Multibank Holding Companies and Local Market Concentration

by David D. Whitehead and B. Frank King

There is currently much concern that enactment of multibank holding company legislation will undermine independent banks and stifle competition in the banking industry. This concern centers on the belief that multibank holding company expansion increases concentration of banking resources and, at the same time, erodes bank competition. This issue is of particular interest in the Sixth Federal Reserve District this year. Three states in the District have recently considered or will probably soon consider bills affecting multibank holding company expansion.

Whether multibank holding company expansion is in the public interest is a complex issue. This article focuses on only one aspect, the impact of multibank holding companies on concentration of banking resources in local banking markets. Economic theory implies that, at least in the short run, higher market concentration results in higher prices and lower output, causing a misallocation of resources. Empirical research on concentration and performance in banking markets has found that the relationship between higher concentration and higher prices is statistically significant but is fairly small.[1]

This study is a two-part exploration of the influence of holding company entry on local market concentration. We first review evidence from previously published studies. We then develop new evidence from the experience of three Sixth District states—Alabama, Florida, and Tennessee. These states have allowed multibank holding companies for some time and, therefore, offer fertile ground for studying the effects these organizations have had on local market concentration.

Issues

It is often argued that banks acquired by multibank holding companies gain competitive advantages over independent banks. Even opponents

[1]Early studies are summarized in Neil B. Murphy and Steven J. Weiss, "The Effect of Concentration on Performance: Evaluating Statistical Studies," **The Magazine of Bank Administration,** Vol. 45 (November 1969), pp. 34-37; studies since that time include A. A. Heggested and J. J. Mingo, **Prices, Nonprices, and Concentration in Selected Banking Markets** (Washington, D. C.; Research Papers in Banking and Financial Economics, Board of Governors of the Federal Reserve System, 1974), Donald P. Jacobs, **Business Loan Costs and Bank Market Structure** (New York, Occasional Paper 115, National Bureau of Economic Research, 1971), Donald R. Fraser and Peter S. Rose, "More on Banking Structure: The Evidence from Texas," **Journal of Financial and Quantitative Analysis,** Vol. 6 (January 1971), pp. 601-611, Robert F. Ware, "Banking Structure and Performance: Some Evidence from Ohio," **Economic Review,** Federal Reserve Bank of Cleveland (March 1972), pp. 3-13.

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of holding company banking assert that a banking subsidiary of a multibank holding company may enjoy increased operating efficiencies, financial strength, the ability to offer a wider range of services, and improved management and management succession. These may help the subsidiary bank gain in deposits and market share at the expense of independent banks. This, it is often argued, would increase the concentration of deposits in markets that multibank holding companies enter. Conversely, it has also been argued that independent banks may be able to avoid losses to multibank company subsidiaries through a superior understanding of local markets and economic conditions, personalized service, and specialization in certain product lines.[2] Indeed, independent banks' response to multibank companies may intensify competitiveness.

In addition to giving their subsidiaries competitive advantages, multibank holding companies may influence market concentration in other ways. The type of holding company entry itself may have an important influence. Concentration would increase if a multibank company acquired more than one bank in the same market, though enforcement of Federal holding company and antitrust laws discourages such acquisitions. The relative size of an acquired bank could have a bearing on concentration changes. If multibank company subsidiaries have competitive advantages over independent banks, then acquisition of new or small banks would be expected to reduce local market concentration for a time as the acquired bank took business away from larger independent competitors; acquisition of larger banks, on the other hand, would be expected to increase concentration. If independent banks increase their competitive edge, the opposite would be expected. Thus, the ultimate effect of multibank company acquisition depends on whether (and by how much) banks gain or lose competitive advantages when acquired by multibank companies and on the number and relative size of the banks acquired.

Concentration changes in local markets may have nothing to do with multibank holding companies. Concentration may increase when two independent banks merge or when an independent bank makes changes in its operations that increase its deposits at a greater rate than those of other banks in the market. Concentration may decline if new independent banks enter a market, if deposits at existing smaller banks grow more than the market average, or if existing banks compete for deposits on a more equal footing.

All of these possible influences make it difficult to predict **a priori** whether or not multibank company expansion will raise local market concentration. To see if, in practice, concentration rises when multibank companies expand, one must review the experience of communities where holding companies have acquired banks. Several studies have focused on this question.

Studies of Multibank Company Entry

Previous studies give little evidence that multibank companies systematically increase local market concentration. We divide these studies into three groups. The first compares the performance of multibank holding company subsidiaries with the performance of similarly-sized independent banks in the same local areas. A second group looks at changes in the share of market deposits held by banks acquired by multibank holding companies. The third measures concentration changes in markets multibank holding companies entered.

The first group hypothesizes that holding company subsidiaries obtain competitive advantages through affiliation with a larger financial organization. If they do, banks acquired by multibank holding companies would be expected to lower their prices, show increasing rates of return and faster growth, and expand their market shares relative to independent banks in the same market. Generally, these studies have found that asset portfolios of acquired banks change relative to those of independent banks. These studies have not, however, generally found differences in prices, earnings, or profitability between holding company banks and independent banks.[3]

Three studies in this group give additional evidence on changes in growth rates and market shares. Lawrence's study of a national sample of holding company banks found no significant difference in deposit growth rates of holding company subsidiaries and independent banks. Hoffman's study of banks acquired by two large Florida companies shows no statistically significant difference

[2]For a more detailed discussion of these questions, see Jerome C. Darnell and Howard Keen, Jr., "Small Bank Survival: Is the Wolf at the Door," **Business Review,** Federal Reserve Bank of Philadelphia (November 1974), pp. 17-18, and William Jackson, **Multibank Holding Companies and Bank Behavior** (Richmond, Virginia: Working Paper 75-1, Federal Reserve Bank of Richmond, 1975), pp. 3-5.

[3]Studies using national samples include Robert J. Lawrence, **The Performance of Bank Holding Companies** (Washington, D. C.: Board of Governors of the Federal Reserve System, 1967), and Samuel H. Talley, **The Effect of Holding Company Acquisition on Bank Performance** (Washington, D. C.: Staff Economic Study, No. 69, Board of Governors of the Federal Reserve System, 1971). Regional samples are studied in Joe W. McLeary, "Bank Holding Companies: Their Growth and Performance," this **Review,** October 1968, pp. 131-138, Robert F. Ware, "Performance of Banks Acquired by Multibank Holding Companies in Ohio," **Economic Review,** Federal Reserve Bank of Cleveland (March/April 1973), pp. 19-28, and Stuart Hoffman, "A Florida Case Study: Performance of Holding Company Banks," this **Review,** December 1975, pp. 202-205.

Table 1

Subsidiaries of Multibank Holding Companies in Alabama, Florida, and Tennessee

	Alabama	Florida	Tennessee
Number of bank subsidiaries acquired by multibank holding companies between June 1970 and December 1974	54	306	53*
Number of bank subsidiaries in existence in December 1974	54	430	59
Percent of bank subsidiaries in December 1974 acquired between June 1970 and December 1974	100	71	90

*Two were sold in late 1974.

between the change in market shares of acquired banks and similarly-sized independent banks in their markets.[4] Another recent study of smaller independent banks competing with banks merged into larger banks in Pennsylvania found no significant changes in balance sheet ratios, operating ratios, or deposit growth of independent banks after mergers involving their competitors.[5] The mergers studied are the initial entries of large banks into the towns of the independent banks. In this respect, they are similar to holding company acquisitions.

The second group of studies concludes that multibank holding companies had little to do with changes in market shares of banks they acquired in the late 1960's.[6] One study finds this to be so for acquired banks of all sizes and market shares;[7] however, the other finds some tendency for relatively large banks acquired by large, aggressive holding companies to increase their market share after acquisition.[8]

Studies of changes in local market concentration in four states with substantial holding company development fail to support the hypothesis that holding company acquisitions necessarily increase local market concentration. Schull studied concentration changes in metropolitan areas in New York between 1960 and 1971 and in Virginia between 1962 and 1971; concentration had increased in two of six areas in New York and in two of five areas in Virginia. Schull found no systematic relationship between holding company entry and changes in local market concentration.[9] In an as yet unpublished study of holding company acquisitions in Alabama, Martell and Hooks found evidence that concentration in markets entered by multibank holding companies tended to decline relative to other markets.[10] Ware studied concentration changes in Ohio areas where multibank holding companies had acquired subsidiaries between 1969 and 1974. He found that concentration, measured by the Herfindahl Index, declined in a majority of SMSA's and in one half of non-SMSA counties.[11]

These three groups of studies cast considerable doubt on the contention that multibank holding company acquisitions lead to increased local market concentration. The first group indicates that banks acquired by holding companies do not gain (or at least fail to use) sufficient competitive advantages to enable them to change significantly their profit rates, rates of return, or growth rates relative to

[4]Lawrence, pp. 20-21, and Hoffman, p. 205.

[5]Jerome C. Darnell and Howard Keen, Jr., pp. 20-22.

[6]R. Alton Gilbert and Nancy Jianakoplus, "The Impact of Holding Company Affiliation on the Market Share of Banks," Federal Reserve Bank of St. Louis, Mimeographed, 1973, and Lawrence G. Goldberg, "Bank Holding Company Acquisitions and Their Impact on Market Shares," Board of Governors of the Federal Reserve System, Mimeographed, 1974.

[7]Goldberg, p. 17-18.

[8]Gilbert, p. 21.

[9]Bernard Schull, "Multiple-Office Banking and the Structure of Banking Markets: The New York and Virginia Experience," **Proceedings of a Conference on Bank Structure and Competition,** October 26-27, 1972, Federal Reserve Bank of Chicago, pp. 36, 40.

[10]Terrence F. Martell and Donald L. Hooks, "The Impact of the Multi-Bank Holding Company Organizational Form on Local Market Competition," Mimeographed, 1974. Some results of this study are summarized in "Holding Company Affiliation and Economies of Scale," **Journal of the Midwest Finance Association,** 1975, pp. 57, 69, by the same authors.

[11]Robert F. Ware, "Banking Concentration in Ohio," **Economic Commentary,** November 24, 1975, Federal Reserve Bank of Cleveland.

Table 2

Proportions of Markets Recording Increased Concentration, June 1970-December 1974

	All Markets	Markets Entered June 1970-December 1974
Number of Markets	98	61
Proportion with increases in three-bank concentration	.10	.13
Proportion with increases in Herfindahl Index	.09	.13
Markets with deposits of more than $300 million	25	13
Proportion with increases in three-bank concentration	.00	.00
Proportion with increases in Herfindahl Index	.04	.08
Markets with deposits of $100-300 million	34	23
Proportion with increases in three-bank concentration	.12	.13
Proportion with increases in Herfindahl Index	.00	.00
Markets with deposits of less than $100 million	39	25
Proportion with increases in three-bank concentration	.15	.20
Proportion with increases in Herfindahl Index	.21	.28

competing independent banks. The second group finds little effect of holding company acquisitions on the market shares of acquired banks, and the third finds no systematic evidence of increasing local market concentration in holding company states.

The results of these studies are consistent; however, the direct evidence presented is limited, drawn from only a few of the states which allow multibank holding company activity. For this reason, we have developed additional evidence from the three Southeastern states which allow this type of banking organization.

Evidence from Alabama, Florida, and Tennessee

During the 1970's, bank holding companies have expanded rapidly in Alabama, Florida, and Tennessee. Between June 30, 1970, and December 31, 1974, multibank companies in Alabama acquired 54 bank subsidiaries; in Florida, they acquired 306; and in Tennessee, they acquired 53.[12]

To determine whether multibank holding company entry in these three states resulted in higher local market concentration, we studied all markets with three banking organizations and at least one multibank company subsidiary on December 31, 1974. We first computed measures of deposit concentration for June 30, 1970, and December 31, 1974.[13] We then used changes in these measures—the combined shares of the three largest banks (three-bank concentration) and the Herfindahl Index of concentration—as the basis for analyzing the effects of multibank holding company acquisitions

[12] Two of the Tennessee acquisitions were sold in late 1974.

[13] June 30, 1970, data were used because branch data are available for direct adjustment for multimarket branch banks in Alabama and Tennessee. Data for December 31, 1974, were available from another study and were indirectly adjusted.

on concentration in local markets.[14]

The market areas we chose for this study had been designated banking markets by the Board of Governors of the Federal Reserve System. The Board defines banking markets in its analysis of the competitive effects of bank acquisitions by multibank holding companies. The most recently cited market definitions were used. These definitions differ from those used by Schull and Ware, who based market areas exclusively on county or SMSA boundaries. Market definitions used by the Board of Governors incorporate some study of economic patterns and customer-bank relationships prior to the banking market designation.[15] The Board's designations are approximate, but they are not so arbitrary as those based exclusively on county and SMSA boundaries.

In all, there were 98 markets in the study—25 in Alabama, 46 in Florida, and 27 in Tennessee. The markets varied greatly in size; the smallest had $20 million in deposits on December 31, 1974, and the largest had upwards of $6 billion (see Appendix I). In discussing these markets, changes in the Herfindahl Index will be emphasized, since it is a superior measure of concentration.

Only a small proportion of these markets showed increased concentration (see Appendix I). Of the 98 markets, 9 had higher Herfindahl Indices and 10 had higher three-bank concentration ratios. Thus, only about 10 percent of the markets recorded increased concentration. Smaller markets tended to have increased concentration more often than large ones. Twenty-one percent, or eight of the 39 markets with deposits of less than $100 million, had increased concentration. Only one of the 59 markets with deposits of more than $100 million had a higher Herfindahl Index.

If holding company subsidiaries have competitive advantages over independent banks, those advantages should be most obvious shortly after acquisition. Thus, some tendencies toward increased concentration might be masked by using markets entered before mid-1970. We, therefore, took the additional step of separating markets entered before June 1970 from those entered between June 1970 and December 1974. Sixteen of the 46 markets in Florida, 20 of the 27 markets in Tennessee, and all of the 25 markets in Alabama were entered after June 1970.

The 61 markets entered after June 30, 1970, account for all but one of the increases in concentration recorded in this study (see Appendix I). However, even in markets entered after mid-1970, the proportion with higher concentration is quite small—13 percent as compared with 10 percent in markets entered before and after that date. Concentration declined in most markets in this group, just as it did in most markets studied.

These results are consistent with those Schull and Ware found in their studies of New York, Virginia, and Ohio. Concentration declined in a majority of areas in each study. As in Ware's Ohio study, we found a smaller proportion of large markets showing concentration increases than smaller markets. Our results differ from those found in New York, Virginia, and Ohio in that we found increased concentration in a far lower proportion of markets in each state and market-size class than did previous studies.

Markets Where Concentration Increased

Analyzing in greater detail those nine markets with increased concentration produces no evidence that holding company entry is systematically related to rising concentration. Four of these markets are in Tennessee, four are in Alabama, and one is in Florida. All subsidiaries of multibank holding companies had reduced market shares in four of the nine markets. In two of the remaining five, mergers between independent banks were directly responsible for the market's increased concentration; the subsidiaries of holding companies in each of these markets either maintained their rather small market shares or increased them slightly.

In only three markets did subsidiaries of holding companies manage to increase market shares between June 1970 and December 1974. Two were in Tennessee and one was in Florida. In one of the two Tennessee markets, the holding company subsidiary was small and increased its share by less than one percentage point, while the largest independent bank substantially increased its share. The one holding company subsidiary in the other Tennessee market was the market's largest bank. It managed to increase its share from 47 percent of deposits in June 1970 to 51 percent in December 1974. This particular bank has been a subsidiary since its holding company registered in 1956. Its 51-percent market share in 1974 was on a par with its market share in 1956. Therefore, its increased share of the market from mid-1970 through 1974 seems no more due to its holding company affiliation than was its loss in market share between 1956 and mid-1970.

The one Florida market with increased concentration has three banks, each a subsidiary of a different multibank holding company. Therefore, it would be very difficult to suggest that holding company affiliation was responsible for the market's overall increase in concentration. The higher concentration in this market came, in fact, from a substantial increase in state and local government deposits in one of the market's two largest banks. This raised the bank's relative share of market

[14]See Appendix II for a discussion of concentration measures.

[15]See Charles D. Salley, "Uniform Price and Banking Market Delineation," this **Review**, June 1975, pp. 86-93.

deposits from 38 percent to 51 percent and also raised deposit concentration.

Conclusion and Implications

Like the evidence presented in previous studies, the experience in Alabama, Florida, and Tennessee from June 1970 to December 1974 provides no support for the proposition that multibank holding companies systematically cause increased bank deposit concentration when they enter local markets. In the three states studied, concentration increased in only 10 percent of all 98 local markets with holding company subsidiaries. Of the 61 markets entered between June 1970 and December 1974, only 13 percent recorded increased concentration. An analysis of the nine markets where concentration rose failed to discover any direct relationship with holding company entry.

This study's conclusion is based on changes in concentration during a four-and-one-half-year period and may not reveal all long-run effects. However, one would expect the major competitive advantages of holding company membership discussed above to show up rather soon so that there would be little difference between short- and long-run effects.

Although strongly contradicting the contention that multibank holding company entry increases local market concentration, this evidence sheds no light on two other related issues: the influence of multibank companies on statewide concentration and the relationship of multibank company entry to concentration decreases. These results relate strictly to local banking markets; they should not be applied to statewide concentration. Two studies by economists on the staff of the Board of Governors of the Federal Reserve System have found that statewide concentration increases more (or decreases less) in unit and limited branching states allowing multibank holding companies than in all other states.[16] However, the implications of changes in statewide concentration for the public interest are difficult to assess. State boundaries do not usually conform to the market boundaries for any bank service; thus the theory and evidence linking market concentration and performance do not necessarily apply.

Finally, from the conclusion that multibank holding company entry is not systematically related to local market concentration increases, does it follow that such entry causes reduced concentration? The evidence developed here does not necessarily support or contradict this hypothesis. Concentration may decline, as already noted, because of the type or number of holding company acquisitions, the actions of independent banks, and competitive interactions between holding company subsidiaries and independent banks. Further analysis of local market shares will be necessary in order to expand our conclusion (that holding company entry is not related to concentration increases) into a comprehensive set of evidence concerning the influences of such entry.

[16] Lawrence G. Goldberg and Samuel H. Talley, "Statewide Concentration in Banking," Mimeographed, March 11, 1974, and Samuel H. Talley, **The Impact of Holding Company Acquisitions on Aggregate Concentration in Banking** (Washington, D. C.: Staff Economic Studies, No. 80, Board of Governors of the Federal Reserve System, 1974).

APPENDIX I

Exhibit 1

Changes in Concentration in Markets with Multibank Holding Company Subsidiaries, June 1970-December 1974

Banking Market	December 1974 Deposits ($ millions)	First Entered after June 1970	Three-Bank Concentration 1970	Three-Bank Concentration 1974	Three-Bank Concentration Change	Herfindahl 1970	Herfindahl 1974	Herfindahl Change
Alabama								
Jefferson County	$2,272	X	.84	.81	− .03	.30	.28	− .02
Mobile Area	914	X	.86	.83	− .03	.30	.28	− .02
Montgomery SMSA	739	X	.79	.74	− .05	.27	.24	− .03
Columbus SMSA	448	X	.79	.79	.00	.23	.24	.01
Madison County	344	X	.79	.70	− .09	.26	.22	− .04
Anniston Area	254	X	.66	.60	− .06	.18	.15	− .03
Florence Area	217	X	.74	.72	− .02	.26	.25	− .01
Tuscaloosa County	213	X	1.00	.98	− .02	.47	.46	− .01
Etowah County	202	X	.60	.53	− .07	.16	.13	− .03

APPENDIX I

Exhibit 1 (cont'd)

Changes in Concentration in Markets with Multibank Holding Company Subsidiaries, June 1970-December 1974

Banking Market	December 1974 Deposits ($ millions)	First Entered after June 1970	Three-Bank Concentration 1970	Three-Bank Concentration 1974	Three-Bank Concentration Change	Herfindahl 1970	Herfindahl 1974	Herfindahl Change
Alabama (cont'd)								
Dothan Area	194	X	.84	.86	.02	.31	.30	− .01
Morgan County	193	X	.83	.83	.00	.30	.28	− .02
Marshall County	148	X	.51	.47	− .04	.13	.13	.00
Dallas County	139	X	.87	.85	− .02	.27	.27	.00
Opelika-Auburn Area	123	X	.61	.63	.02	.19	.19	.00
Covington County	110	X	.77	.78	.01	.23	.23	.00
Walker County	94	X	.77	.82	.05	.33	.36	.03
DeKalb County	78	X	.72	.65	− .07	.22	.18	− .04
Barbour County	72	X	.63	.68	.05	.17	.19	.02
Limestone County	53	X	1.00*	1.00	.00	.50	.44	− .06
Marion County	49	X	.79	.80	.01	.28	.29	.01
Randolph County	38	X	.80	.80	.00	.26	.25	− .01
Uniontown Area	35	X	.88	.78	− .10	.32	.26	− .06
Lamar County	34	X	1.00	.87	− .13	.35	.28	− .07
East Lauderdale County	31	X	1.00	1.00	.00	.37	.37	.00
Macon County	26	X	1.00	1.00	.00	.45	.45	.00
Florida								
Miami Area	6,185		.32	.31	− .01	.06	.06	.00
Jacksonville Area	1,882		.60	.50	− .10	.13	.10	− .03
Tampa Area	1,750		.58	.52	− .05	.13	.11	− .02
North Broward Area	1,615		.39	.26	− .12	.08	.05	− .03
Orlando Area	1,383		.51	.41	− .10	.13	.09	− .04
South Pinellas Area	1,267		.48	.38	− .10	.10	.07	− .03
West Palm Beach Area	1,258		.33	.26	− .07	.07	.05	− .02
North Pinellas Area	820		.43	.35	− .08	.09	.07	− .02
Sarasota Area	597	X	.66	.59	− .07	.18	.15	− .03
Lee County	563	X	.76	.61	− .15	.23	.16	− .07
West Polk County Area	421		.67	.63	− .04	.23	.21	− .02
Pensacola SMSA	410		.47	.41	− .06	.11	.09	− .02
Bradenton Area	389	X	.75	.67	− .08	.21	.17	− .04
East Volusia County Area	321	X	.61	.52	− .09	.17	.12	− .05
Leon County	309	X	.82	.67	− .15	.23	.16	− .07
East Polk County Area	308		.58	.54	− .04	.16	.14	− .02
Boca Raton Area	271	X	1.00	.94	− .06	.41	.36	− .05
Naples Area	230	X	.99	.75	− .24	.40	.23	− .17
North Lake County Area	229		.52	.51	− .01	.15	.14	− .01
Alachua County	225		.75	.62	− .13	.22	.17	− .05
Marion County	204		.78	.68	− .10	.22	.18	− .04
New Port Richey Area	196	X	1.00	.76	− .23	.65	.24	− .41
Bay County	180	X	.91	.84	− .07	.41	.29	− .13
East Martin County Area	174	X	.96	.88	− .08	.41	.31	− .10
Central Brevard County Area	173		.70	.68	− .02	.22	.19	− .03
West Volusia County Area	165		.81	.82	.01	.27	.26	− .01
Sebring Area	164	X	.62	.62	.00	.18	.18	.00
South Brevard County Area	162		.65	.58	− .07	.19	.17	− .02

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Exhibit 1 (cont'd)

Changes in Concentration in Markets with Multibank Holding Company Subsidiaries, June 1970-December 1974

Banking Market	December 1974 Deposits ($ millions)	First Entered after June 1970	Three-Bank Concentration 1970	Three-Bank Concentration 1974	Three-Bank Concentration Change	Herfindahl 1970	Herfindahl 1974	Herfindahl Change
Florida (cont'd)								
Okaloosa County	151	X	.70	.54	− .16	.20	.14	− .06
Venice Area	125	X	1.00	1.00	.00	.48	.40	− .08
Indian River County	124		1.00	.81	− .19	.45	.28	− .17
St. Lucie County	119		1.00	.87	− .13	.42	.33	− .09
Port Charlotte Area	117	X	1.00*	.91	− .09	.50	.34	− .16
East Pasco County Area	109		1.00	.91	− .09	.37	.31	− .06
North Seminole County Area	93		.89	.88	− .01	.31	.29	− .02
North Brevard County Area	81	X	1.00	1.00	.00	.36	.39	.03
Putnam County	70		.86	.88	.02	.34	.33	− .01
St. Johns County Area	69		1.00	1.00	.00	.48	.42	− .06
East Hernando County Area	66		1.00*	1.00	.00	.56	.40	− .16
Key West	61		1.00*	1.00	.00	.50	.36	− .14
North Osceola County Area	58		1.00	.96	− .04	.37	.33	− .04
Belle Glade Area	45		1.00	1.00	.00	.36	.34	− .02
Chipley Area	38		1.00	.92	− .08	.35	.30	− .05
Nassau County	28		1.00**	1.00	.00	1.00	.50	− .50
Madison County	27		1.00*	1.00	.00	.50	.37	− .13
Moore Haven Area	20	X	1.00**	1.00	.00	1.00	.63	− .37
Tennessee								
Nashville Area	3,083	X	.81	.77	− .03	.25	.21	− .04
Memphis Area	2,690	X	.90	.81	− .09	.31	.26	− .05
Knoxville SMSA	1,120	X	.65	.58	− .07	.18	.15	− .03
Chattanooga SMSA	1,070		.95	.87	− .08	.36	.32	− .04
Johnson City Area	231		.77	.76	− .01	.24	.23	− .01
Obion County Area	191	X	.49	.47	− .02	.12	.11	− .01
Montgomery County	132	X	1.00	1.00	.00	.34	.34	.00
Gibson County	130	X	.48	.47	− .01	.11	.11	.00
Bradley County	121	X	1.00	.94	− .06	.34	.30	− .04
Hamblen County	100		1.00	.97	− .03	.36	.35	− .01
Lawrence County	99	X	.89	.73	− .16	.32	.20	− .12
Green County	99	X	.89	.73	− .16	.32	.20	− .12
Warren County	94	X	1.00	.94	− .00	.43	.41	− .11
Sevier County	79	X	.93	.81	− .12	.31	.24	− .07
Giles County	78	X	.96	.96	.00	.38	.36	− .02
Roane County	77		1.00	1.00	.00	.36	.39	.03
Coffee County	74	X	.82	.79	− .03	.27	.24	− .03
Loudon County	64		.89	.89	.00	.30	.29	− .01
Henry County	62	X	.98	.98	.00	.45	.46	.01
Polk County	57	X	.91	.86	− .05	.30	.27	− .03
Franklin County	54	X	.73	.83	.10	.23	.29	.06
Hardeman County	46	X	.81	.80	− .01	.30	.27	− .03
Jefferson County	41	X	1.00	1.00	.00	.38	.35	− .03
Rhea County	39		1.00	1.00	.00	.45	.42	− .03
Marion County	36		1.00	1.00	.00	.44	.37	− .07
Hardin County	31	X	1.00*	1.00	.00	.50	.37	− .13
Cannon County	25	X	.98	.99	.01	.55	.58	.03

* Only two banking organizations in market
** Only one banking organization in market

APPENDIX I

Exhibit 2

Number of Markets with Increases in Concentration June 1970-December 1974, All Markets

	Alabama	Florida	Tennessee
All Markets			
Number	25	46	27
Number with increases in three-bank concentration	6	2	2
Number with increases in Herfindahl Index	4	1	4
Markets with deposits of more than $300 million			
Number	5	16	4
Number with increases in three-bank concentration	0	0	0
Number with increases in Herfindahl Index	1	0	0
Markets with deposits of $100-300 million			
Number	10	18	6
Number with increases in three-bank concentration	3	1	0
Number with increases in Herfindahl Index	0	0	0
Markets with deposits of less than $100 million			
Number	10	12	17
Number with increases in three-bank concentration	3	1	2
Number with increases in Herfindahl Index	3	1	4

Exhibit 3

Number of Markets with Increases in Concentration, June 1970-December 1974, Markets First Entered Between June 1970 and December 1974

	Alabama	Florida	Tennessee
All Markets			
Number	25	16	20
Number with increases in three-bank concentration	6	0	2
Number with increases in Herfindahl Index	4	1	3
Markets with deposits of more than $300 million			
Number	5	5	3
Number with increases in three-bank concentration	0	0	0
Number with increases in Herfindahl Index	1	0	0
Markets with deposits of $100-300 million			
Number	10	9	4
Number with increases in three-bank concentration	3	0	0
Number with increases in Herfindahl Index	0	0	0

Exhibit 3 (cont'd)

	Alabama	Florida	Tennessee
Markets with deposits of less than $100 million			
Number	10	2	13
Number with increases in three-bank concentration	3	0	2
Number with increases in Herfindahl Index	3	1	3

APPENDIX II

Measuring Concentration in Banking Markets

The measurement of market concentration often appears to involve varying proportions of necromancy, legerdemain, and alchemy. The following brief discussion of concentration is an attempt to dispel some of the aura of mystery (if not the mystery itself) about this subject.

Market concentration refers to the distribution of the business in a market among sellers. Markets with many sellers who control the total business more or less equally are less concentrated than markets in which fewer sellers control a disproportionately large share of the total business. There is no entirely satisfactory way to measure concentration. The combined market share of the market's largest sellers is commonly used. Thus, concentration is often discussed in terms of the combined shares of the two, four, or ten largest sellers in a particular market. Measures of this type do not account for the total number of sellers and the distribution of business among them. Thus, a market with three sellers may have a .90 two-bank concentration ratio and a market with 100 sellers of which two are disproportionately large may have the same .90 two-bank ratio. Yet one would expect more effective competition in the latter.[1]

The Herfindahl Index is one of several concentration measures developed as an attempt to solve this problem. This index is the sum of the squared market shares of each seller in the market. It is superior to measures using combined shares of the largest firms because it varies with both the number of sellers and the distribution of market shares. Though it does not uniquely describe the distribution of market shares, it does encompass what are believed to be the most important facets of market concentration in a single number.

So far, we have referred to sellers' shares of the business in a market. To apply this to banking, some specific measure or measures of business in a market must be chosen. No measure is without fault. Both tradition and decisions of the U. S. Supreme Court, however, lean heavily toward the use of deposits as a measure of the product of banks and the percent of a market's total deposits held by an individual bank as a measure of that bank's market share.[2]

[1]This problem and the use of the Herfindahl Index to solve it are discussed more fully in Charles D. Salley, "Concentration in Banking Markets: Regulatory Numerology or Useful Merger Guideline," this **Review,** November 1972, pp. 186-193.

[2]For a more thorough discussion of the concepts, disagreement, and evidence on this subject, see Joel M. Yesley, "Defining the Product Market in Commercial Banking," **Economic Review,** Federal Reserve Bank of Cleveland (June/July 1972), pp. 17-31, and W. F. Mackara, "What Do Banks Produce?," this **Review,** May 1975, pp. 70-74.