentage of mergers by number, the megabank deals represent a significant amount

Chart 3
Cost Efficiency versus Profit Efficiency



of the dollar value of mergers. Most organizations that merge claim that the two firms combined are better than the two standing alone. Thus, research on mergers generally focuses on where these improvements appear. The combination of two firms into one can raise profits through either cost efficiencies on the input side or revenue efficiencies on the output side.

Cost efficiencies are often given as a primary reason to merge, but, at least in banking, these efficiencies are not often found in the academic literature.² This is most likely because cost-efficiency changes do not take into account the revenue effects of changes in outputs that often occur after a merger. So, as shown in Chart 3, a more comprehensive measure has been developed, which economists call profit efficiency. Profit efficiency includes all the cost-efficiency changes plus the revenue effects of changes in output. Using this measure, profit-efficiency improvements have been found for megamergers. The combined banks often shift their product mix to more loans—a higher valued product.³

Effect on Competition

Bank mergers are a useful market response to the forces of technological change and changes in public policy. But if they are reducing competition in banking, then mergers threaten the benefits of free markets.

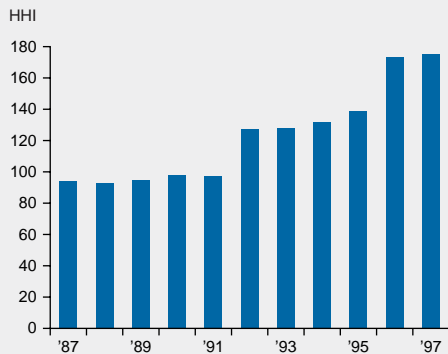
In recognition of the importance of competitive markets, the Clayton Act prohibits mergers and acquisitions if they substantially lessen competition. Enforcing the law, however, raises the issue of how to measure competition in markets. Ascertaining whether a merger would “substantially” reduce competition can be difficult.

In an effort to quantify whether a merger would substantially reduce competition, the Department of Justice uses the Herfindahl–Hirschman Index (HHI). Mathematically, the HHI is calculated by summing the squares of the individual market shares of

More firms will seek opportunities to expand by partnering and aligning themselves with established companies.

Despite the reduction in the number of banks nationwide, high concentrations of market power have not emerged at the local level.

Chart 4
U.S. Banking Industry Concentration—HHI Based on Nationwide Market Deposit Shares



DATA SOURCE: Report of Condition and Income.

all the participants. For example, a defined market consisting of four firms with market shares of 15 percent, 20 percent, 25 percent and 40 percent has an HHI of 2,850 ($225 + 400 + 625 + 1,600$). The HHI ranges from 10,000 (in the case of a pure monopoly) to a number approaching zero (in the case of an atomistic market).

Conceptually, the HHI measures the concentration of the market—that is, the degree to which a large share of the market is concentrated among a small number of competitors. High values of the HHI indicate that a market is highly concentrated. Traditionally, a high HHI is considered a sign of an uncompetitive market. The Justice Department looks at the HHI before and after a proposed merger as the initial test of whether a merger would substantially reduce competition. Postmerger HHI levels that exceed 1,800 and that are more than 200 points higher than the premerger level signal that the proposed merger might raise anticompetitive concerns.⁴

Beyond this initial test, various mitigating factors can sometimes lead the Justice Department to approve mergers that the initial HHI analysis would reject. One of these mitigating factors is the competitive viability of the target firm. Suppose the target firm didn't look as if it could stay in business. Then an acquisition that eliminated that weak competitor could raise the HHI, but it wouldn't matter much if that competitor was destined to close anyway.

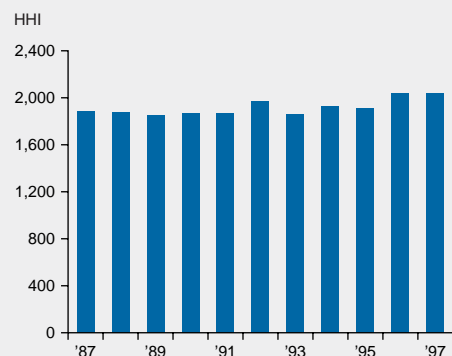
Another mitigating factor is the presence of potential competition. One source of such competition is entry into the market by other banks. Also, if nonbank competi-

tors such as finance companies or credit unions are especially important in the market, that additional source of competition could make the merger acceptable on competitive grounds even if the HHI indicated the merger would be anticompetitive.

Although these mitigating factors may need to be considered in individual cases, HHI analyses are the Justice Department's primary tool for quantifying the concentration of markets in general. Chart 4 shows concentration in banking based on the HHI, where the banking market is taken to be the entire United States. That view considers all banks in the United States to be competing within a single market. Under that market definition, concentration has increased substantially, reflecting the reduction in the number of banks nationwide. While the nationwide HHI has increased over the past decade, the level of the HHI remains low: in 1997, the nationwide HHI had a value of 175, far below the 1,800 value the Justice Department views as a threshold for concern.

The Justice Department, however, does not consider the United States to be a single banking market. Instead, it considers banking markets to be local. Chart 5 shows the HHI for local markets on average across the United States, where local markets are approximated by Metropolitan Statistical Areas for urban areas and by counties for nonmetropolitan areas. As the chart depicts, this locally based measure of concentration has shown relatively little change over the past 10 years. Thus, despite the reduction in the number of banks nationwide, high con-

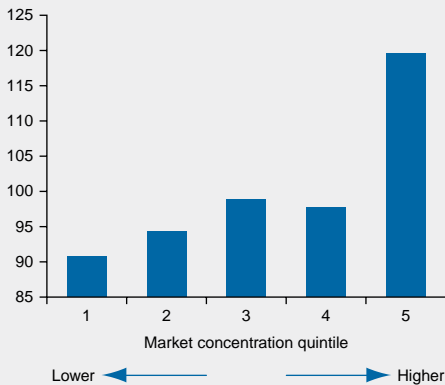
Chart 5
U.S. Banking Industry Concentration—Weighted Average HHI Based on Local Market Deposit Shares



DATA SOURCES: NIC; FDIC Summary of Deposits.

Chart 6
Financial Performance and
Market Concentration in 1987

Return on assets as a percent of industry average



DATA SOURCES: Report of Condition and Income; NIC; FDIC Summary of Deposits.

centrations of market power have not emerged at the local level.

Whether local market concentration even matters for bank customers depends on whether high concentration in local markets reduces competition to the point that banks are earning monopoly profits to some degree. To see whether that was the case in the past, we compared the return on banking assets across markets with the markets' HHIs for 1987.⁵ Chart 6 shows that the least concentrated markets—those on the left—tended to have lower returns on assets than the more concentrated markets—those on the right. Thus, in 1987 at least, higher concentration was correlated with higher profitability.

What does the correlation between market concentration and bank profitability in 1987 mean? It suggests that banks in concentrated markets were able to offer their customers uncompetitive terms—lower-than-competitive rates on deposits and higher-than-competitive rates on loans. Borrowers in those markets may have had a tough time finding credit on competitive terms. If so, then the Justice Department's policy of keeping an eye on the HHI when approving mergers may have been reasonable for 1987. Keeping the HHI low benefited bank customers through better terms on loans and deposits.

But what does the relationship between concentration and profitability look like more recently? Chart 7 shows the relationship between concentration and profitability in 1997. Comparison of Charts 6 and 7 reveals that the relationship between con-

centration and profitability was much weaker in 1997 than it was in 1987. Thus, being in a highly concentrated market no longer boosts profits to the extent it did a decade ago. In other words, being in a concentrated market does not give banks the pricing power it once did.

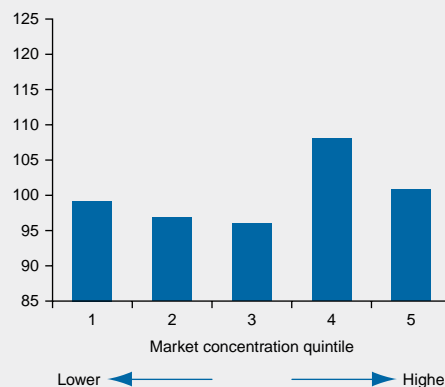
The breakdown in the relationship between market concentration and profitability may stem from a decline in the accuracy of the traditional way of measuring concentration.⁶ Technology is making it easier and less expensive to compete over long distances. Advancements in communications are making it easier and less expensive to obtain information about and to transact with distant banks. At the same time, deregulation has reduced geographic restrictions and expanded powers. To the extent that distant banks are becoming relevant competitors, traditional market definitions based on local markets are excluding relevant competitors. Thus, HHIs computed using those traditional market definitions are overstating the true level of a market's concentration.

Beyond the expanding geographic reach of banks that is increasing competition in local banking markets, nonbank financial market participants provide an important source of financial services and an additional source of competition to banks. Taken together, the evidence points to a banking industry that continues to benefit from the presence of vigorous competition. Thus, concerns about monopoly power in banking appear to be overblown.

Being in a highly concentrated market no longer boosts profits to the extent it did a decade ago.

Chart 7
Financial Performance and
Market Concentration in 1997

Return on assets as a percent of industry average



DATA SOURCES: Report of Condition and Income; NIC; FDIC Summary of Deposits.

Conclusion

Mergers would be worrisome if they were threatening competition in the industry. While mergers are reducing the number of banks nationwide, their impact on concentration in the typical local market is small. Also, those local markets with market shares concentrated among few competitors do not exhibit the tendency for relatively high profitability they did a decade ago. A likely reason is that technology and deregulation are increasing the importance of non-traditional sources of competition, including distant banks and nonbank alternatives.

As technology and deregulation create new opportunities in the financial services industry, mergers are helping the industry take advantage of those opportunities. In so doing, mergers are reshaping the financial services marketplace. Acquisitions allow strong banks to take control of relatively weaker banks. Megamergers allow banks to achieve greater profit efficiency. Viewed in that light, mergers are not merely reshaping the banking industry, but are reshaping the banking industry for the better.

—Robert R. Moore
Thomas F. Siems

Notes

- ¹ Robert R. Moore, “Banking’s Merger Fervor: Survival of the Fittest?” Federal Reserve Bank of Dallas *Financial Industry Studies*, December 1996, pp. 9–15.
- ² Interested readers are directed to Allen N. Berger and David B. Humphrey, “Megamergers in Banking and the Use of Cost Efficiency as an Antitrust Defense,” *Antitrust Bulletin*, Fall 1992, pp. 541–600, and Stephen A. Rhoades, “The Efficiency Effects of Horizontal Bank Mergers,” *Journal of Banking and Finance*, April 1993, pp. 411–22.
- ³ See Jalal D. Akhavein, Allen N. Berger and David B. Humphrey, “The Effects of Megamergers on Efficiency and Prices: Evidence from a Bank Profit Function,” *Review of Industrial Organization*, February 1997, pp. 95–139.
- ⁴ For a discussion of the Justice Department guidelines, see Stephen A. Rhoades, “The Herfindahl–Hirschman Index,” *Federal Reserve Bulletin*, March 1993, pp. 188–89.
- ⁵ Our profitability analysis considers only banks whose operations are limited to one market.
- ⁶ Our result showing a breakdown between local market concentration and bank profitability is consistent with recent findings showing a breakdown between local market concentration and deposit rates. See Lawrence J. Radecki, “The Expanding Geographic Reach of Retail Banking Markets,” Federal Reserve Bank of New York *Economic Policy Review*, June 1998, pp. 15–34.

As technology and deregulation create new opportunities in the financial services industry, mergers are helping the industry take advantage of those opportunities.

Financial Industry Issues Federal Reserve Bank of Dallas

Robert D. McTeer, Jr.

President and Chief Executive Officer

Helen E. Holcomb

First Vice President and Chief Operating Officer

Robert D. Hankins

Senior Vice President

W. Arthur Tribble

Vice President

Economists

Jeffery W. Gunther
Robert R. Moore
Kenneth J. Robinson
Thomas F. Siems
Sujit “Bob” Chakravorti

Financial Analysts

Robert V. Bubel
Robert F. Mahalik
Karen M. Couch
Kelly Klemme
Edward C. Skelton
Kory A. Killgo

Graphic Designer

Candi Aulbaugh

Editors

Jeffery W. Gunther
Thomas F. Siems

Publications Director

Kay Champagne

Copy Editor

Jennifer Afflerbach

Design & Production

Laura J. Bell

Financial Industry Issues is published by the Federal Reserve Bank of Dallas. The views expressed are those of the authors and should not be attributed to the Federal Reserve Bank of Dallas or the Federal Reserve System.

Articles may be reprinted on the condition that the source is credited and a copy of the publication containing the reprinted article is provided to the Financial Industry Studies Department of the Federal Reserve Bank of Dallas.

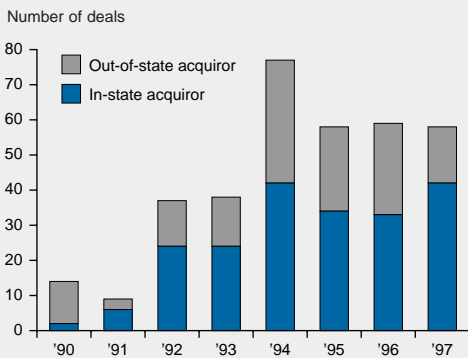
Financial Industry Issues is available free of charge by writing the Public Affairs Department, Federal Reserve Bank of Dallas, P.O. Box 655906, Dallas, TX 75265–5906, or by telephoning (214) 922-5254 or (800) 333-4460, ext. 5254.

11K Bank Notes

Merger activity in the three Eleventh District states—Louisiana, New Mexico and Texas—has followed a trend similar to that in the United States as a whole. The number of banks in the three states combined reached a peak of 1,972 in 1987, falling to 838 by 1997. From 1987 to 1993, failures accounted for much of the reduction in the number of banks in the region. Since 1993, however, mergers and the conversion of banks to branches have been the forces behind the continued reduction in the number of banks.

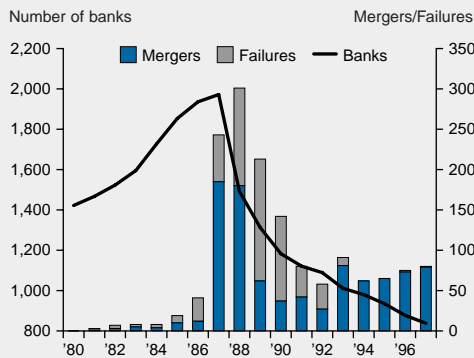
While some regional mergers have been acquisitions by out-of-state banking organizations, a substantial number of mergers have occurred between in-state institutions. As regional merger activity has increased, the level of market concentration using each of the three states as a market has increased. However, concentration at the local market level—the traditional measure of changes in the competitive environment—has shown little change or has declined.

Bank Merger Activity in Texas, Louisiana and New Mexico



DATA SOURCE: SNL Securities.

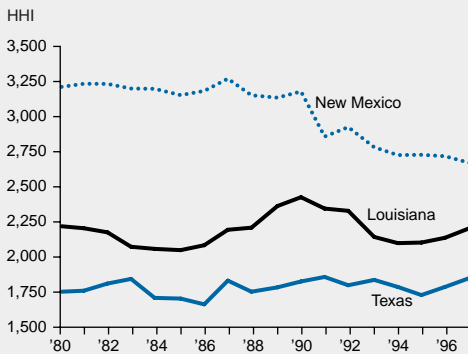
Louisiana, New Mexico and Texas Banking Industry



DATA SOURCES: Report of Condition and Income; NIC (the Federal Reserve's National Information Center for Systemwide Structure and Financial Information).

Eleventh District Banking Industry Concentration

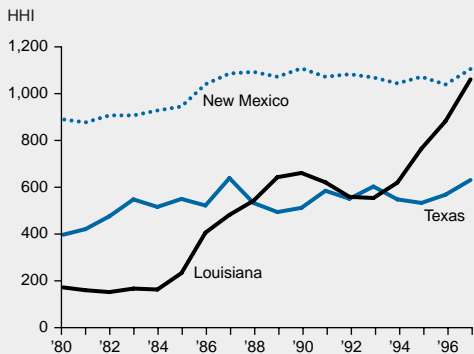
(Weighted Average HHI Based on Local Market Deposit Shares)



DATA SOURCE: FDIC Summary of Deposits.

Eleventh District Banking Industry Concentration

(HHI Based on Statewide Market Deposit Shares)



DATA SOURCE: Report of Condition and Income.

Investigating the Effects From Reforms

The forthcoming *Financial Industry Studies*, a semiannual Dallas Fed publication devoted to scholarly research into the forces shaping banking and finance, takes an in-depth look at some possible effects from financial reform legislation in the United States and from reforms to Mexican securities clearance and settlement systems.

How Might Financial Institutions React to Glass–Steagall Repeal? Evidence from the Stock Market

Financial reform legislation is currently being debated in Congress. To judge the possible economic effects of reform, David P. Ely and Kenneth J. Robinson examine the stock market reaction to recent moves by the Federal Reserve to increase the scope of banks' securities operations. These authors find a positive stock price response for banks currently engaged in securities activities and for those investment banks that might now be considered attractive takeover targets.

Managing Cross-Border Settlement Risk: The Case of Mexican ADRs

The shorter securities settlement period in Mexico vis-à-vis the rest of the world increases the potential for settlement fails of cross-border transactions. In this article, Sujit “Bob” Chakravorti investigates recent and ongoing reforms to Mexican securities clearance and settlement systems that are aimed at reducing settlement fails associated with international transactions.



FEDERAL RESERVE BANK OF DALLAS
P.O. BOX 655906
DALLAS, TEXAS 75265–5906

BULK RATE
U.S. POSTAGE
PAID
DALLAS, TEXAS
PERMIT NO. 151