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Staff Study 174

Bank Mergers and Banking Structure in the United States, 1980–98

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The following paper is summarized in the *Bulletin* for September 2000. The analyses and conclusions set forth are those of the author and do not necessarily indicate concurrence by the Board of Governors, the Federal Reserve Banks, or members of their staffs.

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Bank Mergers and Banking Structure in the United States, 1980–98

Introduction

Since 1980, the U.S. banking industry has experienced a sustained and unprecedented level of merger activity that has substantially affected banking structure. From 1980 through 1998, there were approximately 8,000 mergers, involving about $2.4 trillion in acquired assets. Not only has the number of mergers been large, but from 1990 to 1999 several mergers occurred that, at the time of occurrence, were the largest bank mergers in U.S. history.

Mergers in any industry are of interest for various reasons. One important reason, especially from the viewpoint of public policy, is that mergers have the potential to fundamentally restructure an industry such that there are fewer firms and industry output may be increasingly concentrated in a smaller number of larger firms. Such changes in an industry's structure may have significant implications for competition and the economic performance of the industry, including prices, quality of products and services, and efficiency of production. Moreover, once an industry is restructured, the new structure will generally persist for a long time because of first-mover advantages, information asymmetries, switching costs, and other market imperfections that typically exist in real-world markets.[1]

In view of the potentially broad economic implications of mergers, the long-running merger movement in the banking industry is of considerable interest. This interest is heightened because of the industry's exceptional size and ubiquity and its essential role in the economy. The purpose of this paper is to describe various facets of bank merger activity and some of the changes in U.S. banking structure that occurred from 1980 through 1998.

Considerable research in banking and the industrial sector shows that the reasons for mergers are varied, that is, studies typically do not find only one motive for mergers.[2] However, a primary force underlying the sustained merger movement in banking since 1980 has been the gradual removal of state and federal restrictions on geographic expansion in banking. Without the removal of such restrictions, a merger movement could not have reached such unprecedented proportions. As the restrictions on intrastate and interstate banking were removed throughout most of the period, many banks expanded their operations.[3]

Removal of restrictions on geographic expansion in banking culminated with passage of the Riegle–Neal Interstate Banking and Branching Efficiency Act of 1994, which in June 1995 allowed nationwide interstate banking through holding company banks and as of September 30, 1997, allowed interstate branch banking. That legislation opened up such a remarkable range of opportunities for bank mergers that the bank merger movement is likely to continue for quite a few years. Under the circumstances, it is useful to look at bank merger activity and U.S. banking structure during the early years of the merger movement. Certainly more is to come.

In contrast to the important effects of interstate banking legislation on commercial banking structure, the Gramm–Leach–Bliley Act of 1999 will probably have negligible effects on banking structure and competition in retail banking markets. That act seems

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1. Recent survey evidence and other work suggest that switching costs may be a significant feature of the retail banking industry. This issue warrants careful investigation because of its implications for competition and because of the intensity of the bank merger movement. See Kiser (2000) and Rhoades (1997, 2000).

Regarding the persistence of market structure, one study found that, over twenty years, market structure adjusts only 45 to 55 percent of the distance to its equilibrium level. The study concluded that increases in concentration are typically not transitory. See Amel and Liang (1990).

2. For example, see Ravenscraft and Scherer (1987) and Amel and Rhoades (1989).

3. Beginning in the early 1980s, restrictions on interstate banking were removed piecemeal as individual states reached agreements with one another to allow interstate banking on a reciprocal basis.

likely to result in some cross-industry mergers between large commercial banks on the one hand and insurance and securities underwriters on the other. However, the extent of even such cross-industry mergers may be quite limited given the uncertain economies of scope, or synergies, especially between insurance underwriting and commercial banking.

This paper extends through 1998 an earlier staff study that presented data on bank mergers and banking structure over 1980–94.[4] The reasons for this update after such a short period are that the extraordinary bank merger movement continues unabated, the mergers are clearly being reflected in changes in the industry's structure, and from 1995 through 1998 there were an unprecedented number of very large bank mergers. Indeed, about one-half of the $2.4 trillion in acquired bank assets over 1980–98 were acquired during 1995–98. Moreover, certain aspects of the industry's structure and performance are changing in ways not consistent with conventional wisdom or casual expectations—for example, the increasing number of banking offices despite a dramatic decline in the number of banks.[5]

Among the most noteworthy findings from the data are (1) the large decrease in the number of banks in the United States, (2) the large increase in the nationwide concentration of banking assets (deposits) in the largest banks, (3) the continuing increase in the number of banking offices despite the very large decline in the number of banks and the explosion in the number of ATMs, (4) the continuing increase in the number of checks cleared despite the increasing availability of electronic funds transfer, (5) the substantial increase in the average local market concentration in the majority of metropolitan statistical areas (MSAs) when 50 percent of thrift deposits are included, whereas the average concentration in non-MSA counties has declined somewhat, and (6) the substantial decrease in the average concentration in many local markets.

1. Data Construction

The merger data are constructed in the same manner and according to the same criteria as in two earlier staff studies.[6] The procedure for collecting data and the criteria for selecting mergers are summarized here for convenience.

As all bank mergers must be approved by one of the three federal bank regulators, three sources provide a comprehensive basis for identifying all bank mergers. The Office of the Comptroller of the Currency (OCC) reports its merger decisions quarterly in the *Quarterly Journal*, the Federal Deposit Insurance Corporation (FDIC) reports annually in *Merger Decisions*, and the Board of Governors of the Federal Reserve System (FRB) reports monthly in the *Federal Reserve Bulletin*. However, a substantial portion (probably the majority) of the mergers reported in these sources are merely corporate reorganizations and have little meaning for analysis.[7] This study presents data only on "meaningful" bank mergers, that is, mergers that consolidate under common ownership operating banks formerly independent of one another.

Through the years, the FRB and the OCC have published descriptive material on fewer and fewer of their merger decisions. Consequently, it has become impossible, in the majority of cases, to determine from their publications whether a merger is a meaningful merger or is simply a corporate reorganization or has some other attribute that results in its exclusion from the database.[8] Therefore, for both the FRB and the OCC, one must examine the agency records on each case to determine whether publicly reported merger approvals involve meaningful mergers. The FDIC provides at least brief descriptions of its merger decisions, which are generally sufficient to determine whether a merger is simply a corporate reorganization.

The criteria used for including a merger in this compilation are the same as those in the earlier papers.[9] Bank mergers are included in the database if the following criteria are met:

- The acquired and acquiring firms are not commonly owned in some form before the acquisition; that is, the merger is not simply a corporate reorganization.

4. See Rhoades (1996).
5. Remarkably, in view of the decline in the number of banks, the number of banking offices has increased to the extent that the population per banking office has declined from 4,311 in 1980 to 3,935 in 1990, and to 3,791 in 1998. These numbers are based on Call Reports and resident population data or projections from the U.S. Department of Commerce (1998).
6. See Rhoades (1985, 1996).
7. Corporate reorganizations and associated mergers may take various forms, including the creation of phantom banks. They also cover chain banking situations, in which an individual who owns two or more banks forms a bank holding company to acquire the banks and continues to own and control them through the company.
8. The few merger cases involving a denial or a significant issue at the Federal Reserve are described at length in the *Federal Reserve Bulletin*.
9. Criteria for inclusion are explained in greater detail in Rhoades (1985).

- At least 25 percent of the common stock of the target will be owned by the acquirer after the merger.
- The acquired bank is an active operating entity (for at least one year) rather than a de novo (newly established) or non-operating bank.
- Both parties are either bank holding companies or commercial banks.
- Both parties own U.S. domestic banks (although these banks may be foreign owned).
- The target is a healthy bank and not a failing firm or one judged likely to fail based on the regulator's description of the case.

Three other rules generally govern the treatment of mergers in the study. First, mergers are recorded for the year in which they are approved by a regulator, even though a very small portion would be consummated early in the year after approval. Second, the larger party is generally treated as the acquiring firm, even though in rare situations it is not. Third, when a multibank holding company is acquired, each commercial bank in that holding company is treated as a separate acquisition.

2. Merger Data

The data presented here reflect various aspects of bank mergers during 1980–98, a period of continuous, unprecedented merger activity in the U.S. banking industry. Before 1980, no comparable bank merger activity had occurred.

From 1980 through 1998, about 8,000 bank mergers took place (equal to 55 percent of all banks in existence in 1980), involving $2.4 trillion in acquired assets. This averages to 420 mergers per year. Particularly notable in the latter part of the period were the mergers that then ranked among the largest in U.S. banking history, including BankAmerica with Security Pacific, Chemical Corp. with Chase Manhattan, and NationsBank Corp. with BankAmerica.

Acquisitions by State and Year

The number of acquisitions, by state and year of acquisition approval, is shown in table 1, and the amount of bank assets acquired, by state and year of acquisition approval, is shown in table 2. Interestingly, despite all of the attention the bank merger movement attracted during the 1990s, the 1980s actually dominated in terms of the number of mergers. For example, each year from 1985 to 1988 had more bank mergers than any year from 1990 to 1997, with a peak of 649 in 1987 (table 1). Furthermore, the average number of mergers per year during the 1980s was 437, compared with an average of 403 from 1990 to 1998. Texas and Illinois were, by far, the states with the most mergers, with 1,086 and 751, respectively. These figures reflect that both states are large, did not permit branching, and had many banks and that expansion was best accomplished through acquisitions by bank holding companies. These two states also had the most mergers during 1995–98—Texas with 195 and Illinois with 109 (table 1). As noted earlier, removal of legal restrictions on geographic expansion during this period provided the opportunity and stimulus for the long-running merger movement.

The dollar volume of bank assets acquired was remarkable, with acquired assets of $2.4 trillion (in nominal terms) equal to more than 50 percent of all U.S. commercial banks' domestic assets in 1980 (table 2). In real terms, acquired assets were equal to about 90 percent of total bank assets in 1980.[10] The three states that led in terms of the dollar volume of acquired bank assets were California ($424 billion), Illinois ($180 billion), and New York ($177 billion) (table 2). These are all states with major money center banks, wherein a very few, but very large, mergers resulted in a particularly large amount of acquired assets. Texas and Florida were two states that also had a large dollar volume of acquired assets ($158 and $161 billion, respectively), reflecting both the relatively large number of mergers (especially Texas) and an occasional fairly large merger throughout 1980–98, particularly the acquisition of Texas Commerce in 1987. In contrast, for many states, 1995–98 was the dominant period when the dollar volume of acquired assets was greatest. The reasons are that, in general, there were more relatively large mergers and a significantly greater number of very large mergers during this period than before. Consequently, about one-half (51 percent) of all bank assets acquired during 1980–98 were acquired during 1995–98 (table 2, last row).

Large Mergers

Table 3 shows the relatively high frequency of relatively large bank mergers during 1995–98. Column 1 clearly indicates that far more banks with assets greater than $1 billion were acquired during the 1990s than were acquired during the 1980s. In 1990–98, 177 such banks were acquired; in the 1980s, 71 were acquired. These figures show that

10. Based on the 1996 implicit price deflator applied to acquired assets in each year and total bank assets in 1980.

1. Number of Acquisitions, by State and Year of Acquisition Approval, 1980–98

State	1980	1981	1982	1983	1984	1985	1986	1987	1988
Alabama	4	4	18	10	5	16	13	7	4
Alaska	0	0	1	1	0	2	0	3	0
Arizona	0	0	2	0	1	0	8	7	3
Arkansas	0	0	0	7	13	1	2	4	2
California	8	13	8	12	3	3	5	15	19
Colorado	1	14	6	2	7	3	2	17	24
Connecticut	1	5	6	3	4	4	3	1	4
Delaware	0	1	1	3	0	0	0	3	0
District of Columbia	0	1	0	0	0	1	3	0	1
Florida	12	15	56	42	37	39	19	15	15
Georgia	9	12	15	20	35	46	40	20	8
Hawaii	0	0	0	0	0	0	0	0	0
Idaho	1	0	0	1	1	0	1	0	0
Illinois	1	1	34	49	72	33	80	63	52
Indiana	0	0	6	7	7	20	74	36	24
Iowa	10	11	10	13	10	7	5	10	7
Kansas	1	0	1	6	2	16	6	5	13
Kentucky	0	1	3	1	2	24	23	16	19
Louisiana	0	0	1	2	5	14	4	2	6
Maine	0	2	0	7	2	2	3	1	1
Maryland	2	10	3	5	4	2	7	3	2
Massachusetts	8	9	8	6	2	1	8	8	4
Michigan	9	25	6	17	5	10	24	20	8
Minnesota	1	5	7	7	2	7	11	15	15
Mississippi	4	8	6	3	6	7	8	10	2
Missouri	11	22	19	28	10	10	14	16	25
Montana	1	2	1	2	0	1	2	0	1
Nebraska	0	1	0	1	9	4	6	5	11
Nevada	0	0	0	0	0	1	0	1	1
New Hampshire	3	5	3	0	4	5	3	3	1
New Jersey	12	23	17	12	10	6	7	3	13
New Mexico	1	3	1	2	0	2	0	1	2
New York	8	7	7	5	11	0	4	12	15
North Carolina	4	8	4	7	8	4	5	3	1
North Dakota	1	3	1	0	0	2	0	2	0
Ohio	18	19	19	17	14	16	10	4	10
Oklahoma	0	0	0	2	11	2	7	6	10
Oregon	2	1	3	1	0	3	4	6	0
Pennsylvania	15	3	12	23	17	26	35	12	10
Rhode Island	0	0	1	0	2	0	0	1	1
South Carolina	1	3	9	4	0	3	9	4	4
South Dakota	0	2	3	6	1	4	3	2	5
Tennessee	0	2	8	7	8	8	31	35	16
Texas	16	80	79	47	79	23	16	195	35
Utah	0	2	2	0	1	2	0	1	1
Vermont	1	0	0	1	1	3	1	3	0
Virginia	8	9	18	9	5	10	11	5	0
Washington	4	7	4	8	2	2	2	6	4
West Virginia	0	0	2	11	9	22	15	19	18
Wisconsin	12	15	8	8	13	58	37	23	49
Wyoming	0	5	1	3	1	0	2	0	2
Total	**190**	**359**	**420**	**428**	**441**	**475**	**573**	**649**	**468**

1. Continued

1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	Total
4	1	2	2	4	7	7	4	5	16	133
1	0	0	1	0	1	0	1	0	0	11
2	5	0	4	2	4	2	2	1	4	47
4	10	5	6	12	10	22	16	8	28	150
9	17	14	8	12	12	18	26	27	29	258
14	8	50	11	28	16	19	12	12	20	266
1	0	4	1	0	2	4	5	3	2	53
3	2	2	0	0	0	3	1	3	2	24
0	1	2	3	3	0	0	1	1	1	18
14	7	12	3	18	15	16	15	31	28	409
8	5	11	7	8	18	9	28	15	27	341
0	1	0	0	0	1	0	0	0	0	2
2	2	1	4	1	2	2	1	2	0	21
44	38	46	33	27	69	26	23	29	31	751
13	14	6	38	8	6	5	5	4	16	289
3	20	4	27	3	8	4	39	11	12	214
16	17	12	35	19	20	17	9	3	17	225
12	6	8	8	11	19	10	3	7	15	188
5	4	5	3	3	19	15	13	15	14	130
0	0	1	0	0	1	1	0	0	0	21
3	3	2	0	5	8	4	1	7	4	75
0	1	3	1	4	1	2	3	1	2	72
7	1	4	12	4	7	1	6	20	6	192
20	12	13	31	24	15	7	9	14	13	228
2	1	1	1	1	8	5	0	6	7	86
9	6	9	22	14	13	10	20	12	10	280
2	3	0	0	2	2	4	3	2	6	34
16	10	9	10	14	4	5	10	5	3	123
0	1	0	3	2	0	0	1	3	2	15
2	0	2	0	0	1	2	2	1	2	39
1	1	3	2	6	4	10	7	7	6	150
0	3	6	13	14	2	1	13	1	6	71
11	0	1	7	1	7	5	6	2	3	112
1	2	3	2	8	2	5	3	6	2	78
4	3	3	4	7	3	4	0	1	3	41
6	5	7	4	3	3	1	1	5	17	179
10	13	12	16	24	13	11	9	10	14	170
3	2	1	2	2	5	4	1	3	2	45
1	7	2	12	9	13	9	9	6	18	239
0	0	0	1	0	0	0	0	0	0	6
0	1	4	1	3	5	6	0	1	9	67
3	1	3	3	3	3	1	1	1	1	46
4	6	3	10	13	5	10	7	6	16	195
54	82	47	26	69	43	44	48	40	63	1,086
1	1	0	0	4	3	2	1	2	1	24
3	0	0	0	1	0	0	0	0	0	14
5	4	2	2	6	7	1	8	9	14	133
4	3	0	7	3	2	3	6	6	9	82
11	6	10	8	20	5	1	3	3	6	169
12	23	9	5	9	28	6	8	16	11	350
0	6	1	2	2	4	1	2	1	0	33
365	**366**	**345**	**401**	**436**	**446**	**345**	**392**	**384**	**518**	**7,985**

2. Bank Assets Acquired, by State and Year of Acquisition Approval, 1980–98
Millions of dollars

State	1980	1981	1982	1983	1984	1985	1986	1987	1988
Alabama	86	88	560	284	235	1,550	580	691	129
Alaska	0	0	48	55	0	444	0	642	0
Arizona	0	0	42	0	10	0	6,855	205	1,059
Arkansas	0	0	0	932	592	33	17	216	35
California	550	1,219	810	4,320	136	47	18,737	1,881	9,612
Colorado	14	482	393	325	274	267	30	1,168	2,098
Connecticut	32	194	1,797	1,053	7,633	288	626	98	10,422
Delaware	0	455	30	517	0	0	0	1,340	0
District of Columbia	0	13	0	0	0	925	837	0	164
Florida	599	1,556	5,063	2,585	4,352	8,397	2,760	1,186	1,646
Georgia	217	320	703	933	1,724	13,541	4,796	2,831	402
Hawaii	0	0	0	0	0	0	0	0	0
Idaho	24	0	0	59	19	0	57	0	0
Illinois	38	148	2,165	2,708	6,332	2,258	5,799	7,130	2,788
Indiana	0	0	216	258	263	1,786	8,839	6,836	1,723
Iowa	292	344	206	444	230	162	190	369	266
Kansas	39	0	57	328	190	1,221	143	114	332
Kentucky	0	31	438	7	43	1,578	1,706	5,728	5,676
Louisiana	0	0	84	808	2,091	4,619	258	138	582
Maine	0	92	0	605	837	719	735	813	47
Maryland	35	347	49	500	226	1,956	4,018	366	85
Massachusetts	513	878	1,289	889	329	55	2,344	4,315	2,360
Michigan	683	2,466	571	2,495	179	2,346	3,437	1,512	527
Minnesota	46	98	105	92	52	99	420	510	580
Mississippi	66	216	231	180	391	376	853	973	204
Missouri	453	997	673	2,096	507	602	1,064	370	5,346
Montana	8	69	18	37	0	12	143	0	17
Nebraska	0	28	0	34	1,074	145	122	45	212
Nevada	0	0	0	0	0	181	0	490	675
New Hampshire	55	116	54	0	198	295	141	488	106
New Jersey	884	5,374	2,907	2,551	4,210	2,926	1,626	269	9,391
New Mexico	10	100	19	78	0	92	0	15	40
New York	1,885	4,671	774	1,231	5,057	0	134	9,631	17,747
North Carolina	95	955	566	821	560	2,880	377	121	23
North Dakota	5	41	25	0	0	40	0	68	0
Ohio	652	1,400	3,351	2,462	7,680	4,327	820	228	823
Oklahoma	0	0	0	64	4,616	129	138	99	444
Oregon	141	159	51	6	0	60	124	1,233	0
Pennsylvania	623	268	3,945	10,172	5,506	2,650	11,281	872	1,635
Rhode Island	0	0	160	0	2,027	0	0	43	657
South Carolina	21	445	643	307	0	1,956	3,456	418	143
South Dakota	0	20	65	155	21	56	34	41	204
Tennessee	0	180	1,113	416	225	790	7,119	5,512	1,275
Texas	886	3,710	9,967	2,301	10,518	914	517	51,042	1,586
Utah	0	33	60	0	6	363	0	26	10
Vermont	44	0	0	31	56	258	18	285	0
Virginia	332	355	937	5,586	234	603	637	261	0
Washington	232	5,639	92	262	361	78	98	10,607	118
West Virginia	0	0	160	694	285	1,299	1,211	1,130	911
Wisconsin	620	385	416	277	532	3,796	1,300	938	5,546
Wyoming	0	177	17	88	8	0	14	0	63
Total	**10,182**	**34,068**	**40,872**	**50,047**	**69,820**	**67,120**	**94,407**	**123,292**	**87,709**
(Total in 1996 dollars)	17,745	54,335	61,452	72,280	97,242	90,641	124,778	158,391	109,009

2. Continued

1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	Total
76	26	84	55	280	743	273	143	521	1,754	8,156
779	0	0	200	0	861	0	52	0	0	3,080
73	80	0	8,110	10,481	804	1,620	8,896	53	13,741	52,030
148	762	479	369	1,028	968	5,201	3,985	1,748	5,987	22,502
1,284	4,238	875	46,551	1,720	1,639	2,822	48,727	8,335	270,545	424,048
191	237	6,478	1,619	6,680	883	1,223	2,542	1,036	2,030	27,970
51	0	7,570	132	0	75	20,744	1,482	554	410	53,161
2,388	244	1,186	0	0	0	6,732	1,413	1,044	2,110	17,460
0	29	1,602	67	3,884	0	0	101	289	646	8,557
10,042	8,297	7,360	5,834	2,844	1,214	1,495	1,502	43,993	49,877	160,605
317	226	13,835	341	1,029	946	7,424	3,167	2,049	3,636	58,436
0	812	0	0	0	305	0	0	0	0	1,117
76	407	77	882	50	1,250	4,631	1,012	3,848	0	12,393
6,945	2,240	4,969	4,153	2,235	26,060	35,962	4,029	2,872	61,217	180,049
1,079	1,095	1,752	17,193	699	3,498	293	1,193	269	15,398	62,391
76	2,803	70	1,751	349	509	126	3,751	1,128	1,591	14,656
470	367	428	2,575	1,282	1,073	6,317	512	741	841	17,031
856	487	817	1,998	922	5,464	812	320	685	4,546	32,113
1,525	105	293	81	576	3,152	2,516	8,228	1,529	11,624	38,209
0	0	1,046	0	0	2,612	1,128	0	0	0	8,633
4,685	4,778	4,437	0	13,459	3,966	33,548	82	4,704	830	78,071
0	475	13,738	261	3,411	44	14,434	11,465	102	506	57,409
593	14	254	13,941	462	1,357	139	431	4,589	39,691	75,685
811	620	300	3,099	1,011	432	158	1,685	977	1,062	12,158
440	116	24	40	168	2,711	315	0	659	7,467	15,431
225	140	1,549	2,024	2,284	767	1,047	18,673	3,441	7,595	49,852
57	115	0	0	330	825	149	566	59	176	2,581
532	294	251	409	3,329	102	128	3,903	399	83	11,090
0	11	0	4,622	222	0	0	3,846	1,620	217	11,886
278	0	114	0	0	161	275	717	129	2,646	5,775
1,229	65	1,745	1,129	5,024	2,883	2,852	8,813	2,108	1,020	57,007
0	78	1,119	3,237	3,102	197	31	4,195	92	1,129	13,534
2,471	0	38,392	6,611	1,120	14,523	4,334	63,219	449	5,077	177,326
50	108	167	82	422	105	6,143	551	4,905	202	19,133
86	29	41	351	307	152	162	0	64	111	1,480
1,214	160	2,206	8,130	102	230	63	137	852	16,003	50,840
140	430	1,437	1,323	2,259	931	5,773	3,151	3,295	2,911	27,138
67	58	13	1,453	53	2,526	1,096	6,624	14,393	157	28,214
78	6,229	1,507	5,661	2,875	5,190	986	27,176	7,071	44,105	137,830
0	0	0	86	0	0	0	0	0	0	2,973
0	68	11,125	38	103	1,171	1,355	0	387	975	22,610
50	40	109	75	115	52	319	37	12	27	1,432
82	225	5,203	721	2,653	314	1,342	1,395	629	3,371	32,564
1,705	3,828	2,413	8,664	12,654	4,651	3,668	15,585	5,449	18,910	158,968
30	187	0	0	989	1,379	782	954	885	108	5,813
66	0	0	0	73	0	0	0	0	0	831
542	211	14,268	77	9,556	638	61	782	25,434	26,172	86,687
192	119	0	10,745	106	6,836	2,188	5,854	9,974	1,517	55,019
814	264	692	472	1,737	209	67	414	427	982	11,766
573	2,030	248	185	997	5,965	258	703	1,020	795	26,584
0	446	14	72	70	1,383	17	639	1,228	0	4,236
43,386	**43,593**	**150,286**	**165,421**	**103,052**	**111,759**	**181,008**	**272,653**	**166,046**	**629,800**	**2,444,522**
51,922	50,205	167,431	180,394	109,444	116,246	184,345	272,653	163,335	612,289	2,694,137

3. Number of Large Mergers, 1980–98

Year	Large mergers	Large interstate mergers
1980	0	0
1981	1	0
1982	2	0
1983	5	0
1984	7	0
1985	12	7
1986	9	5
1987	19	11
1988	14	8
1989	2	0
1990	6	1
1991	16	12
1992	22	15
1993	17	11
1994	15	10
1995	14	11
1996	28	21
1997	25	24
1998	34	32
Total	**248**	**168**

NOTE. The acquiring firm and target bank have more than $1 billion in assets. Year is based on consummation date.

the 1990s were a major period in the ongoing bank merger movement, especially because of the size of the acquired firms. The data in table 3 also support the argument that removal of various restrictions on geographic expansion stimulated merger activity. In particular, column 2 shows that the number of large interstate mergers generally shadowed the increase in the number of large mergers. The liberalization of interstate banking laws through reciprocal agreements between states took place throughout the 1980s, creating the opportunity for large mergers across states. And, of course, the Riegle–Neal Act of 1994 opened the doors for nationwide interstate banking beginning in 1995 and provided a continuing stimulus for large mergers.

Table 4 provides additional detail on the large bank mergers from 1980 to 1998. In particular, it lists the acquired banks and the acquiring banking organization, which is often a bank holding company rather than a bank. Consistent with the previous tables, large mergers are defined as those in which the acquiring firm and the acquired bank both have at least $1.0 billion in assets. Also consistent with the previous tables, each bank within an acquired bank holding company is treated as a separate bank acquisition. Thus, for example, in 1987, RepublicBank Corporation acquired Interfirst Bank Dallas, NA, and Interfirst Bank Forth Worth, NA, which were two separate banks within a single bank holding company acquired by RepublicBank. Numerous other examples of multiple large bank acquisitions in one deal may be found in table 4. One of the most notable was the acquisition of First Interstate by Wells Fargo & Company in 1996, wherein eight large banks were acquired in one deal.

Table 5 plainly shows the increasing tendency toward very large bank mergers. From 1954, when Chemical Bank and Trust merged with Corn Exchange B&T Company, until 1986, there were only five very large bank mergers in the United States. Since 1986, there have been twenty-five such mergers, and all but eight of those mergers occurred from 1994 to 1998. Table 5 presents both the nominal and constant dollar value of the acquiring and target firms. These data, along with the data on the size of the combined firm (total columns), provide a good indication of the very large size of these mergers, especially the tendency toward larger mergers as the 1990s progressed. Even more illustrative is the last column of the table, which shows the merged firm's total assets as a percentage of all assets of U.S. banking organizations. Certainly, the NationsBank–BankAmerica merger in 1998 is at the top of the size chart, with the combined firm controlling 10.7 percent of domestic U.S. bank assets. In descending order behind the NationsBank–BankAmerica merger are NationsBank–Boatmen's (5.6 percent, 1996), NationsBank–Barnett (5.5 percent, 1997), BankAmerica–Security Pacific (5.4 percent, 1992), and BankAmerica–Continental (5.2 percent, 1994). Clearly many of the mergers in the 1990s were substantially larger than all previous mergers in terms of the percentage of control over U.S. bank assets.

Finally, that interstate mergers dominated the list of very large mergers after 1990, but not before 1990, indicates the importance of the removal of legal restrictions on geographic expansion in the consolidation of the banking industry. The industry is clearly adapting to this liberalization as it continues to move from being an industry with fifty more or less distinct state banking structures to an industry with a nationwide industry structure.[11]

11. This evolution toward a nationwide industry structure should not be interpreted to mean that the appropriate geographic area for analyzing competition in retail banking is necessarily becoming national in scope. As an analogy, grocery retailing has never been subject to geographic restrictions, so the industry has evolved a national structure. That is, some grocery retailers, such as Safeway, have operations throughout the country, and others operate regionally or in an even smaller area. Nevertheless, competition among grocery retailers clearly occurs within local geographic markets.

4. Bank Mergers and Holding Company Acquisitions among Large Banking Organizations, 1980–98
Assets in millions of dollars

Year	Number	Acquired bank	Assets	Acquiring organization	Assets
1980	0	. . .	. . .	. . .	. . .
1981	1	City National Bank of Detroit	1,006	First American Bank Corporation	2,390
1982	2	Austin National Bank	1,007	Interfirst Corporation	14,997
		Union Commerce Bank	1,203	Huntington Bancshares Incorporated	3,088
1983	5	Girard Bank	3,954	Mellon National Corporation	16,883
		Provident National Bank	2,777	Pittsburgh National Corporation	6,643
		Winters National Bank and Trust Company	1,144	Banc One Corporation	5,197
		New Jersey Bank (NA)	1,258	Midlantic Banks Inc.	3,973
		First & Merchants National Bank	2,743	Virginia National Bank	3,810
1984	7	Lincoln First Bank, NA	4,118	Chase Manhattan Corporation	51,127
		American National Bank & Trust Company of Chicago	2,574	First Chicago Corporation	23,267
		Bank of the Southwest NA	3,218	Mercantile Texas Corporation	11,347
		BancOhio National Bank	5,802	National City Corporation	6,379
		Fidelity Union Bank	3,375	First National State Bancorporation	6,153
		The First National Bank of Allentown	1,124	Meridian Bancorp, Inc.	3,758
		First National Bank & Trust Company	1,305	Liberty National Bank & Trust Company	2,167
1985	12	Rhode Island Hospital Trust National Bank	1,830	Bank of Boston Corporation	13,794
		Colonial Bank	1,332	Bank of Boston Corporation	13,794
		Northeastern Bank of Pennsylvania	1,192	PNC Financial Corp.	12,196
		Trust Company Bank	3,903	Sun Banks of Florida, Incorporated	9,234
		The First National Bank of Atlanta	5,956	Wachovia Corporation	8,191
		Heritage Bank NA	2,013	Midlantic Banks Inc.	6,680
		Atlantic National Bank of Florida	3,752	First Union Corporation	6,632
		The Northwestern Bank	2,743	First Union National Bank	6,619
		Central National Bank of Cleveland	2,386	Society Corporation	5,766
		Connecticut Bank and Trust Company, NA	5,394	Bank of New England Corporation	5,532
		Union Trust Company of Maryland	1,939	Bank of Virginia Company	3,758
		First National Bank of Shreveport	1,079	Louisiana National Bank of Baton Rouge	1,057
1986	9	The Arizona Bank	3,938	Security Pacific Corporation	38,647
		Crocker National Bank	16,957	Wells Fargo & Company	22,561
		Third National Bank in Nashville	2,537	SunTrust Banks, Inc.	19,328
		American National Bank & Trust Company	1,032	SunTrust Banks, Inc.	19,328
		Bankers Trust of South Carolina	1,913	NCNB Corporation	13,556
		Suburban Bank	3,287	Sovran Financial Corporation	9,457
		Industrial Valley Bank & Trust Company	2,161	Fidelcor, Inc.	5,373
		Merchants Bank, NA	1,331	Fidelcor, Inc.	5,373
		Lloyds Bank California	2,601	Golden State Sanwa Bank	1,540
1987	19	Rainier National Bank	7,255	Security Pacific Corporation	45,293
		Texas Commerce Bank NA	10,119	Chemical New York Corporation	45,168
		Texas Commerce Bank-Austin, NA	1,370	Chemical New York Corporation	45,168
		Citizens Fidelity Bank and Trust Company	4,251	PNC Financial Corp.	22,937
		Interfirst Bank Dallas, NA	7,380	RepublicBank Corporation	22,325
		Interfirst Bank Fort Worth, NA	1,402	RepublicBank Corporation	22,325
		Patriot Bank NA	1,101	Bank of New England Corporation	21,676
		Guaranty Bank and Trust Company	1,029	Bank of New England Corporation	21,676
		The Long Island Trust Company, NA	1,807	Bank of New York Company, Inc.	16,187
		Commerce Union Bank	2,376	Sovran Financial Corporation	14,445
		American Fletcher National Bank & Trust Company	4,046	Banc One Corporation	13,070
		Continental Bank	2,832	Midlantic Banks Inc.	9,827
		United Penn Bank	1,004	Midlantic Banks Inc.	9,827
		United Bank of Arizona	2,102	Standard Chartered PLC	9,023
		Peoples National Bank of Washington	2,428	U.S. Bancorp	8,568
		Norstar Bank of Upstate New York	3,399	Fleet Financial Group, Inc.	8,498
		Norstar Bank of Long Island	1,483	Fleet Financial Group, Inc.	8,498
		The National Bank of Georgia	1,600	Credit and Commerce American Holdings, NV	7,019

Footnotes for table 4 appear on page 13.

4. Bank Mergers and Holding Company Acquisitions among Large Banking Organizations, 1980–98—Continued
Assets in millions of dollars

Year	Number	Acquired bank	Assets	Acquiring organization	Assets
		Delaware Trust Company	1,131	Meridian Bancorp, Inc.	6,529
1988	14	Allied Bank of Texas	4,913	First Interstate Bancorp	47,641
		Barclays Bank of California	1,314	Wells Fargo Bank NA	39,799
		The Hibernia Bank	1,566	Security Pacific National Bank	34,482
		Central Bank of Denver	1,295	First Bank System, Inc.	22,151
		Marine Bank, NA	1,641	Banc One Corporation	18,610
		Irving Trust Company	14,074	The Bank of New York Company, Inc.	18,370
		First National Bank of Louisville	3,950	National City Corporation	14,878
		Connecticut National Bank	10,119	Shawmut Corporation	10,798
		Arlington Trust Company	1,340	Shawmut Corporation	10,798
		The First Jersey National Bank	2,689	National Westminster Bank PLC	10,171
		First Jersey National Bank/South	1,209	National Westminster Bank PLC	10,171
		Union Bank	8,903	The Bank of Tokyo, LTD.	10,038
		Centerre Bank NA	3,467	Boatmens Bancshares Inc.	9,803
		Norstar Bank, NA	1,405	Fleet Financial Group, Inc.	8,498
1989	2	Bank of Delaware	1,906	PNC Financial Corp.	39,731
		First National Bank of Central Jersey	1,229	National Westminster Bank PLC	17,072
1990	6	Florida National Bank	7,815	First Union Corporation	29,167
		First Pennsylvania Bank NA	5,651	CoreStates Financial Corp.	16,053
		Equitable Bank, NA	4,624	MNC Financial, Inc.	15,768
		Commercial National Bank in Shreveport	1,041	Deposit Guaranty Corp.	3,652
		Exchange National Bank of Chicago	2,517	Algemene Bank Nederland, NV	3,158
		Central Bank	1,094	Bank of the West	1,903
1991	16	Manufacturers Hanover Trust Company	38,392	Chemical Banking Corporation	69,604
		Sovran Bank, NA	14,259	NCNB Corporation	68,454
		The Citizens & Southern National Bank of Georgia	13,249	NCNB Corporation	68,454
		Citizens & Southern National Bank of Florida	6,504	NCNB Corporation	68,454
		Sovran Bank/Central South	5,128	NCNB Corporation	68,454
		Sovran Bank/Maryland	4,392	NCNB Corporation	68,454
		The Citizens & Southern National Bank of South Carolina	4,099	NCNB Corporation	68,454
		Sovran Bank/DC National	1,094	NCNB Corporation	68,454
		The Central Trust Company of NE Ohio NA	1,001	Bank One Corporation	44,008
		Bank of New England, NA	13,369	Fleet/Norstar Financial Group, Inc.	29,142
		The Connecticut Bank and Trust Company NA	7,170	Fleet/Norstar Financial Group, Inc.	29,142
		United Bank of Denver NA	2,844	Northwest Bancorporation	25,922
		The South Carolina National Bank	6,906	Wachovia Corporation	25,682
		The First National Bank of Toms River, New Jersey	1,647	First Fidelity Bancorporation	11,586
		The York Bank & Trust Company	1,439	Allied Irish Banks LTD.	7,592
		Maine National Bank	1,046	Fleet Bank of Maine	1,809
1992	22	Security Pacific National Bank	45,996	BankAmerica Corporation	104,541
		Security Pacific Bank Washington, NA	6,951	BankAmerica Corporation	104,541
		Security Pacific Bank Arizona	6,292	BankAmerica Corporation	104,541
		Valley Bank of Nevada	3,163	BankAmerica Corporation	104,541
		Security Pacific Bank, NA	1,550	BankAmerica Corporation	104,541
		Security Pacific Bank Oregon	1,427	BankAmerica Corporation	104,541
		Team Bank	5,608	Banc One Corporation	46,329
		First Security National Bank & Trust Company of Lexington	1,287	Banc One Corporation	46,329
		First Florida Bank, NA	5,763	Barnett Banks, Inc.	32,680
		INB National Bank	4,811	NBD Bancorp, Inc.	27,782
		Summit Bank	1,835	NBD Bancorp, Inc.	27,782
		Gainer Bank, NA	1,476	NBD Bancorp, Inc.	27,782
		Merchants National Bank & Trust Company of Indianapolis	3,414	National City Corporation	25,354
		First Peoples Bank of New Jersey	1,075	CoreStates Financial Corp.	19,780
		Marquette Bank Minneapolis, NA	2,264	First Bank System, Inc.	18,674

4. Continued

Year	Number	Acquired bank	Assets	Acquiring organization	Assets
		SunWest Bank of Albuquerque, NA	1,938	Boatmen's Bancshares, Inc.	17,932
		AmeriTrust Company, NA	7,915	Society Corporation	15,143
		Security Bank and Trust Company	1,568	First of America Bank Corporation	14,662
		Manufacturers Bank, NA	10,781	Comerica Incorporated	14,227
		Affiliated Bank	1,627	Comerica Incorporated	14,227
		Hibernia National Bank in Texas	1,035	Comerica Incorporated	14,227
		Central Trust Company	1,144	Manufacturers and Traders Trust Company	7,032
1993	17	Maryland National Bank	11,835	NationsBank Corporation	127,427
		American Security Bank, NA	3,727	NationsBank Corporation	127,427
		The Valley National Bank of Arizona	10,457	Banc One Corporation	60,414
		Dominion Bank, NA	6,777	First Union Corporation	51,090
		First American Bank of Virginia	2,449	First Union Corporation	51,090
		Dominion Bank of Middle Tennessee	1,568	First Union Corporation	51,090
		First American Bank of Maryland	1,056	First Union Corporation	51,090
		National Community Bank of New Jersey	4,179	Bank of New York Company, Inc.	32,466
		South Shore Bank	1,363	Bank of Boston Corporation	27,342
		Puget Sound Bank	3,122	KeyCorp	22,651
		Colorado National Bank	2,387	First Bank System, Inc.	21,396
		Commonwealth Bank	2,019	Meridian Bancorp, Inc.	12,160
		New First City, Texas-Houston, NA	3,826	Texas Commerce Bank NA	9,812
		EquiBank	3,150	Integra Financial Corporation	8,757
		First National Bank in Albuquerque	1,297	First Security Corporation	7,529
		Missouri Bridge Bank, NA	1,711	Boatmens First National Bank of Kansas	3,159
		New First City, Texas-Dallas, NA	1,170	Texas Commerce Bank-Dallas, NA	3,033
1994	15	Continental Bank	17,989	BankAmerica Corporation	158,125
		Liberty National Bank & Trust Company of Kentucky	3,563	Banc One Corporation	78,647
		First Eastern Bank NA	2,034	PNC Bank, NA	40,474
		Lake Shore National Bank	1,071	First Chicago Corporation	38,807
		Key Bank of New York	13,608	Society Corporation	25,897
		Key Bank of Washington	6,772	Society Corporation	25,897
		Key Bank of Maine	2,612	Society Corporation	25,897
		Key Bank of Oregon	2,313	Society Corporation	25,897
		Key Bank of Wyoming	1,268	Society Corporation	25,897
		Key Bank of Utah	1,182	Society Corporation	25,897
		Key Bank of Idaho	1,180	Society Corporation	25,897
		Bucks County Bank & Trust Company	1,227	CoreStates Financial Corp.	21,829
		The Bank of Baltimore	2,238	First Fidelity Bank NA New Jersey	20,039
		Citizens First National Bank of New Jersey	2,558	National Westminster Bank New Jersey	7,043
		SunBurst Bank	1,955	Union Planters Corporation	6,039
1995	14	United States Trust Company of NY	2,745	Chase Manhattan Corporation	73,500
		Casco Northern Bank, NA	1,128	KeyCorp	64,635
		Caliber Bank	1,579	Norwest Corporation	54,254
		The First National Bank of Chicago	27,756	NBD Bancorp, Inc.	46,307
		FCC National Bank	6,605	NBD Bancorp, Inc.	46,307
		American National Bank & Trust Company of Chicago	6,225	NBD Bancorp, Inc.	46,307
		Shawmut Bank Connecticut, NA	16,933	Fleet Financial Group, Inc.	44,117
		Shawmut Bank, National Association	14,212	Fleet Financial Group, Inc.	44,117
		Worthen National Bank of Arkansas	1,671	Boatmen's Bancshares, Inc.	28,468
		West One Bank, Idaho	4,397	U.S. Bancorp	21,590
		West One Bank, Washington	2,072	U.S. Bancorp	21,590
		The Twin City Bank	1,025	Mercantile Bancorporation Inc.	12,586
		The Central Jersey Bank & Trust Company	1,795	National Westminster Bank New Jersey	10,194
		Southern National Bank of North Carolina	5,746	Branch Banking & Trust Company	9,179
1996	28	Bank South, NA	6,867	NationsBank Corporation	156,422
		The Chase Manhattan Bank NA	60,693	Chemical Banking Corporation	114,959
		Premier Bank, National Association	6,258	Banc One Corporation	93,096
		First Fidelity Bank, NA	33,192	First Union Corporation	78,500
		First Fidelity Bank	3,015	First Union Corporation	78,500
		Victoria Bank and Trust Company	1,949	Norwest Corporation	68,566
		First Interstate Bank LTD	26,282	Wells Fargo & Company	53,471
		First Interstate Bank of Arizona NA	8,758	Wells Fargo & Company	53,471

4. Bank Mergers and Holding Company Acquisitions among Large Banking Organizations, 1980–98—Continued
Assets in millions of dollars

Year	Number	Acquired bank	Assets	Acquiring organization	Assets
		First Interstate Bank of Texas NA	6,940	Wells Fargo & Company	53,471
		First Interstate Bank of Oregon NA	6,624	Wells Fargo & Company	53,471
		First Interstate Bank of Washington NA	5,519	Wells Fargo & Company	53,471
		First Interstate Bank of Nevada NA	3,846	Wells Fargo & Company	53,471
		First Interstate Bank of Denver NA	1,686	Wells Fargo & Company	53,471
		First Interstate Bank of Idaho NA	1,012	Wells Fargo & Company	53,471
		Integra Bank	13,979	National City Corp.	37,989
		BayBanks NA	11,128	Bank of Boston Corp.	36,403
		Metrobank	1,267	Comerica Incorporated	35,452
		Bank IV, NA	5,290	Boatmen's Bancshares, Inc.	33,703
		Bank IV Oklahoma, NA	2,554	Boatmen's Bancshares, Inc.	33,703
		Firstier Bank, National Association	1,958	First Bank System, Inc.	30,385
		Firstier Bank, National Association, Lincoln	1,149	First Bank System, Inc.	30,385
		Meridian Bank	12,440	CoreStates Financial Corp.	27,568
		Delaware Trust Company	1,413	CoreStates Financial Corp.	27,568
		Comerica Bank-Illinois	1,426	ABN Amro North America Inc.	23,947
		Summit Bank	5,615	UJB Financial Corp.	15,802
		United Counties Trust Company	1,586	Meridian Bancorp, Inc.	14,494
		Union Bank	19,037	Mitsubishi Bank, Limited, The	6,767
		Natwest Bank NA	27,384	Fleet Bank, NA	1,581
1997	25	Boatmen's National Bank of St. Louis	11,180	NationsBank Corp.	173,424
		Boatmen's First National Bank of Kansas	4,160	NationsBank Corp.	173,424
		Boatmen's National Bank of Oklahoma	2,559	NationsBank Corp.	173,424
		SunWest Bank of Albuquerque NA	2,204	NationsBank Corp.	173,424
		Boatmen's National Bank of Arkansas	1,653	NationsBank Corp.	173,424
		Boatmen's First National Bank of Amarillo	1,575	NationsBank Corp.	173,424
		Boatmen's Bank of Southern Missouri	1,252	NationsBank Corp.	173,424
		Signet Bank	11,627	First Union Corporation	140,976
		Liberty B&TC NA	1,858	Banc One Corporation	104,628
		Liberty B&TC of Tulsa NA	1,081	Banc One Corporation	104,628
		Central Bank and Trust Company	1,145	Norwest Corp.	66,098
		Central Fidelity National Bank	10,496	Wachovia Corporation	53,319
		Jefferson National Bank	2,150	Wachovia Corporation	53,319
		U.S. National Bank of Oregon	14,290	First Bank System Inc.	33,548
		US Bank of Washington NA	9,704	First Bank System Inc.	33,548
		US Bank of Idaho	3,824	First Bank System Inc.	33,548
		U.S. Bank of California	2,063	First Bank System Inc.	33,548
		US Bank of Nevada	1,145	First Bank System Inc.	33,548
		United Carolina Bank	4,090	Southern National Corp.	21,213
		FMB-First Michigan Bank	1,317	Huntington Bancshares Inc.	21,031
		Mark Twain Bank	2,025	Mercantile Bancorp Inc.	19,395
		Citizens Bank of Maryland	3,842	Crestar Bank	18,264
		Dauphin Bank & Trust Company	5,791	First Maryland Bancorp	10,837
		KeyBank NA	1,228	Community First Bankshares	3,116
		Valliwide Bank	1,305	WestAmerica Bancorporation	2,516
1998	34	Bank of America NT & SA	171,413	NationsBank Corp.	271,951
		Bank of America NA	7,576	NationsBank Corp.	271,951
		Bank of America Texas NA	5,270	NationsBank Corp.	271,951
		Barnett Bank NA	42,828	NationsBank NA	193,364
		CoreStates Bank NA	40,765	First Union Corporation	162,075
		CoreStates Bank of Delaware	2,103	First Union Corporation	162,075
		First National Bank of Chicago	39,153	Banc One Corporation	117,964
		NBD Bank	21,947	Banc One Corporation	117,964
		NBD Bank NA	9,910	Banc One Corporation	117,964
		American National Bank & Trust Company	8,764	Banc One Corporation	117,964
		First National Bank of Commerce	5,930	Banc One Corporation	117,964
		City National Bank of Baton Rouge	1,178	Banc One Corporation	117,964
		Wells Fargo Bank, NA	88,878	Norwest Corporation	88,540
		Wells Fargo Bank (Texas), NA	6,009	Norwest Corporation	88,540
		Wells Fargo Bank (Arizona), NA	5,214	Norwest Corporation	88,540
		Crestar Bank	24,174	SunTrust Bank Inc.	59,077
		First of America Bank NA	15,282	National City Corporation	54,219
		First of America Bank-Illinois NA	6,062	National City Corporation	54,219
		Fort Wayne National Bank	1,742	National City Corporation	54,219
		First Commercial Bank NA	1,893	Regions Financial Corporation	23,187

4. Continued

Year	Number	Acquired bank	Assets	Acquiring organization	Assets
		Star Bank NA	10,672	Firstar Corporation	21,405
		Magna Bank, National Association	7,041	Union Planters Corporation	16,487
		Capital Bank	2,130	Union Planters Corporation	16,487
		The Peoples First National Bank & Trust Company	1,031	Union Planters Holding Company	16,264
		First National Bank of Evergreen	1,933	Old Kent Financial Corp.	13,670
		OnBank & Trust Company	3,858	Manufacturers & Traders Trust Company	13,360
		Trans Financial Bank NA	1,610	Star Banc Corporation	10,672
		Deposit Guaranty National Bank	6,947	First American Corporation	10,531
		Sumitomo Bank of California, The	4,988	Zions Bancorporation	9,330
		CFX Bank	2,600	Peoples Heritage Financial Group, Inc.	5,806
		Pinnacle Bank	2,094	CNB	4,769
		Heritage Bank	1,312	First Midwest Bancorp Inc.	3,550
		Evergreen Bank, National Association	1,002	Banknorth Group, Inc.	2,957
		George Mason Bank	1,026	United Bankshares Inc.	2,687

NOTE. Based on the year in which the merger was consummated. There are a few differences from the comparable data in the earlier staff study because of corrections and changes to the database. This listing includes holding company to bank acquisitions or bank to bank mergers in which both the acquiring and acquired institutions control more than $1 billion in assets. The asset data for acquired firms are for individual banks. Thus, if a bank holding company is acquired, it must have at least one bank with assets of $1 billion or more to appear on the list. This focus on the acquisition, or absorption, of U.S. commercial banks is consistent with the data presented in all other tables except table 5. Because this approach focuses strictly on bank assets, summation of the banks' assets that are acquired by the same holding company may not reflect the total asset value of that acquisition. For example, BankAmerica Corporation acquired Security Pacific Corporation (1992) in a transaction with a total asset value of $191.9 billion (BankAmerica with $115.5 billion and Security Pacific with $76.4 billion). However, upon summation of the five observations given in this table, Security Pacific's total asset value would be only $62.2 billion. The remaining $14.2 billion of Security Pacific's assets would be found in its banks with less than $1 billion in assets (for example, Security Pacific Bank Alaska, NA, or Security Pacific Bank Idaho, NA) or in its nonbanking subsidiaries. In a manner consistent with all data collection for this study, this table does not reflect holding company acquisitions of thrift institutions, acquisitions by large foreign banking institutions, or assisted transactions.

Mergers by State and Asset Size

The breakdown on the number of mergers by state and by asset size for the acquired banks is shown in table 6 and for the acquiring banks is shown in table 7. Despite the increased frequency of very large mergers in recent years (table 5), most of the acquired banks were fairly small. For example, over 1980–98, 49 percent of the targets had assets of less than $50 million and 85 percent had assets of less than $200 million (table 6). The last two columns of table 6 show that most states had at least one acquired bank with more than $1 billion in assets. As in the earlier study, through 1994, four states—New Jersey, New York, Pennsylvania, and Texas—accounted for a substantial proportion (25 percent) of the large target banks. Nevertheless, large banks were acquired in all but eight states, suggesting that the large acquisitions were associated with a general phenomenon and not primarily with events or economic conditions in particular states.

Not surprisingly, the acquiring banks tended to be large relative to the targets, as table 7 shows. In fact, table 7 almost mirrors table 6, with one-half of the acquiring firms in the two largest size classes (more than $1.0 billion). Only about 3 percent of the acquiring firms were in the two smallest size classes, that is, assets of less than $25 million, and only about 20 percent of the acquiring firms had assets of less than $100 million even though firms of this size accounted for 80 percent of all banks in 1990, near the midpoint of the period under review. In many states, the majority, or nearly the majority, of acquisitions were made by firms in the top two size classes (more than $1.0 billion); however, there were many exceptions. These were mostly less-urbanized states, including Iowa, Kansas, Minnesota, Montana, Nebraska, South Dakota, West Virginia, and Wyoming. Most of these states did not have a substantial number of large banking organizations, but some of them nevertheless had a substantial number of mergers—for example, Kansas (225), Minnesota (228), and Iowa (214). Moreover, even in two more-urbanized states (California and Illinois), the majority of mergers were made by acquiring firms with less than $1.0 billion in assets. This evidence indicates the breadth of the bank merger movement; mergers are not generally confined to certain states or banks of a certain size.

5. Large Mergers of Commercial Banking Organizations, 1954–99

Merger	Approval date[2]	Assets[1]						As a percentage of total U.S. bank assets[4]
		Acquiring		Target		Total		
		Nominal	Constant[3]	Nominal	Constant[3]	Nominal	Constant[3]	
Chemical Bank & Trust Co.–Corn Exchange B&T Co.	10/15/54	2.0	9.8	.8	3.9	2.8	13.7	1.5
Bank of the Manhattan Co.–Chase National Bank	3/31/55	1.7	8.4	5.9	29.1	7.6	37.4	3.8
National City Bank of New York–First National Bank of New York	3/30/55	6.3	31.0	.7	3.4	7.0	34.5	3.5
Bankers Trust Co.–Public National Bank & Trust Co.	4/8/55	2.3	11.3	.6	3.0	2.9	14.3	1.4
Manufacturers Trust Co.–Hanover Bank	9/8/61	3.9	17.2	2.2	9.7	6.1	27.0	2.4
Wells Fargo–Crocker National	4/29/86	22.5	29.7	17.0	22.5	39.5	52.2	1.7
Chemical Bank–Texas Commerce	3/25/87	44.5	57.2	20.5	26.3	65.0	83.5	2.5
Republic Bank Corp.–Interfirst Corp.	4/29/87	22.2	28.5	21.2	27.2	43.4	55.8	1.7
Bank of New York–Irving Bank Corp.	2/25/88	18.0	22.4	17.7	22.0	35.7	44.4	1.4
C&S–Sovran (Avantor Financial Corp.)	7/24/90	22.7	26.1	24.3	28.0	47.0	54.1	1.6
Chemical Bank–Manufacturers Hanover	11/29/91	68.6	76.4	39.2	43.7	107.8	120.1	3.6
NCNB–C&S/Sovran	12/4/91	68.4	76.2	25.1	28.0	93.5	104.2	3.1
BankAmerica–Security Pacific	3/23/92	101.5	110.7	65.1	71.0	166.6	181.7	5.4
KeyCorp.–Society Corp.	1/27/94	32.6	33.9	59.7	62.1	92.3	96.0	2.8
BankAmerica Corp.–Continental Bank Corp.	7/18/94	152.5	158.6	18.0	18.7	170.5	177.3	5.2
First Union Corp.–First Fidelity Bancorp	10/26/95	78.5	79.9	36.2	36.9	114.7	116.8	3.3

Mergers by Year and Asset Size

As seen earlier, the acquired banks were generally fairly small, whereas the acquiring banks were most often relatively large (tables 8 and 9). This was the case during 1960–82—and continued to be the case during 1980–98. For example, over 1980–98, about 71 percent of all 7,985 acquired banks held less than $100 million in assets (table 8, last row). However, the percentage of acquired banks with less than $100 million in assets dropped from a fairly consistent level of about 80 percent throughout the 1980s to 65–75 percent during 1991–95 and to 52–56 percent during 1996–98. The decreasing percentage of small acquired banks is just another sign of the increased prevalence of large and very large bank mergers that characterized the 1990s.

As was true of 1960–82, and not surprisingly, the acquiring firms tended to be large (table 9), at least in comparison to the acquired firms shown in table 8. Over 1980–98, 50 percent of the acquiring firms had assets of more than $1.0 billion, and only 20 percent had assets of less than $100 million (table 9, last row). Surprisingly, the larger size of the acquiring firms was *not* much more pronounced toward the end of the period. For example, during 1996–98, 51–58 percent of all acquisitions involved acquirers with assets greater than $1.0 billion. Such percentages

5. Continued

Merger	Approval date[2]	Assets[1]						As a percentage of total U.S. bank assets[4]
		Acquiring		Target		Total		
		Nominal	Constant[3]	Nominal	Constant[3]	Nominal	Constant[3]	
First Chicago Corp.– NBD Bancorp Inc.	11/7/95	40.6	41.3	46.3	47.2	86.9	88.5	2.5
Fleet Financial Group Inc.– Shawmut National Corp.	11/14/95	44.1	44.9	31.1	31.7	75.2	76.6	2.2
Chemical Banking Corp.– Chase Manhattan Corp.	1/5/96	111.0	111.0	71.9	71.9	182.9	182.9	4.9
Wells Fargo & Co.– First Interstate Bancorp.	3/6/96	53.4	53.4	62.5	62.5	115.9	115.9	3.1
Fleet Financial Group Inc.– National Westminster Banc	4/15/96	84.0	84.0	28.8	28.8	112.8	112.8	3.0
NationsBank Corp.– Boatmen's Bancshares Inc.	12/16/96	173.2	173.2	33.5	33.5	206.7	206.7	5.6
First Bank System Inc.– US Bancorp	6/23/97	32.7	32.2	33.5	33.0	66.2	65.1	1.7
NationsBank Corp.– Barnett Banks Inc.	12/10/97	173.1	170.3	39.8	39.2	212.9	209.4	5.5
First Union Corp.– CoreStates Financial Corp.	4/13/98	155.3	151.0	42.8	41.6	198.1	192.6	4.6
NationsBank Corp.– BankAmerica Corp.	8/17/98	269.4	261.9	184.7	179.6	454.1	441.5	10.7
Bank One Corp.– First Chicago NBD Corp.	9/14/98	117.8	114.5	90.8	88.3	208.6	202.8	4.9
Wells Fargo & Co.– Norwest Corp.	10/14/98	100.6	97.8	77.0	74.9	177.6	172.7	4.2
Firstar Corp.– Mercantile Bancorp.	9/1/99	40.3	38.6	35.8	34.3	76.1	72.9	1.6
Fleet Financial Group Inc.– BankBoston Corp.	9/7/99	114.9	110.1	52.6	50.4	167.5	160.5	3.6

1. Assets are from year-end Call Reports and include only domestic assets for insured commercial banks.
2. Date approved by bank regulator.
3. Constant dollars are based on the GDP implicit price deflator, 1996 = 100. For 1961–99, the index is from the *Economic Report of the President, 2000*, table B-3. The index before 1961 is estimated by changing the GDP price deflator backward in time from 1961 in direct proportion to changes in the consumer price index.
4. Total U.S. bank assets for 1961 and earlier years are from *Moody's Bank and Financial Manual*. Later years are from year-end Call Reports.

were typical from 1992 onward. Before then, acquiring firms with assets of more than $1 billion accounted for 45 to 52 percent of bank mergers, except in 1989 and 1990, when firms with more than $1.0 billion in assets accounted for only about 35 percent of all bank mergers. The financially weakened state of the banking industry in 1989 and 1990 probably caused the low percentages. In any event, relatively larger firms have long tended to be relatively active acquirers, and that has not changed much over time, as table 9 shows. What has changed, however, is that the targets have tended to become larger, as shown in table 8.

Mergers by Size of Acquired and Acquiring Firms

Table 10 shows the average asset size of the acquiring and acquired banks for 1980–98 in current and constant dollars. In current dollars (column 1), the average size of acquired banks increased between fivefold and tenfold from the early 1980s to the late 1990s, with the exception of 1998, when the average size of acquired banks jumped to about $1.2 billion. The size increase of acquired banks was most pronounced during the 1990s in both current and constant dollars.

6. Number of Acquired Banks, by State and Asset-Size Class, 1980–98

State	Asset-size class of acquired banks (millions of dollars)									Total
	0–10	11–25	26–50	51–100	101–200	201–500	501–1,000	1,001–5,000	More than 5,000	
Alabama	4	38	43	29	13	5	1	0	0	133
Alaska	0	0	1	3	3	2	2	0	0	11
Arizona	3	10	10	6	2	3	4	4	5	47
Arkansas	8	30	22	37	21	25	3	4	0	150
California	7	28	48	71	46	32	10	9	7	258
Colorado	33	52	68	61	31	14	2	5	0	266
Connecticut	0	3	8	14	9	7	6	2	4	53
Delaware	1	1	3	3	4	5	2	4	1	24
District of Columbia	0	3	3	1	3	3	3	2	0	18
Florida	9	63	103	92	78	42	13	3	6	409
Georgia	13	66	92	98	45	17	5	2	3	341
Hawaii	0	0	0	0	0	1	1	0	0	2
Idaho	0	4	0	6	3	4	0	4	0	21
Illinois	53	161	174	154	132	55	9	7	6	751
Indiana	7	41	48	87	56	34	8	7	1	289
Iowa	14	78	54	30	25	9	4	0	0	214
Kansas	45	65	38	44	23	8	1	0	1	225
Kentucky	6	28	37	53	44	13	1	6	0	188
Louisiana	4	8	16	37	24	23	13	3	2	130
Maine	0	0	9	2	2	1	4	3	0	21
Maryland	2	12	13	14	14	8	2	8	2	75
Massachusetts	0	7	9	14	9	19	7	4	3	72
Michigan	5	24	37	47	49	16	7	4	3	192
Minnesota	34	77	71	25	13	6	1	1	0	228
Mississippi	8	16	21	14	17	8	0	1	1	86
Missouri	31	90	53	50	30	14	5	5	2	280
Montana	3	13	7	5	1	5	0	0	0	34
Nebraska	30	37	28	11	8	4	1	4	0	123
Nevada	0	1	1	1	4	3	2	3	0	15
New Hampshire	3	4	14	6	8	2	1	1	0	39
New Jersey	2	7	25	37	27	24	13	14	1	150
New Mexico	1	9	12	23	15	6	2	3	0	71
New York	5	11	16	18	11	23	11	13	4	112
North Carolina	5	9	19	21	14	7	0	2	1	78
North Dakota	5	16	12	4	4	0	0	0	0	41
Ohio	7	39	45	31	19	21	9	5	3	179
Oklahoma	21	44	39	29	13	13	3	8	0	170
Oregon	4	14	11	5	5	0	2	2	2	45
Pennsylvania	5	29	46	48	47	30	15	14	5	239
Rhode Island	0	0	1	1	2	0	1	1	0	6
South Carolina	3	12	10	16	14	5	3	3	1	67
South Dakota	5	28	8	4	0	1	0	0	0	46
Tennessee	7	26	53	42	37	20	5	4	1	195
Texas	50	220	294	234	159	93	18	12	6	1,086
Utah	4	3	4	4	3	1	4	1	0	24
Vermont	0	5	4	3	2	0	0	0	0	14
Virginia	6	31	21	39	17	8	0	6	5	133
Washington	1	18	21	21	5	5	1	5	5	82
West Virginia	3	36	48	55	17	10	0	0	0	169
Wisconsin	28	77	98	85	37	18	6	1	0	350
Wyoming	5	10	9	2	2	3	0	2	0	33
Total	**490**	**1,604**	**1,827**	**1,737**	**1,167**	**676**	**211**	**192**	**81**	**7,985**

7. Number of Acquiring Organizations, by State and Asset-Size Class, 1980–98

State	Asset-size class of acquiring organizations (millions of dollars)									Total
	0–10	11–25	26–50	51–100	101–200	201–500	501–1,000	1,001–5,000	More than 5,000	
Alabama	0	4	17	18	8	14	10	52	10	133
Alaska	0	0	0	1	0	0	2	1	7	11
Arizona	0	1	1	3	2	1	4	15	20	47
Arkansas	0	4	5	14	11	15	9	34	58	150
California	0	3	8	30	46	51	30	38	52	258
Colorado	5	16	8	23	19	21	3	72	99	266
Connecticut	0	0	2	1	2	7	5	18	18	53
Delaware	0	0	0	0	1	0	3	6	14	24
District of Columbia	0	0	1	2	1	1	1	3	9	18
Florida	0	3	11	17	25	35	27	119	172	409
Georgia	0	8	22	39	33	33	27	64	115	341
Hawaii	0	0	0	0	0	0	0	1	1	2
Idaho	0	0	1	0	0	2	6	5	7	21
Illinois	1	20	57	90	87	117	55	117	207	751
Indiana	0	2	12	28	22	28	24	88	85	289
Iowa	0	15	35	33	17	22	8	28	56	214
Kansas	5	24	39	42	21	24	10	39	21	225
Kentucky	0	0	10	21	11	27	18	50	51	188
Louisiana	0	2	3	9	12	8	9	48	39	130
Maine	0	0	0	0	0	3	3	8	7	21
Maryland	0	0	2	2	6	6	11	28	20	75
Massachusetts	0	0	2	2	4	2	7	22	33	72
Michigan	0	0	5	13	13	18	15	56	72	192
Minnesota	1	29	60	36	29	25	4	11	33	228
Mississippi	0	5	3	12	11	11	7	27	10	86
Missouri	4	24	31	23	20	33	19	60	66	280
Montana	0	2	5	12	3	7	0	2	3	34
Nebraska	5	18	30	22	17	7	3	8	13	123
Nevada	0	0	0	0	1	0	1	2	11	15
New Hampshire	0	1	2	4	3	11	8	7	3	39
New Jersey	0	0	3	2	9	13	38	54	31	150
New Mexico	0	0	2	8	5	4	3	6	43	71
New York	0	1	1	5	7	12	8	21	57	112
North Carolina	0	0	2	4	14	6	16	23	13	78
North Dakota	0	6	12	8	3	1	2	6	3	41
Ohio	0	2	9	14	23	22	25	56	28	179
Oklahoma	0	7	24	23	30	19	6	40	21	170
Oregon	0	2	1	7	7	7	4	0	17	45
Pennsylvania	0	2	2	15	18	40	55	63	44	239
Rhode Island	0	0	0	0	0	0	1	1	4	6
South Carolina	0	0	0	2	4	4	14	27	16	67
South Dakota	0	9	3	17	11	2	1	0	3	46
Tennessee	0	2	14	14	19	21	5	43	77	195
Texas	0	28	91	123	118	99	57	128	442	1,086
Utah	0	1	3	0	0	1	3	9	7	24
Vermont	0	0	0	2	4	3	4	1	0	14
Virginia	0	2	4	7	10	20	6	59	25	133
Washington	0	1	4	4	7	15	7	19	25	82
West Virginia	0	2	4	15	26	61	23	33	5	169
Wisconsin	3	9	29	37	19	41	25	99	88	350
Wyoming	0	2	4	6	4	5	2	2	8	33
Total	**24**	**257**	**584**	**810**	**763**	**925**	**634**	**1,719**	**2,269**	**7,985**

8. Number of Acquired Banks, by Year and Asset-Size Class, 1980–98

Year	Asset-size class of acquired bank (millions of dollars)									Total
	0–10	11–25	26–50	51–100	101–200	201–500	501–1,000	1,001–5,000	More than 5,000	
1980	21	59	53	28	24	4	1	0	0	190
1981	29	100	110	66	29	15	6	4	0	359
1982	32	121	105	71	43	32	13	3	0	420
1983	38	116	97	71	61	27	10	8	0	428
1984	39	98	128	84	43	24	11	12	2	441
1985	31	106	108	103	68	41	10	7	1	475
1986	45	112	126	130	84	48	16	11	1	573
1987	25	108	131	165	130	58	14	15	3	649
1988	32	119	112	95	58	27	11	11	3	468
1989	39	98	94	63	23	22	4	6	1	350
1990	34	102	97	68	38	18	4	2	2	365
1991	24	84	81	73	33	27	6	9	8	345
1992	23	78	79	83	63	42	9	17	7	401
1993	18	87	106	90	68	37	11	16	3	436
1994	20	62	92	122	75	44	15	13	3	446
1995	12	55	70	88	63	25	12	11	9	345
1996	9	28	73	108	78	53	13	17	13	392
1997	9	37	74	94	77	59	15	13	6	384
1998	10	34	91	135	109	73	30	17	19	518
Total	**490**	**1,604**	**1,827**	**1,737**	**1,167**	**676**	**211**	**192**	**81**	**7,985**
(Percent)	6	20	23	22	15	8	3	2	1	. . .

9. Number of Acquisitions, by Year and Asset-Size Class of Acquiring Organization, 1980–98

Year	Asset-size class of acquiring organization (millions of dollars)									Total
	0–10	11–25	26–50	51–100	101–200	201–500	501–1,000	1,001–5,000	More than 5,000	
1980	0	10	13	15	16	23	26	72	15	190
1981	1	12	26	30	22	46	48	126	48	359
1982	0	15	27	36	40	43	51	130	78	420
1983	1	19	35	35	43	53	43	149	50	428
1984	2	20	37	54	42	40	36	117	93	441
1985	1	16	45	69	29	58	44	119	94	475
1986	2	17	55	45	48	67	47	147	145	573
1987	2	12	51	57	31	43	30	122	301	649
1988	4	21	44	56	45	45	23	65	165	468
1989	1	26	33	58	46	41	22	54	69	350
1990	1	18	46	60	44	49	23	51	73	365
1991	4	17	36	46	46	31	13	51	101	345
1992	2	18	42	38	42	34	26	61	138	401
1993	0	12	27	49	49	54	30	94	121	436
1994	1	9	24	40	48	55	45	71	153	446
1995	0	6	17	31	37	55	22	50	127	345
1996	1	2	10	28	37	58	26	57	173	392
1997	1	4	9	22	55	52	37	79	125	384
1998	0	3	7	41	43	78	42	104	200	518
Total	**24**	**257**	**584**	**810**	**763**	**925**	**634**	**1,719**	**2,269**	**7,985**
(Percent)	0	3	7	10	10	12	8	22	28	. . .

10. Average Asset Size of Acquired Banks and Acquiring Banking Organizations, 1980–98
Millions of dollars

Year	Acquired banks: Current dollars	Acquired banks: 1992 dollars[1]	Acquiring organizations: Current dollars	Acquiring organizations: 1992 dollars[1]
1980	54	89	1,743	2,891
1981	95	144	2,266	3,433
1982	98	140	2,569	3,660
1983	117	160	1,972	2,696
1984	158	208	3,101	4,086
1985	141	180	2,326	2,963
1986	165	205	3,873	4,805
1987[2]	190	229	14,036	16,899
1988	187	217	6,249	7,258
1989	124	138	3,444	3,839
1990	119	127	3,829	4,091
1991	436	448	9,789	10,061
1992	413	413	10,459	10,459
1993	236	230	9,305	9,069
1994	251	239	8,233	7,833
1995	525	488	11,021	10,252
1996	696	635	35,929	32,803
1997	432	387	9,560	8,569
1998	1,216	1,080	16,728	14,860

1. Based on the 1992 GDP implicit price deflator, *Economic Report of the President, 1999*, table B3.
2. The exceptionally large average size of acquiring organizations in 1987 reflects the very large number of banks acquired in Texas that year by Chemical Corp., First Interstate, and Republic, which acquired large Texas multibank holding companies (respectively, Texas Commerce, Allied, and Interfirst).

Interestingly, the tendency toward increasing size of acquired banks during the 1980s contrasts with the period 1960–82, when there was not a clear tendency toward increased size. The likely cause for this difference, I propose, was the increased opportunities for geographic expansion during the 1980s due to liberalized state branching laws, especially reciprocal interstate banking arrangements between various states. Those changes arguably opened the door to larger mergers. The further increase in the average size of targets during the 1990s likely represents a continuing, even heightened, response to more-recent opportunities for interstate mergers initiated by states and the anticipation of federal legislation allowing full nationwide banking. This development, of course, came to pass in the form of the Riegle–Neal Act of 1994, which provided even greater opportunities for large mergers, perhaps along with a greater incentive to quickly establish an extensive interstate banking franchise.

The pattern of increase in the size of the acquired banks in current and constant 1992 dollars closely parallels the asset-size data for the acquiring organization, as shown in table 10 (columns 3 and 4). The average size of acquiring firms in constant 1992 dollars increased from around $3 billion in the first half of the 1980s to $10 billion–$33 billion during the late 1990s. The unusually large averages in certain years, such as 1987 and 1996, reflect a relatively sizable number of very large mergers in those years. Table 3 shows that interstate mergers contributed substantially to the count of large mergers in a given year.

Mergers by Type of Merger and Market

The types of mergers that have occurred (horizontal or market extension) and the types of markets in which they have taken place (urban or rural) are shown in tables 11 and 12. Horizontal mergers are mergers in which the two firms have offices in the same market, whereas market extension mergers are those in which the firms do not have offices in the same market. Urban and rural markets are roughly approximated by MSAs (metropolitan statistical areas) and non-MSA counties, respectively.

11. Number and Percentage of Acquisitions, by Type, 1980–98

Year	Horizontal: Number	Horizontal: Percent	Market extension: Number	Market extension: Percent	Total
1980	85	45	105	55	190
1981	177	49	182	51	359
1982	209	50	211	50	420
1983	278	65	150	35	428
1984	239	54	202	46	441
1985	210	44	265	56	475
1986	287	50	286	50	573
1987	213	33	436	67	649
1988	192	41	276	59	468
1989	195	56	155	44	350
1990	195	53	170	47	366
1991	189	55	156	45	345
1992	164	41	237	59	401
1993	222	51	214	49	436
1994	237	53	209	47	446
1995	116	33	229	66	345
1996	137	35	255	65	392
1997	142	37	242	63	384
1998	207	40	311	60	518
Total	**3,694**	**46**[1]	**4,291**	**54**[1]	**7,985**

1. Average.

As may be seen in table 11 (column 2), until 1995 the percentage of mergers that were horizontal remained roughly around 50 percent, ranging from approximately 40 percent to 55 percent, above a very low 33 percent in 1987 but below a very high 65 percent in 1983. However, there were indications of a basic change in this pattern during 1995–98. During this period, a relatively low 33–40 percent of mergers were horizontal mergers. This tendency is consistent with the argument that, in more recent years, the nationwide removal of restrictions on interstate banking has stimulated mergers to expand the geographic extent of banking franchises. In fact, some of the largest mergers in recent years involved little, if any, direct market overlap, suggesting that the emphasis was on expanding the scope of the franchise. It seems very likely, however, that when the growth-oriented banking organizations become more or less satisfied with the geographic scope of their operations, their emphasis will shift toward horizontal mergers, through which banks increase their market share and influence over prices in individual local banking markets. Of course, the pattern for market extension mergers, shown in table 11 (columns 3 and 4), is the opposite of the pattern for horizontal mergers.

12. Number and Percentage of Acquisitions, by Type of Market, 1980–98

Year	MSA[1]		Non-MSA county		Total
	Number	Percent	Number	Percent	
1980	104	55	86	45	190
1981	214	60	145	40	359
1982	283	67	137	33	420
1983	250	58	178	42	428
1984	268	61	173	39	441
1985	272	57	203	43	475
1986	326	57	247	43	573
1987	415	64	234	36	649
1988	271	58	197	42	468
1989	205	59	145	41	350
1990	196	54	169	46	365
1991	202	59	143	41	345
1992	206	51	195	49	401
1993	251	58	185	42	436
1994	255	57	191	43	446
1995	201	58	144	42	345
1996	216	55	176	45	392
1997	216	56	168	44	384
1998	297	57	221	43	518
Total	**4,648**	**58**[2]	**3,337**	**42**[2]	**7,985**

1. MSA = metropolitan statistical area.
2. Average.

The location (rural versus urban areas) of acquired banks is shown in table 12. The distribution of acquired banks between MSAs and non-MSA counties remained remarkably constant over 1980–98. For the period as a whole, on average, 58 percent of the acquired banks were located in MSAs (table 12, last row), and there was relatively little deviation from that percentage. This average percentage is somewhat higher than, but similar to, the average of 54 percent for the earlier period 1960–82, so no apparent forces were at work changing the relative importance of rural and urban areas for bank mergers.

Given that there are many more non-MSA markets than MSA markets and that there are somewhat more banks in non-MSA counties than in MSAs, these data suggest that MSA markets are in some way more attractive for bank mergers than rural areas.[12] MSA markets may provide better opportunities for increased size and growth and be particularly attractive for expansion-minded firms. However, it must be recognized that many mergers (especially horizontal ones) may have less to do with the incentive to expand or grow than with the incentive to increase market share and influence over prices. Thus, these data cannot be regarded as clear indicators of the relative attractiveness of urban and rural areas for entry, either de novo or by merger.[13]

Mergers by Type of Acquirer and Regulator

Over 1980–98, about 64 percent of bank mergers were made by multibank holding companies or banks owned by multibank holding companies (table 13, last row). Twenty-seven percent were made by one-bank holding companies or their banks, and only 9 percent were made by independent banks. There was no particularly notable change in the type of acquiring firm over the entire period or during any part of the 1990s. This lack of change is not surprising because the percentage of U.S. banks in multibank holding companies has remained constant at around 30 percent since 1985 and was around 20 percent in 1980. It is also not surprising that multibank holding companies and their banks account for about two-thirds of all bank mergers

12. Approximately 54 percent of banks were located in non-MSA counties in 1990. This percentage declined from 56 percent in 1980 to 52 percent in 1998.

13. Research on this issue over the years consistently finds that larger markets tend to be more attractive for entry than smaller markets. For findings regarding true entry, that is, entry by a new bank or branch by a banking organization not previously in the market, see Amel and Liang (1997); and for entry by merger, as opposed to true new entry, see Rhoades (1976) and Amel (1989).

13. Number and Percentage of Acquisitions, by Type of Acquiring Organization, 1980–98

Year	Multibank holding company[1]		One-bank holding company		Independent bank		Total
	Number	Percent	Number	Percent	Number	Percent	
1980	112	59	26	14	52	27	190
1981	236	66	51	14	72	20	359
1982	257	61	97	23	66	16	420
1983	235	55	137	32	56	13	428
1984	248	56	122	28	71	16	441
1985	272	57	168	35	35	8	475
1986	379	66	157	27	37	7	573
1987	490	76	131	20	28	4	649
1988	335	72	105	22	28	6	468
1989	209	60	102	29	39	11	350
1990	219	60	115	32	31	8	365
1991	218	63	86	25	41	12	345
1992	265	66	119	30	17	4	401
1993	299	69	106	24	31	7	436
1994	306	69	120	27	20	4	446
1995	226	66	99	29	20	5	345
1996	263	67	103	26	26	7	392
1997	250	65	117	30	17	5	384
1998	337	65	172	33	9	2	518
Total	**5,156**	**64**[2]	**2,133**	**27**[2]	**696**	**9**[2]	**7,985**

1. Includes acquisitions by their subsidiary banks.
2. Average.

because, even though they controlled only about 30 percent of all banks during 1980–98, their banks held about 75 percent of all banking assets throughout most of the period. Thus, multibank holding companies tend to be larger firms with larger banks, and as we have seen in earlier tables, acquirers tend to be relatively large. The percentage of acquisitions made by one-bank holding companies increased marginally from the 1980s to the 1990s. In contrast, the percentage of acquisitions made by independent banks decreased over time, in part because the percentage of banks that were owned by one-bank holding companies increased steadily from the 20–30 percent range in the early 1980s to 50 percent in 1999.[14]

Three federal bank regulators are responsible for approving, or not approving, bank merger proposals: the FRB, the OCC, and the FDIC. The role that each regulator played during 1980–98 in approving bank mergers is shown in table 14, in terms of the number of mergers approved and the assets of the acquired firms in those mergers. Over this period, the Board approved 71 percent of all individual bank acquisitions, compared with 14 percent and 15 percent for the OCC and the FDIC, respectively.[15] These percentages translate to 5,647 approvals by the Federal Reserve, 1,165 by the OCC, and 1,173 by the FDIC (table 14, last row). The Federal Reserve has a large role because it is the designated regulator of bank holding companies, and during this period these companies were the primary vehicle for bank mergers. Over time, there has been no clear change in the percentage of acquisitions approved by the three agencies. The Federal Reserve has fluctuated around 71 percent, and the OCC and the FDIC have each fluctuated around 15 percent.

With respect to the assets acquired in bank mergers, those mergers approved by the Federal Reserve accounted for about 88 percent of the $2.44 trillion of acquired bank assets, which is

14. Independent banks are generally small. Moreover, they have accounted for a declining share of the number of banks since 1980, as the share has gone down steadily from about 35 percent to 20 percent, and their share of bank assets has declined from about 10 percent to 3 percent. The decline in their number reflects largely the conversion of many small banks to bank holding company form. Data on the number and share of banks held by bank holding companies and independent banks are from table 1, "Banks and Bank Holding Companies," compiled by the Financial Structure Section (Washington: Board of Governors of the Federal Reserve System, Division of Research and Statistics, 1999 [internal data]).

15. Each bank in a multibank holding company that is acquired is treated as a separate acquisition even though several banks may be acquired in a single purchase.

14. Number of Acquisitions and Amount of Bank Assets Acquired, by Approving Regulator, 1980–98
Assets in millions of dollars

Year	Comptroller of the Currency		Federal Reserve Board		Federal Deposit Insurance Corporation		Total	
	Acquisitions	Assets	Acquisitions	Assets	Acquisitions	Assets	Acquisitions	Assets
1980	32	1,443	116	6,252	42	2,486	190	10,182
1981	68	17,865	252	13,741	39	2,462	359	34,068
1982	85	9,315	279	28,481	56	3,076	420	40,872
1983	60	9,172	305	30,985	63	9,890	428	50,047
1984	66	8,968	331	59,424	44	1,428	441	69,820
1985	58	6,507	376	58,917	41	1,695	475	67,120
1986	50	3,723	467	87,628	56	3,056	573	94,407
1987	45	2,574	544	117,765	60	2,953	649	123,292
1988	75	5,717	333	72,926	60	9,065	468	87,709
1989	96	4,345	217	37,834	37	1,206	350	43,386
1990	73	15,968	188	22,033	104	5,593	365	43,593
1991	35	3,788	224	142,177	86	4,321	345	150,286
1992	66	3,670	288	159,626	47	2,125	401	165,421
1993	99	16,598	283	83,038	54	3,417	436	103,052
1994	64	12,032	304	94,658	78	5,068	446	111,759
1995	57	6,496	230	170,594	58	3,919	345	181,008
1996	55	10,233	269	249,465	68	12,956	392	272,653
1997	46	5,504	273	152,709	65	7,833	384	166,046
1998	35	49,147	368	559,449	115	21,205	518	629,801
Total	**1,165**	**193,066**	**5,647**	**2,147,702**	**1,173**	**103,754**	**7,985**	**2,444,522**

NOTE. Total asset figures summed across regulators may not equal the figures summed across years because of rounding.

considerably larger than the 71 percent of the total number of bank mergers approved by the Federal Reserve (table 14). As with the number of mergers, the Board's lead position in merger approvals based on assets acquired simply reflects its role as the designated regulator of bank holding companies. Its lead held throughout the review period. Although the OCC and FDIC approved almost the same number of mergers (1,165 and 1,173, respectively), the assets of the acquired banks in the mergers approved by the OCC accounted for about 8 percent of acquired assets, and those for the FDIC accounted for 4 percent. This difference simply reflects the fact that the OCC regulates banks with national charters whereas the FDIC regulates state-chartered nonmember banks, which tend to be small. Overall, no particular pattern over time in the bank mergers approved by the three federal bank regulators was discerned.

3. Industrywide Structure and Performance

Many of the trends that began in the early 1980s continued into the late 1990s (table 15).

Mergers, Charters, and Failures

Merger activity has persisted at a high level relative to the pre-1981 period. The number of mergers jumped from 190 in 1980 to well over 300 in 1981 and never dropped below 345 after that. The strength and longevity of this merger movement has been impressive, and it probably reflects, as noted earlier, the periodic creation of new opportunities for mergers as the individual states, and ultimately the Congress, changed laws to allow increased intrastate or interstate banking. Moreover, from the late 1980s onward, large bank mergers became much more common than they were in earlier years. Such mergers gained greater significance during the 1990s because of the exceptionally large size of many of the large mergers.

Although the number of new banks chartered and of bank failures may also be expected to affect banking structure, it is apparent that their effect on banking structure is swamped by bank mergers in terms of numbers and bank assets. For example, the number of bank failures was relatively small even during the peak years 1985–90, when the banking industry was having financial difficulties

15. Industrywide Banking Structure and Performance, 1980–98

Item	Source	1980	1981	1982	1983	1984	1985	1986	1987
Mergers, charters, failures									
Bank mergers	FSR	190	359	420	428	441	475	573	649
Large bank mergers[1]	FSR	0	1	2	5	7	12	9	19
New charters	BOG	206	199	316	366	400	318	248	212
Failures	FDIC	10	7	32	45	78	116	141	186
Banks, offices									
Banks	NIC	14,407	14,389	14,406	14,405	14,381	14,268	14,051	13,541
Banking organizations	NIC & BOG	12,342	12,177	11,922	11,672	11,354	11,021	10,512	10,100
Banking offices	NIC & BOG	52,710	54,734	53,826	55,109	56,050	57,417	58,180	58,820
ATMs (bank and other)									
ATMs (number)	FRBOP	18,500	25,790	35,721	48,118	58,470	61,117	64,000	68,000
Number of transactions (billions)	FRBOP	.9	1.2	1.8	2.9	3.5	3.6	3.6	4.1
Value of transactions (billions)	FRBOP	48.8	69.6	106.2	174.0	220.5	227.8	231.6	263.2
Checks (number in billions)	FRBOP	35.2	36.3	40.1	42.5	44.5	46.6	47.5	49.2
Concentration, United States (percent of assets)									
Top 10	NIC	18.6	17.9	18.1	17.8	17.2	17.0	17.6	18.1
Top 25	NIC	29.1	28.7	29.1	28.7	28.3	28.5	29.6	31.1
Top 50	NIC	37.1	36.7	37.7	37.9	38.5	40.5	42.4	44.1
Top 100	NIC	46.8	46.6	48.1	48.8	50.1	52.6	55.6	57.4
Concentration, market (bank deposits only)[2]									
CR_3 of MSAs, percent	SOD	66.4	66.0	65.8	65.9	66.3	66.7	67.5	67.7
CR_3 of non-MSA counties, percent	SOD	89.6	89.4	89.3	89.4	89.4	89.4	89.5	89.5
HHI of MSAs	SOD	1973	1958	1961	1948	1958	1990	2022	2014
HHI of non-MSA counties	SOD	4417	4372	4360	4350	4358	4357	4345	4334
Markets (number)[3]	SOD	2,687	2,685	2,689	2,690	2,692	2,693	2,691	2,691
Concentration, market (w/50 percent thrift deposits)[2]									
CR_3 of MSAs, percent	SOD	NA	NA	NA	NA	53.2	53.4	54.0	54.4
CR_3 of non-MSA counties, percent	SOD	NA	NA	NA	NA	83.5	83.4	83.2	83.3
HHI of MSAs	SOD	NA	NA	NA	NA	1366	1373	1388	1402
HHI of non-MSA counties	SOD	NA	NA	NA	NA	3781	3766	3744	3754
Markets (number)[3]	SOD	NA	NA	NA	NA	2,700	2,701	2,695	2,696
Economic and financial indicators									
GDP growth[4]	FAME	.10	1.27	–1.54	7.38	5.67	4.01	2.86	4.56
Bank stock index	S&P	102.9	117.8	95.9	113.2	95.2	101.6	114.4	109.5
Average return on assets[5]	CALL	1.18	1.15	1.03	.89	.74	.61	.40	.45
Average return on equity[6]	CALL	13.8	13.1	11.6	9.9	8.1	6.3	3.6	3.7

NOTE. BOG = Board of Governors. CALL = Call Reports, Federal Reserve Board. CR_3 = Three-firm deposit concentration ratio. FAME = FAME U.S. database, Federal Reserve Board. FDIC = FDIC Historical Statistics on Banking. FRBOP = Division of Reserve Bank Operations, Federal Reserve Board. FSR = Financial Structure Section, Federal Reserve Board. HHI = Herfindahl–Hirschmann index. MSA = Metropolitan statistical area. NA = Not applicable. NIC = NIC database, Federal Reserve Board. S&P = S&P Major Regional Banks Security Price Index (Yearly Averages, 1941–43 = 10). SOD = Summary of Deposits tapes, FDIC and Federal Reserve Board.

15. Continued

1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
468	350	365	345	401	436	446	345	392	384	518
14	2	6	16	22	17	15	14	28	25	34
228	201	175	107	73	59	48	110	148	207	193
209	206	158	105	98	40	11	6	5	1	3
12,966	12,555	12,194	11,790	11,349	10,867	10,359	9,855	9,446	9,064	8,697
9,718	9,455	9,221	9,007	8,730	8,318	7,896	7,571	7,313	7,122	6,839
59,568	61,218	63,392	64,681	65,122	63,658	65,097	68,073	68,694	70,698	71,231
72,492	75,632	80,156	83,545	87,330	94,822	109,080	122,706	139,034	165,000	187,000
4.5	5.1	5.8	6.4	7.2	7.8	8.3	9.7	10.7	11.0	11.2
297.0	330.0	383.0	429.0	482.0	514.8	558.4	650.6	716.9	735.7	761.6
50.3	52.9	55.3	56.8	57.7	59.4	61.0	62.3	63.4	66.0	68.9
19.2	19.9	20.0	22.7	24.1	25.0	25.2	25.6	29.8	29.9	36.7
33.2	34.1	34.9	37.5	39.2	41.0	41.5	43.0	46.8	47.0	51.2
47.5	48.1	48.9	49.6	51.7	53.8	54.6	55.8	59.0	59.6	62.6
59.9	60.5	61.4	61.3	62.6	64.6	65.9	66.9	68.6	69.1	70.9
67.8	67.5	67.5	66.7	67.5	66.8	66.6	66.3	66.9	66.0	65.8
89.7	89.7	89.6	89.3	89.2	89.2	89.0	88.8	88.7	88.4	88.0
2020	2010	2010	1977	2023	1994	1976	1963	1991	1973	1975
4316	4317	4291	4257	4222	4234	4208	4171	4145	4119	4088
2,685	2,685	2,684	2,685	2,683	2,586	2,586	2,583	2,583	2,582	2,583
54.6	55.0	56.1	57.0	58.2	58.7	59.2	59.4	60.2	59.6	60.0
83.4	83.8	84.2	84.7	85.0	85.5	85.6	85.6	85.6	85.4	85.2
1400	1423	1468	1511	1563	1588	1606	1619	1639	1632	1666
3726	3761	3788	3831	3832	3887	3880	3858	3844	3833	3816
2,686	2,686	2,685	2,687	2,684	2,588	2,587	2,584	2,584	2,583	2,587
3.69	2.54	.53	1.17	4.14	2.21	4.16	2.21	4.21	4.28	4.61
103.2	122.2	95.5	114.3	150.3	179.8	177.7	203.3	272.6	394.8	NA
.59	.75	.67	.72	1.00	1.11	1.13	1.19	1.21	1.24	1.20
6.0	7.7	6.8	7.8	11.2	11.9	11.9	12.1	12.2	12.2	11.7

1. The acquiring firm and target bank both have assets greater than $1.0 billion.

2. Changes in concentration were essentially the same when CR_1 was used instead of CR_3.

3. The number of markets is the sum of all MSAs and non-MSA counties in the United States. The number of markets tends to decline over time as new areas meet the criteria for being defined as MSAs, which are composed of one or more counties, and counties are incorporated into MSAs. In addition, expanding suburbs result in the inclusion of additional counties into existing MSAs.

4. The GDP growth series presented here uses data that have been revised since 1994.

5. Average return on assets is the average of net income after taxes-to-total assets ratios for two dates—December 31 of the current and preceding years.

6. Average return on equity is the average of net income after taxes-to-total equity ratios for two dates—December 31 of the current and preceding years.

stemming from problem loans in agriculture, petroleum, and real estate, as well as to developing countries. Furthermore, the bulk of these failures involved relatively small banks. The number of new bank charters granted by state and federal regulators has generally been substantially greater than the number of failures but considerably smaller than the number of mergers. However, newly chartered banks are typically extremely small (representing less than 1 to 2 percent of the local market deposits) and thus will generally have little substantive effect on banking structure or performance in the short run. As the data on the number of banks and U.S. banking concentration show, the effect of mergers has been large.

Banks and Offices

The decline in the number of banks that began in 1984, when there were 14,381 banks, has continued unabated. There has been a remarkably persistent and consistent decline of about 400-500 banks per year since 1986, so that by the end of 1998 there were 8,697 banks.[16] There has also been a persistent decline in the number of *banking organizations* since 1984.[17] The long-running merger movement is clearly changing the overall structure of the banking industry.

In view of the large decline in the number of banks in the United States, it is somewhat surprising that the number of banking offices persistently increased throughout the entire period, from about 53,000 offices in 1980 to more than 71,000 offices in 1998. Moreover, the population per banking office in the United States has declined from 4,311 in 1980 to 3,935 in 1990 and to 3,795 in 1998.[18] These data are strong indicators that, from the supply side of the banking industry, local market representation is generally important, if not mandatory, if a bank is to be a viable competitor. Survey data for households and small businesses, from the demand side of the market, are strongly consistent with the relevance of local banking markets.[19]

ATMs and Checks

At one time, automated teller machines (ATMs) were believed to be the death knell of brick-and-mortar banking. Indeed, ATMs proved to be extraordinarily popular, and their numbers mushroomed from 18,500 in 1980 to about 187,000 in 1998. The number of ATM transactions increased from nearly 1 billion in 1980 to 11.2 billion in 1998, and the dollar value of transactions rose from about $49 billion to $762 billion over the same period. It is significant that, despite the huge increase in ATMs and in ATM usage, the number of banking offices continued to increase as well, even given a large decline in the number of banks, which would seemingly lead to a decline in the number of offices. That simply has not happened. It is clear that ATMs are not a substitute for banking offices. Indeed, ATMs have proven to be primarily a convenient and popular additional service used for obtaining cash. A further indication of the limited penetration of electronic banking in the retail banking arena is that check volume has risen throughout 1980–98, from about thirty-five billion checks to about sixty-nine billion.[20]

One of the interesting and rather surprising side effects of retail electronic banking is that, at least in the short run, it has probably reduced, rather than increased, competition by raising switching costs. Switching costs are the costs incurred by customers from changing banks. Switching costs have risen because of the increased difficulty in, for example, stopping electronic relationships with one bank (for example, direct deposits and direct debits of bills, charitable contributions, and so forth) and switching them to another bank.[21] In some cases, changing banks requires switching software. The benefits to banks of electronic banking with respect to switching costs have not gone unnoticed by bank analysts and presumably by banks. For example,

16. The decline in the number of banks from one year to the next cannot be calculated by subtracting the number of mergers and failures and adding the number of new charters to the previous year's numbers of banks. A major reason is that mergers of banks belonging to the same bank holding company are treated as corporate reorganizations rather than mergers.

17. Banking organizations are defined so as to treat all of the banks within a bank holding company as a single entity.

18. Resident population data for 1980 and 1990 are from the U.S. Department of Commerce (1998), table 2. Population data for 1998 are a projection reported in table 3.

19. Similarly, the survey data from households and small businesses indicate that, from the demand side, local offices are preferred by customers. See Kwast, Starr-McCluer, and Wolken (1997). Data from the Federal Reserve Board's 1998 Survey of Consumer Finances regarding distance to households' financial institutions are very similar to data reported by Kwast et al., based on the 1992 survey.

20. The growth in check volume did not keep pace with the growth in gross domestic product, which increased threefold in constant dollars. Nevertheless, the failure of retail electronic transactions to replace paper transactions is longstanding and highlights the uncertainty in predicting whether or when paper (checks and currency) will become an anachronism. For example, nearly thirty-five years ago, an expert on electronic funds transfer, and a governor of the Federal Reserve Board, predicted that "within the discernible future . . . check usage as we know it will have disappeared." Since that time, the number of checks cleared annually has increased fourfold. See Mitchell (1966).

21. For further discussion of increased switching costs associated with electronic banking and the unbundling of prices and services in banking, see Rhoades (1997, 2000).

in a summary of objectives and issues for online financial service providers, Hagel, Hewlin, and Hutchins noted in the *McKinsey Quarterly* that direct deposit, bill payment, and other switching barriers are "hooks for institutional customer retention."[22] Similarly, *Moody's* noted in a report on the Internet and American banks that "switching bank accounts is difficult, time consuming, and disruptive—the financial equivalent of root-canal work."[23]

U.S. Concentration

Concentration of U.S. banking deposits in the largest banking organizations generally has increased since 1980. For example, the twenty-five largest banking organizations accounted for 29.1 percent of deposits in 1980, 34.9 percent in 1990, 41.5 percent in 1994, and 51.2 percent in 1998. Percentages for the 100 largest banking organizations during the same years are 46.8, 61.4, 65.9, and 70.9. The very largest banks (top ten) showed the most modest increase in control over U.S. banking deposits during the 1980s, reflecting relatively modest merger activity by these banks during that period. That pattern, however, changed substantially during the 1990s, as very large bank mergers became much more common and included such mergers as Chemical with Chase Manhattan, NationsBank with BankAmerica, and BancOne with First Chicago/NBD. As a consequence, the percentage of deposits accounted for by the top ten increased from 20 percent in 1990, to 25.2 percent in 1994, and to 36.7 percent in 1998.

The United States as a whole probably is not a meaningful banking market even for wholesale banking services for large or midsize corporations much less for retail banking services for households and small businesses, which generally rely on banks with a local presence.[24] Consequently, the economic implications of the increase in aggregate U.S. banking concentration are not clear, at least from the standpoint of competition in retail banking. The increase in aggregate banking concentration appears to be a competition issue only if the sheer relative size of the biggest banks, or their meeting one another in an increasing number of markets, tends to affect competition in local markets.[25] Hanweck and Shull express concern that the increasing contacts across local markets between big banks is likely to cause them to reduce their competitive efforts. The authors also argue that, because a number of big banks have now become too big for the government to allow them to fail, they have a cost advantage in raising capital vis-à-vis smaller banks. This cost advantage, in turn, gives them a basic competitive advantage because they have leverage to be price setters despite the presence of smaller competitors.[26] Although large banks may have this particular cost advantage, a recent study indicates that large geographically diversified banking organizations do not have net competitive advantages over smaller banks, at least so far as advantages are manifested in market share.[27]

Market Concentration: Overall Averages for MSAs and Non-MSA Counties

The data on local market concentration are interesting and perhaps surprising given the magnitude of the merger movement and the apparent substantial effect of mergers on aggregate U.S. bank concentration. In particular, average local market concentration measures (the HHI and CR_3), based on commercial bank deposits only (table 15), hardly budged throughout 1980–98.[28] For example, in the MSAs, the CR_3 remained at about 67 percent, and the HHI hovered very close to 2000. Despite the lack of increase, in MSAs the average HHI based on commercial banks was nearly 2000, which is above the 1800 level specified in the Department of Justice merger guidelines as the cutoff between moderately and highly concentrated markets. In non-MSA counties, the CR_3 remained at about 89 percent, and the HHI steadily declined from around 4400 to about 4100, although it currently remains at very high levels. The high average level of concentration in non-MSA counties is due to their generally small size. The lack of change in average local market banking concentration

22. See Hagel, Hewlin, and Hutchins (1997).
23. Reported in Long (2000). Long also noted that Deutsche Bank analysts calculated the value of this switching inertia in Britain at $540 per average customer.
24. The relevant market for analyzing competition in connection with the provision of financial services to large and midsize corporations is different from the market for retail customers. Because very large corporations have access to the capital markets and banking services from foreign banks, the relevant geographic market may be international in scope. For middle-size companies, banking markets may be statewide or regional in scope, but less than nationwide, for many of their banking services. For some evidence on middle-market lending, see Tannenwald (1994).

25. There is some empirical evidence that increased multimarket contacts among banks may weaken competition. See Pilloff (1999).
26. See Hanweck and Shull (1999).
27. See Pilloff and Rhoades (2000).
28. HHI is the Herfindahl–Hirschmann index. CR_3 is the three-firm deposit concentration ratio—that is, the percentage of deposits accounted for by the three largest banking organizations in the market.

is sufficiently unexpected in the face of so many mergers, many of which were horizontal (in-market) mergers, that further examination is appropriate.

One alternative approach to assessing the data is to look at average local market concentration by including deposits of thrift institutions at 50 percent, along with commercial bank deposits, in computing the CR_3 and HHI. The rationale for doing this is not that local market concentration calculated in this manner will more accurately reflect changes in local market bank concentration that may have been affected by the bank mergers described in this study. It will not. Instead, the intent is to calculate the concentration measure (HHI) in the same manner that it is calculated for making regulatory decisions on bank merger applications. Since the early to middle 1980s, the Federal Reserve includes 50 percent of thrift deposits in computing the HHI because thrift institutions typically offer the full range of bank products to households, including federally insured savings and checking accounts, but generally do not offer a full range of services to businesses. And because they have generally not competed for business customers since gaining the legal power to do so in the early 1980s, thrift institutions are not treated as full competitors with commercial banks.

Table 15, lines 21–24, shows that measures of average local market concentration based on bank deposits plus 50 percent of thrift deposits increased between 1984 and 1998. In MSAs, the increase in the average HHI has been substantial, rising from 1366 to 1666. The average HHI increase in non-MSA counties has been very small, rising from 3781 to 3816 between 1984 and 1998. Thus, although the measure of average MSA market concentration, the HHI (which is of particular interest to the Federal Reserve and other bank regulators as a factor in evaluating the competitive effects of merger applications) remains fairly low, market concentration has increased considerably since 1984. Because local markets continue to be the most relevant geographic area for evaluating competition in retail banking, the increase in average local market concentration, especially in MSAs, suggests that there is likely to be an increasing number of MSA markets in which bank merger proposals raise significant competition issues.

It is also useful to look behind the average concentration numbers. Tables 16–19 show the HHI increases and decreases for MSAs and non-MSA counties. Data are based on commercial bank deposits only and on commercial bank deposits plus 50 percent of thrift deposits.

16. Herfindahl–Hirschmann Index (HHI) Changes in Metropolitan Statistical Areas (MSAs), Insured Commercial Banks, 1984–98

Item	1984–98	1984–91	1991–98
MSAs with increase in HHI			
Number	145	158	134
Percent of all MSAs	50	50	45
Average HHI in 1984 (1991), number	1584	1690	(1696)
Average increase, number	555	353	486
Median increase, number	369	265	304
Average 1998 (1991) deposits of MSAs with increase, millions of dollars	10,662,897	(6,173,853)	11,353,253
MSAs with decrease in HHI			
Number	147	158	161
Percent of all MSAs	50	50	55
Average HHI in 1984 (1991), number	2334	2227	(2237)
Average decrease, number	–532	–312	–446
Median decrease, number	–414	–259	–346
Average 1998 (1991) deposits of MSAs with decrease, millions of dollars	5,514,626	(5,648,101)	5,206,553

NOTE. The HHI for each year is based on the MSA definition for that year except for the HHI for 1984, which is based on the 1985 definition.

Market Concentration: Average for MSAs and Non-MSA Counties with Increasing and Decreasing Concentration

Based on HHIs for commercial banks only, the changes in markets with HHI increases and decreases are fairly striking for both MSAs and non-MSA counties. For 1984–98, the HHI increased in one-half of all MSA markets, with an average increase of 555 points, starting from a level of 1584 (table 16, column 1).[29] The average HHI decreased in one-half of MSA markets by an average of 532 points, starting from a level of 2334. These data indicate that concentration increases in MSAs tended to occur in relatively unconcentrated markets, whereas decreases occurred in relatively highly concentrated markets. Thus, mergers likely played a role in the increasing concentration of the lower-concentration markets because antitrust policy tends to restrain mergers in markets with an HHI above 1800. The MSAs with HHI increases during 1984–98 were about twice as

29. This table, which is based on commercial banks only, focuses on the period beginning in 1984 in order to be comparable with table 17, which is based on commercial banks plus 50 percent of thrift deposits. Market-level thrift deposit data were not available until 1984.

17. Herfindahl–Hirschmann Index (HHI) Changes in Non-Metropolitan Statistical Area (Non-MSA) Counties, Insured Commercial Banks, 1984–98

Item	1984–98	1984–91	1991–98
Non-MSA counties with increase in HHI			
Number	809	964	788
Percent of all non-MSA counties	39	45	38
Average HHI in 1984 (1991), number	3276	3348	(3417)
Average increase, number	788	488	596
Median increase, number	442	245	271
Average 1998 (1991) deposits of non-MSA counties with increase, millions of dollars	254,885	(213,327)	250,406
Non-MSA counties with decrease in HHI			
Number	1289	1193	1308
Percent of all non-MSA counties	61	55	62
Average HHI in 1984 (1991), number	4440	4205	(4154)
Average decrease, number	–1008	–584	–713
Median decrease, number	–666	–315	–443
Average 1998 (1991) deposits of non-MSA counties with decrease, millions of dollars	242,885	(195,415)	246,586

large, in terms of bank deposits, as the MSAs with decreases (table 16, lines 6 and 12 of column 1), which highlights the potentially important economic impact of increases in local market concentration.

Data on HHI increases and decreases in non-MSA counties, based on bank deposits only, are shown in table 17. About 40 percent of non-MSA counties experienced an increase in the HHI over 1984–98 (column 1). The average increase was 788 points, starting from an initial average level of 3276. In the 61 percent of non-MSA counties with a decrease in the HHI, the average decrease was 1008 points, from an initial average level of 4440. Thus, as in the MSA markets, the increases in the average HHI in the non-MSA markets tended to occur in relatively unconcentrated markets, whereas decreases tended to occur in relatively highly concentrated markets. It is notable that even the relatively unconcentrated non-MSA markets tended to be highly concentrated compared with MSA markets.

We now examine HHI increases and decreases based on commercial bank plus 50 percent of thrift deposits. Findings are more or less similar to findings using HHIs based on only commercial bank deposits, that is, not including thrift deposits at 50 percent. Over 1984–98, 76 percent of MSAs experienced HHI increases, and the average increase was 478 points, starting from an average level of 1227 (table 18, column 1). Twenty-five percent of MSAs experienced HHI decreases over the whole period, and the average decrease was 370 points, beginning from a level of 1836. It is clear that HHI increases have been particularly significant in less concentrated markets regardless of whether HHIs are based on deposits of banks only or on those of banks and thrifts combined. The cause may be U.S. antitrust policy toward bank mergers, which is aimed at restraining increases in the HHI at higher levels, particularly beyond the 1800 level. Thus, mergers have likely played a role in the increasing concentration in these lower-concentration markets. Also, MSAs experiencing HHI increases during 1984–98

18. Herfindahl–Hirschmann Index (HHI) Changes in Metropolitan Statistical Areas (MSAs), Insured Commercial Banks and Thrifts at 50 Percent, 1984–98

Item	1984–98	1984–91	1991–98
MSAs with increase in HHI[1]			
Number	221	222	184
Percent of all MSAs	76	70	62
Average HHI in 1984 (1991), number	1227	1263	(1334)
Average increase, number	478	303	370
Median increase, number	377	234	280
Average 1998 (1991) deposits of MSAs with increase, millions of dollars	11,121,056	(7,443,441)[2]	12,098,874
MSAs with decrease in HHI[3]			
Number	71	94	111
Percent of all MSAs	24	30	38
Average HHI in 1984 (1991), number	1836	1591	(1863)
Average decrease, number	–370	–214	–312
Median decrease, number	–217	–128	–239
Average 1998 (1991) deposits of MSAs with decrease, millions of dollars	2,714,390	(6,702,983)	3,849,298

NOTE. The HHI for each year is based on the MSA definition for that year except for the HHI for 1984, which is based on the 1985 definition.

1. Each period or subperiod includes those MSAs that experienced an increase in the HHI for that particular time period.

2. The relatively small deposit size of the 222 MSAs with HHI increases between 1984 and 1991 reflects that 40 MSAs with increases in the HHI over the entire period, 1984–98, and the later subperiod, 1991–98, experienced HHI decreases during the 1984–91 subperiod, and these 40 MSAs included such large MSAs as Los Angeles, Chicago, and Atlanta. Because these MSAs had HHI decreases during the earlier period, 1984–91, they are reflected in the deposit figures for that time period.

3. Each period or subperiod includes those MSAs that experienced a decrease in the HHI for that particular time period.

19. Herfindahl–Hirschmann Index (HHI) Changes in Non-Metropolitan Statistical Area (Non-MSA) Counties, Insured Commercial Banks and Thrifts at 50 Percent, 1984–98

Item	1984–98	1984–91	1991–98
Non-MSA counties with increase in HHI[1]			
Number	1152	1234	1009
Percent of all non-MSA counties	54	56	48
Average HHI in 1984	2896	2972	(3074)
Average increase, number	693	514	460
Median increase, number	438	292	275
Average 1998 (1991) deposits of non-MSA counties with increase, millions of dollars	281,785	(236,804)	284,804
Non-MSA counties with decrease in HHI[2]			
Number	972	975	1104
Percent of all non-MSA counties	46	44	52
Average HHI in 1984 (1991), number	4095	3800	(3831)
Average decrease, number	–799	–503	–538
Median decrease, number	–480	–248	–305
Average 1998 (1991) deposits of non-MSA counties with decrease, millions of dollars	238,751	(210,198)	244,244

1. Each period or subperiod includes those non-MSA counties that experienced an increase in the HHI for that particular period.
2. Each period or subperiod includes those non-MSA counties that experienced a decrease in the HHI for that particular period.

were about four times as large as those experiencing decreases (table 18, lines 6 and 12 of column 1), so any economic impact would be even greater than the larger number of markets with HHI increases suggests.

The data on HHI increases and decreases in non-MSA counties show patterns similar to those for MSAs (table 19). More than half (54 percent) of non-MSA counties had increases in the HHI over the full period, and the average increase was nearly 700 points (column 1). The very large increase is rather striking because the average initial level of the HHI in 1984 was nearly 2900 points. For the 46 percent of non-MSA counties with decreases from 1984 to 1998, the average decrease was almost 800 points, beginning from a level of nearly 4100 points. It is not clear how the very large increases in HHIs in non-MSA counties could be attributable to mergers given the high initial level (2896) and that antitrust policy toward bank mergers should greatly inhibit mergers in such markets. However, it also not clear how such large increases in the HHI could occur, on average, in so many markets without mergers. This anomaly perhaps reflects the consideration that single non-MSA counties are not always the relevant geographic market used by the Federal Reserve for analyzing competition in rural areas, although they often are.

Market Concentration: Determinants of Change

From looking at tables 16–19, one can see that a great deal is clearly going on with local market concentration in banking that is concealed by the averages. To help identify possible determinants of changes in local market concentration in banking, a simple least squares regression analysis was conducted. This initial statistical exploration was not intended to be comprehensive or conclusive. Rather, it was intended to provide some insight on sources of change in market structure and identify areas for further research. The equations tested are shown in table 20, and the variables are defined in the footnotes. The tests were conducted for three time periods: the overall period, 1984–98, and two subperiods, 1984–91 and 1991–98.

The test results are generally consistent across time periods. The key variables, in the context of this study, for explaining changes in local market HHI (the dependent variable) are two alternative measures of horizontal merger activity in local markets. They are (1) the number of mergers relative to the number of organizations in the market and (2) the deposits acquired relative to total market deposits. The "number of mergers" variable is positive and statistically significant at the 0.99 or 0.95 level in all three equations in which it appears. The "deposits acquired" variable is positive and statistically significant at the 0.99 level in all three equations in which it appears. These results indicate that bank mergers are associated with greater increases in local market HHIs.

Another variable of special interest, because it is expected to affect market concentration, is the percentage change in the number of organizations in a market, which is an indicator of net new entry. That variable yields the strongest result of all, being negative and statistically significant at the 0.99 level in all three equations in which it appears.[30] This result indicates that, as the percentage change in the number of bank competitors in a market increases, the HHI tends to decrease more (or increase less) than in markets with smaller increases (or decreases)

30. The strength of this result may reflect to a greater or lesser degree an algebraic relationship between the HHI and the number of firms.

20. Some Determinants of Changes in the Herfindahl–Hirschmann Index (HHI) in Local Banking Markets, 1984–98

Time period[1]	Coefficients of independent variables (*t*-values in parentheses)							Constant	$\bar{R}^2$
	Number of mergers (NM)	Deposits acquired (DA)	Percent change in number of organizations (ΔNO)	HHI with 50 percent thrifts (HHI)	Percent change in thrift deposits (ΔTD)	Market size (MS)	Market growth (MG)		
1984–98 ……	.1710[3]			–.0535[2]	–.0310	.0242[2]	.0692[2]	1.2302	.11
	(2.415)			(12.981)	(.671)	(3.834)	(8.401)		
1984–98 ……		.0368[2]		–.0533[2]	–.0301	.0216[2]	.0682[2]	1.2341	.11
		(3.560)		(13.188)	(.653)	(3.376)	(8.277)		
1984–98 ……			–.6938[2]	–.0280[2]	.0496	.0218[2]	.1216[2]	1.1068	.27
			(23.913)	(7.467)	(1.185)	(3.838)	(15.774)		
1984–91 ……	.5944[2]			–.0211[2]	–.0494[3]	.0152[2]	–.0027	1.1188	.05
	(6.074)			(6.386)	(2.098)	(2.891)	(.219)		
1984–91 ……		.0520[3]		–.0248[2]	–.0408[4]	.0162[2]	–.0089	1.1510	.04
		(2.437)		(7.578)	(1.729)	(3.034)	(.715)		
1984–91…….			–.6886[2]	–.0157[2]	.0061	.0190[2]	.1378[2]	1.0520	.16
			(19.427)	(5.160)	(.274)	(3.855)	(9.984)		
1991–98 ……	.2421[2]			–.0291[2]	–.0541[3]	.0093[3]	.0859[2]	1.1092	.09
	(4.159)			(11.209)	(2.189)	(2.185)	(8.563)		
1991–98 ……		.0792[2]		–.0281[2]	–.0529[3]	.0032	.0855[2]	1.1079	.10
		(6.551)		(10.941)	(2.152)	(.719)	(8.575)		
1991–98 ……			–.5659[2]	–.0166[2]	.0237	.0067[4]	.1243[2]	1.0798	.27
			(25.606)	(7.144)	(1.063)	(1.774)	(13.668)		

NOTE. *Dependent Variable* = Percentage change in the deposit HHI over the time period, including 50 percent of thrift deposits.

Independent Variables:

NM = Number of horizontal mergers in market over the time period ÷ number of organizations in initial year.
DA = Deposits acquired in market over the time period ÷ total market deposits in initial year.
ΔNO = Percentage change in number of organizations over the time period.
HHI = Herfindahl–Hirschman index based on initial year bank deposits and 50 percent of thrift deposits (scaled by a multiple of 1,000).
ΔTD = Percentage change in total thrift deposits in the market over the time period (scaled by a multiple of 10,000).
MS = Market size based on total bank deposits and 50 percent of thrift deposits in the initial year (scaled by a multiple of 1,000,000).
MG = Market bank-deposit growth over the time period.

1. The number of observations for 1984–98, 1984–91, and 1991–98 are 2,499, 2,630, and 2,529, respectively.
2. Indicates the coefficient is statistically significant at the 0.99 level (two-tailed test).
3. Indicates the coefficient is statistically significant at the 0.95 level (two-tailed test).
4. Indicates the coefficient is statistically significant at the 0.90 level (two-tailed test).

in the number of competitors. The remaining variables are included essentially as control variables and generally performed consistently over the time periods.[31]

31. The percentage change in thrift deposits was included to control for the possibility that the large-scale disappearance of thrift institutions through failures and acquisitions by banking organizations, both of which would move thrift deposits into banks, may have influenced the measured change in the HHI. Steve Pilloff (personal communication) suggested including this variable.

Profit and Stock Performance

Finally, as shown in the last panel of table 15, bank stocks and profit rates have risen to exceptionally high levels since the early 1990s. These increases almost certainly reflect, to a large degree, the extraordinary performance of the U.S. economy and have probably been contributing factors to the bank merger movement. Should bank profit rates and stocks fall off in the future, some of the impetus for bank mergers would be removed. However, with the fundamental stimulus for bank mergers in place—that is, the removal of restrictions on interstate banking—any falloff in merger activity would likely be reversed with subsequent improvements in bank stocks and profitability. Interestingly, the number of bank mergers reached peak levels during the mid-1980s, at which time industry profit rates and stock prices were quite low. This finding is somewhat surprising because high bank stock prices and profits are widely believed to be conducive to merger activity. This belief may generally be true, but during the mid to late 1980s, many banks were performing very badly (more than 200 banks failed annually from 1987 to 1989) because of problem loans in petroleum, agriculture, and commercial real estate and loans to less-developed countries. This situation may have created some good buying opportunities for banks that were performing relatively well.

4. Summary and Conclusions

The U.S. banking industry has experienced an unprecedented, persistent merger movement since 1980, with nearly 8,000 mergers and about $2.4 trillion in acquired assets. The industry is essentially being restructured in response to the removal of legal restrictions on intrastate and interstate banking throughout the period and culminating with passage of the Riegle–Neal Act in 1994. Although there were more bank mergers during the 1980s, the 1990s, particularly 1995–98, were characterized by an increasing number of very large mergers, including some that surpassed in size any previous mergers. This merger movement seems destined to continue because of the many opportunities for mergers created by liberalized branching laws, though it may be temporarily interrupted by weak economic conditions or low bank stock prices.

Interestingly, although the Riegle–Neal Act and similar legislation by the states played a major role in the bank merger movement and restructuring of the industry, the Gramm–Leach–Bliley Act of 1999 seems unlikely to have much effect on bank mergers or banking structure. Gramm–Leach–Bliley has provided the basis for cross-industry mergers between commercial banks and securities and insurance underwriters. However, such combinations are likely to be considered by only a small number of very large banking organizations, and the lack of apparent efficiency opportunities, especially between banks and insurance underwriters, seems likely to further limit cross-industry mergers. Furthermore, the generally poor results of financial supermarkets formed in the 1980s and the conglomerate mergers in the industrial sector during the 1960s seem not to portend well for financial conglomerate mergers in the early twenty-first century.

Because mergers can affect market structure and because market structure influences bank competition and performance, this study examined changes in U.S. banking structure during 1980–98. Some of the noteworthy findings are the following:

- The number of banks in the United States decreased from 14,407 to 8,697, and the number of banking organizations decreased from 12,342 to 6,839.
- The number of banking offices continued to grow through the 1990s despite the burgeoning of ATMs and ATM transactions.
- Concentration of control over aggregate U.S. bank deposits among the largest banks increased substantially, with the share of the 100 largest rising from about 47 percent to 71 percent and the share of the 10 largest rising from around 19 percent to 37 percent; the latter rise occurred mostly after 1990.
- Concentration increased substantially in many local banking markets, especially in large metropolitan areas.
- The number of bank mergers reached the highest level for the period in the mid-1980s, when industry profit rates and stock prices were very low.

The increasing number of banking offices in the face of a large decrease in the number of banks suggests that local markets continue to be relevant geographic markets, a suggestion that is consistent with survey findings for households and small businesses. Data showing continuing increases in the number of ATMs and banking offices indicate that ATMs are not substitutes for brick and mortar. Instead, ATMs and other forms of retail electronic banking today appear to complement local banking offices by providing convenient ways to obtain cash or conduct traditional bank transactions. They have not, as of this time, generally altered the local-market nature of retail banking or the basic bank–customer relationship.

In view of the still limited effect of retail electronic banking and of the failure for the predicted demise of checks and currency to materialize in the thirty-four years since the prediction, it appears prudent to continue basing antitrust policy concerning bank mergers on clear empirical evidence rather than on prognostication about what electronic banking may be like some day. Eventually electronic banking may fundamentally erode local banking markets and even greatly reduce switching costs for customers. Today, however, evidence generally does not support such a conclusion. Moreover, some evidence indicates that retail electronic banking has increased switching costs in an industry where such costs were probably already significant because of the nature of the product and the buyer–seller relationship. If, indeed, switching costs are increasing, maintaining competitive retail banking markets is particularly important because switching costs tend to inhibit actual and potential competition. This statement holds true regardless of the appropriate scope of the geographic market.

Clearly the antitrust laws have not inhibited a massive consolidation of the banking industry after the deregulation of restrictions on geographic expansion. However, with indications that local market concentration has been increasing, especially in large metropolitan areas, the antitrust laws seem likely to become a constraint on more mergers than in the past. Divestitures may become a public policy remedy that will be used with increasing frequency to counter otherwise anticompetitive bank mergers.

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