carrier hub can bring considerable pride, and ultimately new industry, to a city” (Martindale
(1986)). The results reported here suggest that the reality is more complicated. Certainly the
presence of a hub will provide more frequent service, and more nonstop service to more
destinations. It will also reduce both actual and potential competition for the city’s passenger
traffic, resulting in higher fares. This combination is likely to produce positive net benefits for
the price-insensitive but time-sensitive business traveler, while tourists and other discretionary
travelers, who are relatively price-sensitive and time-insensitive, will be adversely affected.
Aside from the obvious distributional implications, this differential effect among classes of
passengers will influence the desirability of attracting a hub to any particular city. An area
whose passengers are mostly business travelers would probably experience an increase in overall
welfare from the establishment of a hub, while a city heavily dependent on tourism would quite
likely be harmed. However, pleasure travelers have little to fear. From the airlines' point of
view, it would be much more attractive to locate a hub at a city with a high proportion of
price-insensitive business travelers.

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INTRODUCTION
Record levels of merger activity during the early 1980s have attracted the attention of economists
and policymakers. Some of this attention arises from an interest in developing an
appropriate public policy toward mergers (e.g., [25]). There is, however, a more basic reason
why economists may direct their attention toward mergers. Specifically, studying the charac-
teristics of acquired firms can provide insights into the objectives, or motives, of owners or
business managers.
The purpose of this paper is to test for the determinants of almost all of the 1,724 bank
mergers and acquisitions from 1978-1983 and to draw inferences regarding motivation from
observed behavior. Variables are included that describe firm, market, and regulatory character-
istics in an attempt to determine what characteristics tend to encourage acquisitions. There is
a sufficient number of observations to permit yearly cross-section tests. This allows examination
of the stability of test results across years. Multinomial logit analysis is used for testing
purposes to account for the fact that the dependent variable is qualitative, distinguishing
between acquired and nonacquired firms. Since there is no single hypothesis being investigated,
extpectations as to results are discussed in connection with each of the independent variables. Of
course, the variables included in the analysis, e.g., profitability, firm growth, and market share,
are variables that economic theory suggests would likely be considered by owners or managers
in making acquisition decisions.
BACKGROUND AND SAMPLE
Mergers have been studied by economists for many years for a variety of reasons, among
them, examination of changes in the structure of American industries (e.g., [15, 18, 12, 7, 22]),
the effects on overall (aggregate) concentration in the economy (e.g., [7, 13, 1, 30]), the
importance of mergers in the growth of firms (e.g., [7, 11, 31, 27, 23]), the competitive effects
of mergers (e.g., [32, 9, 7, 20]), the motives for mergers (e.g., [19, 29, 14, 16, 25]), and the
effect on acquired firms (e.g., [17, 28, 10, 4, 24]).
This study focuses on the motives for mergers. This is a very basic question, since
theoretical models in economics are predicated on assumptions regarding the motives of
entrepreneurs and business managers, acting as agents for owners. Unfortunately, it is not
possible to measure directly the possible motives of business owners or managers, e.g., profit
maximization, growth maximization, or satisfying. In order to gain insights into business

The views expressed herein are the authors' and do not necessarily reflect the views of the Board or its
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typing. Timothy Hamilton provided useful comments on a previous draft.

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motives, it is necessary to study observed behavior with the presumption that owners' and managers' motives will be manifested in their behavior. Business behavior with respect to mergers provides a particularly attractive opportunity for the study of business behavior and, by inference, owners' and managers' motives.

The special features of this study are that the analysis (1) is based on virtually the entire universe of bank mergers and acquisitions, (2) includes a relatively homogeneous set of firms in many different local markets, (3) is based on cross-section tests for several years, (4) covers a very recent time period (1978–1983) during which merger activity reached record levels, and (5) is based on firms for which consistent and detailed data are available. In contrast, most previous studies have been based on limited samples of mergers either by or, of very large firms and of mergers by very diverse firms in different industries so that controlling for “other factors” has been very difficult.

The mergers included in the study, all of which required prior approval by the appropriate federal bank regulator, are drawn from a larger database that includes all 4,085 bank mergers and acquisitions from 1960–1983. Many of these mergers simply constituted a corporate reorganization and were not very meaningful for analytical purposes. To select only those mergers which are meaningful for analytical purposes, a number of criteria were applied. Mergers were excluded from the database if (1) either party was not a bank holding company or commercial bank, (2) either party was a foreign bank with no operations in the United States, (3) the acquired firm was a newly established or nonoperating bank, (4) the acquired and acquiring firms were commonly owned in some form before the acquisition, (5) less than 25 percent of the bank was acquired, or (6) the acquired bank was a failing bank (there were very few of these). These criteria resulted in the identification of 1,724 bank mergers during 1978–1983. Acquired banks selected in this manner along with all nonacquired banks for which complete data are available provide the samples used in this study. Tests are conducted for each of the years 1978–1983. A brief description of the number and size of sample banks, for each test year (1978–1983), is provided in Table 1.

VARIABLES AND DATA
Each variable is constructed separately for each of the six study years. The dependent variable in the analysis is a qualitative variable that distinguishes between banks acquired in horizontal mergers, banks acquired in market extension mergers, and nonacquired banks. Independent variables included in the model are intended to reflect firm or market characteristics that economic theory suggests would be considered by managers making an acquisition. Additional variables are included primarily to control for differences in merger opportunities available to banks. Each of these variables and its expected effect on the probability of a bank being acquired are discussed below.

Firm-specific Variables
A bank size variable for the acquired bank is included in the analysis. It is expected that, ceteris paribus, expansion-minded firms would prefer to acquire relatively large firms. This behavior, however, would be less likely to appear in connection with horizontal mergers than with market extension mergers because of constraints imposed by the antitrust laws. Furthermore, legal constraints on the acquisition of banks by nonbanking firms and the financial difficulties associated with acquisition of a large bank by a smaller bank make acquisition of very large banking organizations unlikely. In addition, acquired firms in banking generally have been small historically. For these reasons, a negative sign is predicted for the bank size variable. Bank size is measured by total deposits in the year before acquisition, i.e., 1977 deposits for the 1978 tests, 1978 deposits for the 1979 tests, and so on. Growth of the acquired firm is included in the analysis for two reasons. First, growth maximization has been suggested as an alternative to profit maximization as the primary objective of business managers. Second, and a logical extension of the first reason, it seems reasonable to expect that expansion-minded firms would prefer to acquire rapidly growing banks. It is expected that the bank growth variable will carry a positive sign in both horizontal and market extension mergers. Growth is measured by the percentage change in deposits during the three years prior to the acquisition year.

The rate of return on assets is one of the independent variables in the analysis. It is particularly interesting because it is an indicator of a bank’s overall operating performance. On the surface, it seems likely that an acquiring firm would tend to acquire a bank with high profits to benefit immediately from an efficient, presumably well-managed firm, with a good reputation. However, it has been argued, especially in recent years, that acquirers prefer to seek out poorly managed firms, which presumably have a relatively low rate of return. According to this line of reasoning, the acquiring firm should be able to pay a relatively low price for a poor performer and then turn it around. Rate of return on assets is calculated as the average net income after taxes and securities gains and losses as a percentage of assets during the three years before acquisition. No sign is predicted for the rate of return variable because of this clear element of uncertainty in connection with both horizontal and market extension mergers.

The total capital-asset ratio is another independent variable with uncertain effects on the acquisition decision. On the one hand, it seems reasonable to expect an acquirer to be attracted to a conservatively run firm that could be operated more aggressively, with a lower capital-asset ratio, subsequent to acquisition. However, discussions with people in the business of putting together acquisitions indicate that banks with a low capital-asset ratio are attractive because they can be purchased for a relatively low price, based on book value (of which capital is a major component). These conflicting effects preclude prediction of the sign of the capital-asset ratio in horizontal as well as market extension mergers. The loan-asset ratio is also included in the

Table 1

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
<th>Horizontal</th>
<th>Market Extension</th>
<th>Nonacquired</th>
<th>Number of Banks Acquired</th>
<th>Total Asset Value of Acquired Banks ($)</th>
<th>Range of Asset Values of Acquired Banks ($)</th>
<th>Average Deposit Size</th>
<th>Acquired Banks ($)</th>
<th>Nonacquired Banks ($)</th>
<th>Market Extension Banks ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1978</td>
<td>144</td>
<td>87</td>
<td>37</td>
<td>13,120</td>
<td>4,949</td>
<td>2,400</td>
<td>35</td>
<td>40</td>
<td>2,000</td>
<td>2,200</td>
<td>2,200</td>
</tr>
<tr>
<td>1979</td>
<td>179</td>
<td>76</td>
<td>63</td>
<td>13,082</td>
<td>4,796</td>
<td>2,602</td>
<td>30</td>
<td>44</td>
<td>2,600</td>
<td>2,900</td>
<td>2,900</td>
</tr>
<tr>
<td>1980</td>
<td>188</td>
<td>89</td>
<td>55</td>
<td>13,021</td>
<td>5,573</td>
<td>2,235</td>
<td>35</td>
<td>48</td>
<td>2,235</td>
<td>2,535</td>
<td>2,535</td>
</tr>
<tr>
<td>1981</td>
<td>359</td>
<td>180</td>
<td>111</td>
<td>12,835</td>
<td>13,484</td>
<td>2,853</td>
<td>41</td>
<td>51</td>
<td>2,853</td>
<td>3,153</td>
<td>3,153</td>
</tr>
<tr>
<td>1982</td>
<td>422</td>
<td>214</td>
<td>122</td>
<td>12,735</td>
<td>25,461</td>
<td>4,206</td>
<td>67</td>
<td>52</td>
<td>4,206</td>
<td>4,506</td>
<td>4,506</td>
</tr>
<tr>
<td>1983</td>
<td>432</td>
<td>201</td>
<td>140</td>
<td>12,672</td>
<td>21,513</td>
<td>3,908</td>
<td>56</td>
<td>56</td>
<td>3,908</td>
<td>4,208</td>
<td>4,208</td>
</tr>
<tr>
<td>Total</td>
<td>1,724</td>
<td>847</td>
<td>516</td>
<td>75,481</td>
<td>52,778</td>
<td>2,209</td>
<td>56</td>
<td>56</td>
<td>2,209</td>
<td>2,509</td>
<td>2,509</td>
</tr>
</tbody>
</table>

Note: Complete data are unavailable for a few acquired banks in each year. Also, banks in New England markets which do not follow county lines are dropped.

Amount figures are in thousands (thousands of dollars).
analysis as a control variable with no predicted sign. Both the capital-asset and loan-asset ratios are measured as averages over the three years preceding the acquisition year. A market share variable is included in the analysis because the benefits that appear to be associated with a leading market position. To the extent that a high market share carries with it an extra element of goodwill and consumer recognition, it should create an "inherent product differentiation," which may allow premium prices. Such a firm would appear to be an attractive acquisition target. However, as noted earlier, it is commonly argued that acquirers seek poorly managed firms and a good (low) price is also important. It seems unlikely, in general, that high market share firms are poorly managed, and with their goodwill and consumer acceptance they would not seem to be available at a low price. Under the circumstances, it is not clear what sign is to be expected. With some uncertainty, a negative sign is predicted for the market share variable in connection with horizontal mergers because of the constraints of the antitrust laws on such mergers. A positive sign for the market share variable is predicted in connection with market extension mergers. The market share variable is measured by the share of deposits in a market held in the year before acquisition.

Regulatory and Market Variables

Two sets of dummy variables are included in the analysis to control for state laws governing the opportunity for geographic expansion. Dummy variables are included to distinguish among banks in unit banking, limited branching, and statewide branching states. Since expansion by branching is relatively expensive, expansion by acquisition is more likely to occur in unit banking and limited branching states where branching is restricted. Since the statewide branching dummy is the omitted variable, the other two variables are expected to carry positive signs indicating a greater likelihood of banks in these states being acquired than banks in statewide branching states. The other set of dummy variables distinguishes between states that allow multibank holding companies and those that do not. In states with restrictive branching laws but where multibank holding company expansions are permitted, there is a relatively great incentive to expand. The incentives in such states to expand can take place only by obtaining a charter (and establishing a new bank) or by acquisition. The acquisition route to expansion is often preferred when branching is not possible. The dummy variable designating states that allow multibank holding companies is expected to carry a positive sign. This would indicate that banks in states allowing multibank holding companies are more likely to be acquired than banks in other states either via horizontal or market extension acquisitions.

Two variables are included in the analysis to account for differences among states in the number of banking organizations and markets. A variable measuring the number of banks in a state is included to account for the number of market areas available for expansion. It seems likely that, ceteris paribus, bank acquisitions (especially market extension acquisitions) are more common in states with a large number of markets than in other states. However, the effect on the probability of an individual bank being acquired is not clear. Similarly, states with a relatively large number of organizations contain both a greater number of acquisition targets and a greater number of potential acquirers and the effect of this variable on the probability of any one bank being acquired is uncertain.

The remaining independent variables are intended to account for the characteristics of the market in which the acquired firm is located. The size of the market is included as an independent variable because expansion-oriented firms are likely to see greater post-acquisition growth opportunities in large markets than in small markets. Therefore, the market size variable is expected to have a positive sign indicating a greater likelihood of a firm being acquired in a large than a small market in market extension mergers. Larger market size is also likely to make regulatory approval more likely in horizontal mergers and is expected to have a positive coefficient for these mergers as well. The market size variable is measured by total commercial bank deposits in a market in the year prior to acquisition. A concentration variable is included as an indicator of monopoly power and the potential for earning excess profits. It is expected, ceteris paribus, that acquiring firms would prefer to acquire a firm in a relatively concentrated market. However, antitrust laws may prevent many horizontal mergers in concentrated markets. Consequently, the concentration variable is expected to carry a stronger positive sign in market extension merger tests than in horizontal merger tests. It is measured by the three-firm deposit concentration ratio in the year before acquisition. A market growth variable is included in the analysis as an indicator of market attractiveness. It is expected that acquiring firms, which, by their behavior, exhibit a desire for expansion, would prefer to acquire a firm in a relatively high-growth market. Thus, the market growth variable is expected to carry a positive sign in both horizontal and market extension merger tests. Market growth is measured by the percentage change in total market deposits during the three years prior to acquisition.

The last independent variable in the analysis is income per capita, which is intended to be an indicator of market attractiveness. Other things equal, a market with a relatively high income per capita would be an attractive one for offering banking services. This variable is expected to have a positive sign regardless of the type of merger.

TESTING PROCEDURE

The dependent variable in this study is an unordered categorical variable, i.e., the banks in the sample fall into one of three categories: not acquired, acquired by horizontal acquisition, or acquired by market extension acquisition. Ordinary least squares is an inefficient estimator for regressions on unordered categorical dependent variables. Therefore, multinomial logit analysis is used for testing purposes. Cross-section tests are conducted on each of the years 1978-1983 for the characteristics of banks acquired by horizontal acquisitions and for the characteristics of banks acquired by market extension acquisition as compared to nonacquired firms.

RESULTS

Multinomial logit analysis yields results which differ substantially from both univariate analysis and ordinary least squares regressions run separately on horizontal and market extension mergers. In view of these findings and the preferability of multinomial logit analysis, only the logit results are reported. Results from yearly cross-section regressions are given in tables 2A and 2B.

Results of the estimation yield little evidence of the predicted negative effect of bank size on the probability of acquisition. Only one of the six yearly coefficients for either horizontal or market extension mergers is significant, and its significance is marginal. These results may reflect nonlinearity in the effect of bank size on attractiveness for acquisition, with the largest banks being too big to be acquired but medium-sized banks being more attractive than the smallest firms.

Results give no evidence that rapid bank growth increases a firm's probability of
### TABLE 2A
Determinants of Horizontal Bank Acquisitions in the United States, by Year, 1978–1983 (Multinomial Logit Analysis)

<table>
<thead>
<tr>
<th>Year</th>
<th>Bank Acquisitions</th>
<th>Bank Growth</th>
<th>Return on Assets</th>
<th>Capital/Gap</th>
<th>Loans/Assets</th>
<th>Market Share</th>
<th>Unit Banking</th>
<th>Limited Banking</th>
</tr>
</thead>
<tbody>
<tr>
<td>1978</td>
<td>-0.203</td>
<td>-0.692</td>
<td>-0.056</td>
<td>-0.002</td>
<td>-0.603</td>
<td>-0.133</td>
<td>-0.098</td>
<td>-0.004</td>
</tr>
<tr>
<td>1979</td>
<td>-0.560</td>
<td>-0.214*</td>
<td>0.038</td>
<td>0.162</td>
<td>-0.104</td>
<td>-0.300</td>
<td>0.040</td>
<td>-0.208</td>
</tr>
<tr>
<td>1980</td>
<td>-0.275*</td>
<td>-0.280*</td>
<td>0.019</td>
<td>0.087</td>
<td>-0.104</td>
<td>-0.167</td>
<td>-0.095</td>
<td>-0.007</td>
</tr>
<tr>
<td>1981</td>
<td>-0.348</td>
<td>-0.306*</td>
<td>-0.074</td>
<td>-0.165</td>
<td>-0.092</td>
<td>-0.098</td>
<td>-0.104</td>
<td>-0.104</td>
</tr>
<tr>
<td>1982</td>
<td>-0.353*</td>
<td>-0.306*</td>
<td>-0.074</td>
<td>-0.165</td>
<td>-0.092</td>
<td>-0.098</td>
<td>-0.104</td>
<td>-0.104</td>
</tr>
<tr>
<td>1983</td>
<td>-0.407</td>
<td>-0.306*</td>
<td>-0.074</td>
<td>-0.165</td>
<td>-0.092</td>
<td>-0.098</td>
<td>-0.104</td>
<td>-0.104</td>
</tr>
</tbody>
</table>

*Coefficients marked by * indicate statistical significance at the 10% level.

### TABLE 2B

<table>
<thead>
<tr>
<th>Year</th>
<th>Bank Acquisitions</th>
<th>Bank Growth</th>
<th>Return on Assets</th>
<th>Capital/Gap</th>
<th>Loans/Assets</th>
<th>Market Share</th>
<th>Unit Banking</th>
<th>Limited Banking</th>
</tr>
</thead>
<tbody>
<tr>
<td>1978</td>
<td>-0.040</td>
<td>-0.564</td>
<td>-0.133</td>
<td>-0.098</td>
<td>-0.104</td>
<td>-0.098</td>
<td>-0.104</td>
<td>-0.007</td>
</tr>
<tr>
<td>1979</td>
<td>-0.560</td>
<td>-0.214*</td>
<td>0.038</td>
<td>0.162</td>
<td>-0.104</td>
<td>-0.300</td>
<td>0.040</td>
<td>-0.208</td>
</tr>
<tr>
<td>1980</td>
<td>-0.275*</td>
<td>-0.280*</td>
<td>0.019</td>
<td>0.087</td>
<td>-0.104</td>
<td>-0.167</td>
<td>-0.095</td>
<td>-0.007</td>
</tr>
<tr>
<td>1981</td>
<td>-0.348</td>
<td>-0.306*</td>
<td>-0.074</td>
<td>-0.165</td>
<td>-0.092</td>
<td>-0.098</td>
<td>-0.104</td>
<td>-0.104</td>
</tr>
<tr>
<td>1982</td>
<td>-0.353*</td>
<td>-0.306*</td>
<td>-0.074</td>
<td>-0.165</td>
<td>-0.092</td>
<td>-0.098</td>
<td>-0.104</td>
<td>-0.104</td>
</tr>
<tr>
<td>1983</td>
<td>-0.407</td>
<td>-0.306*</td>
<td>-0.074</td>
<td>-0.165</td>
<td>-0.092</td>
<td>-0.098</td>
<td>-0.104</td>
<td>-0.104</td>
</tr>
</tbody>
</table>

*Coefficients marked by * indicate statistical significance at the 10% level.

corporate control in which poorly performing firms are acquired. This finding conflicts with the evidence of other work examining merger activity in banking as well as the industrial sector.  
While there is weak evidence that the probability of acquisition is related to both the capital-asset and loan-asset ratios, in most cases these variables have insignificant coefficients. The attraction of low-capital banks may be low acquisition prices because one basis for determining prices is book value, and capital is a major component of book value.  
Results on the market share variable are as expected in half of the equations in each table. High market share reduces the probability of being acquired in a horizontal merger, presumably because of antitrust considerations, while it increases the probability of being acquired in a market extension merger. As hypothesized, a high market share is apparently an
attractive feature of a target bank, at least in market extension mergers where regulatory constraints are not at work. Results for the unit banking and limited branching dummy variables are contrary to expectations. Both variables tend to have negative, significant effects on the probability of acquisition, especially in market extension mergers. It had been expected that where branching is restricted, expansion would more frequently occur by merger. A possible rationale for these unexpected results is that use of crude binary measures of legal restrictions on geographic expansion fail to capture the varying degree of restrictions in state laws. Because unit banking and limited branching states tend to have many more banking organizations than do states with statewide branching, the probability of acquisition may be lower in the former than in the latter despite a higher level of merger activity in the former.

The dummy variable measuring the legality of multibank holding companies has a positive, significant coefficient as expected. The effect is somewhat stronger for market extension than for horizontal mergers, possibly reflecting the greater impact that restrictive branching laws would have on market extension mergers. The variables measuring the numbers of firms and markets in a state are both significant in the majority of the yearly regressions. The number of markets has a positive coefficient, indicating that increased opportunities for acquisitions increase the probability of being acquired. However, the number of organizations variable has a negative effect on the probability of acquisition. The cause of this result may be the same as that advanced to explain the results for the unit banking and limited branching variables given above.

Market concentration has the anticipated negative effect on the probability of horizontal acquisition, reflecting the effect of antitrust restrictions. Concentration does not significantly increase the probability of acquisition in market extension mergers, as expected. Rather, concentration has no consistent effect on acquisitions of out-of-market banks.

The three measures of market attractiveness, all of which were expected to increase the probability of acquisition, have mixed results. Banks in small markets are, unexpectedly, more likely to be acquired in market extension mergers than those in large markets; market size has no effect on the probability of a horizontal acquisition. There is weak evidence (two of six equations in each table) that banks in slower growing markets are more likely to be acquired. Again, this is not the expected result. These results reinforce the earlier conclusion that mergers and acquisitions do not appear to be used to maximize a banking organization's rate of growth. The per capita income variable has the expected positive impact on acquisition probability in the majority of the horizontal acquisition regressions, but in only one of the market extension regressions.

In sum, the regression results are mixed, with many explanatory variables not having their expected impact on the probability of acquisition. In addition, the low level of explanatory power of the regressions, as measured by an analogue to R², indicates that most merger and acquisition activity cannot be explained by the obvious firm, market and regulatory variables included in the estimated equation. It is also notable that findings of this study, which are at least weakly suggestive of a market for corporate control, conflict with most other studies of this kind. However, the failure to find a simple dominant motive for mergers is consistent with earlier studies.

SUMMARY AND CONCLUSION

This study includes firm, market, and regulatory characteristics in tests for the determinants of bank mergers and acquisitions to get an indication of the motives for mergers. The multinomial logit analysis is based on most of the 1,724 bank mergers and acquisitions from 1979-1983. These results provide no direct support for the argument that mergers are motivated by growth or profit maximization. There is, however, a weak indication that a market for corporate control exists, i.e., there is weak evidence that poorly performing firms (low profits and growth) are acquired. Market share of the target firm stands out, along with per capita income, as attractive to acquiring firms.

Overall, the findings in this study do not point clearly to any single motive for bank acquisitions. This is consistent with findings for the industrial sector and largely consistent with other findings for banking.

ENDNOTES

1. There is, of course, a considerable literature suggesting that owners and managers will have different motives. We have assumed that owners of banks will exhibit sufficient control over their agents, the managers, that managers' actions will reflect essentially the same motives as owners.
2. A detailed description of merger activity in banking during this period and the manner in which the data were constructed is provided in [25].
3. A relatively small number of nonacquired banks are branch banks with operations in more than one market. Financial data, such as profits, are available only for the entire bank and not for individual branches. Since it is not possible to construct financial ratios for each of the branches of a bank, and so to thereby match financial data with market data, multimarket branch banks are dropped from the sample.
4. Most of the data used in the analyses are from reports that banks are required to file with a federal bank regulator. These reports, cited as appropriate, are available to the public.
5. Deposit data are from the Summary of Deposits Report.
6. This procedure is generally associated with [3].
7. By focusing on the behavior of acquiring firms, whose actions indicate they are expansion-minded, the observed behavior may be biased toward finding an emphasis on growth. This should not, however, rule out also finding behavior that is consistent with achieving superior profits to the extent that profit improvement is an important objective.
8. Deposit data are from the Summary of Deposits Report.
9. Data are obtained from Call Reports.
10. These include economists and lawyers employed with consulting firms and law firms, respectively.
11. Capital, loan, and asset data are from Call Reports.
12. For a detailed development of this view, see [24].
13. Deposit data are from the Summary of Deposits Report.
14. This variable is based on laws in existence in 1983 for all states. The source of the laws is a listing from the Financial Structure Section, Federal Reserve Board.
15. This variable is based on laws in existence in 1981 and is constructed from a detailed compilation of state banking laws in [2].
16. The numbers of organizations and markets in a state are determined from the Summary of Deposits Report for the year of acquisition.
17. Metropolitan Statistical Areas (MSAs) and non-MSA counties are used as approximations for banking markets. In some New England MSAs, MSA boundaries do not necessarily coincide with county boundaries. These markets were excluded from the analysis. MSAs and non-MSA counties have been extensively used as market areas for research in banking and are commonly used by bank regulators in bank merger analysis.
18. Deposit data are from the Summary of Deposits Report.
19. Numerous studies in banking, as in the industrial sector, find evidence of a positive relationship between market concentration and profitability. For a review of many of these studies see [36].
20. If the prices that must be paid to acquire banks in concentrated markets are greater than prices for banks in unconcentrated markets, other things equal, the expected effect of this variable may be muted.
21. Deposit data are from the Summary of Deposits Report. Deposits in separate banks owned by the same bank holding company are consolidated and the banks treated as a single organization.

22. Deposit data are from the Summary of Deposits Report.

23. Income tier capital is based on 1978 data from the Bureau of the Census.

24. Summary statistics for the data set are available on request from the authors.

25. A pooled cross-section time-series multinomial logit regression was attempted, but we were unable to estimate a regression of that size. In any case, results from the yearly regressions are sufficiently varied that an F test for pooling would likely be rejected.

26. For a recent test in banking and a summary of previous studies, see [24]. Also see [8]. For the industrial sector, see [28, 17, 16, 29, 14].


28. While the cost of these large multinomial logit regressions precluded extensive experimentation with the estimated equation, ordinary least squares regressions run on various subsets of the data yield results similar to those from using the entire data set, and produce similarly low R^2. For these regressions, the data set was divided by size of acquiring bank, size of acquired bank, and by geographic area.

29. Examples were cited in an earlier exodite.

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