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Advertising for Demand Deposits

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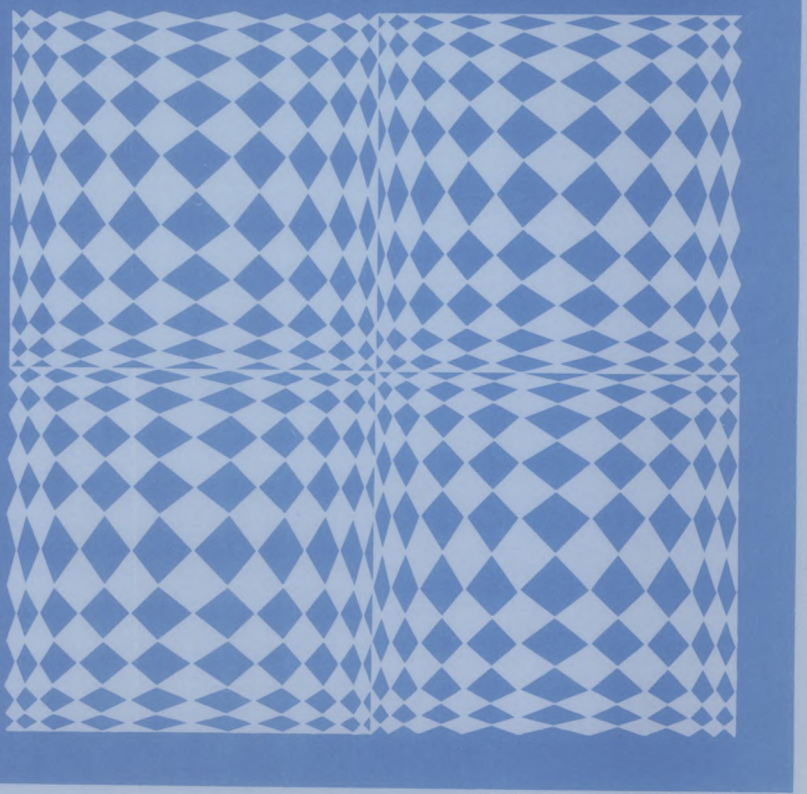

Research Paper No. 76-2

ADVERTISING FOR DEMAND DEPOSITS

By

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I. INTRODUCTION*

This paper explores the determinants of advertising for demand deposits. From a theoretical point of view, the market for demand deposits is particularly interesting. As an institutional feature, price competition for demand deposits is prohibited by statute and by regulation. Since prices cannot clear markets, some other mechanism must be found. Advertising could play an important role in adjusting supply of and demand for deposits.

The lack of attention to advertising by commercial banks must be attributed to a distinct lack of data. Problems in defining inputs and outputs and the level of sales in the banking industry are quite severe, so that banks are excluded from inter-industry studies using Internal Revenue Service data. Most micro data until recently were held confidential, although even Report of Income statements do not contain a breakdown of expenses. This basic data problem was resolved for this study by using information obtained from the Functional Cost Analysis program sponsored by the Federal Reserve System. Functional Cost data have been used extensively in the past by researchers within the Federal Reserve System to study bank costs and production functions. The data themselves, however, are confidential and cannot be reported.

Within the mainstream of research in industrial organization, advertising has been found to be an interesting feature of firm conduct. As such, this form of behavior may be conditioned by the firm's environment. Empirical work to be reported below provides some support for the structure-conduct hypothesis.

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*Jan Gigstad and Robert Keyt supplied the extensive programming necessary to compile the data and prepare them for analysis.

The outline of this paper is as follows. Section I presents a model in which expenditures on advertising are adjusted to equate the supply of lendable funds to the demand for bank loans. Section II discusses the sample of banks used to estimate the relationship outlined in Section I and details the construction of the variables of the model. Section III reports empirical results, and section IV concludes the paper.

II. A Model of Deposit Advertising

Each bank has outstanding at any point in time certain commitments to extend credit to its clients. The maximum amount of credit and the rate at which credit will be extended are the most important characteristics of the credit line, along with the fees or compensating balances which pay for the line. Since the credit line can be exercised at the discretion of the loan customer, each bank must forecast its expected loan "takedown" and be prepared to lend however much its clients want. The forecasting process can be thought of as follows. The bank estimates the probability that each credit line outstanding will be exercised. Then the bank estimates the expected size of the loan takedown, given that the credit line is exercised. The product of these two is the expected size of the loan. Summing over all credit lines outstanding gives the total expected loans by that bank at the future date. It is assumed that banks forecast one year into the future.[1]

Notwithstanding the growing importance of non-deposit sources of funds, expansion of deposits will continue to be a major source of

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[1]It does not complicate the anlysis if it is also assumed that banks forecast some expected increase in loans from sources other than take-downs of credit lines, since other borrowers will respond to the same economic forces as owners of credit lines.

increased lendable funds for commercial banks. Although the shift from demand to time deposits is certain to continue, demand deposits remain an important source of funds for banks. This paper considers only demand deposit advertising. Time deposits are considered to be sufficiently different in nature to justify separate treatment.[2]

The loan forecast indicates to the bank the quantity of lendable funds it will need. By forecasting deposits the bank can estimate its expected lendable funds. Advertising enters the model through its effect on future deposits. We posit that advertising can be used to increase deposits at the bank, and that the level of advertising expenditures can be determined so as to equate expected supply of lendable funds to expected loan demand. Implicitly the optimal level of advertising will be a function of the determinants of expected loans and expected deposits.

To estimate the conceptual model outlined above would require a comprehensive treatment of bank portfolio decision, complete with an explicit expectations generator. For the limited purposes of this study, such as undertaking is not worthwhile. Instead, a structure-conduct empirical model of the type commonly encountered in industrial organization research will be used. An elementary forecasting procedure will be used for loans and deposits.

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[2]Some preliminary analysis of the type reported in this paper was conducted for time deposits with the basic result that this model had virtually no explanatory power. This probably results from two factors. First, most time and savings accounts are highly homogeneous commodities, so that price is the most important factor to the virtual exclusion of market structure or other characteristics. Second, for deposits which exceed the insurance limit, the adequacy of the bank's capital, or depositor expectations of the probability of the bank's failure, assume great significance and interact strongly with the rate paid on such deposits. Thus the present model is not adequate to explain advertising for time deposits.

Four factors are important for forecasting loan demand: (1) the scale of the bank's operation, meaning the total number, and dollar value, of loan commitments outstanding; (2) the probability of loan commitments being exercised, which is a function of total financing needs of bank clients and alternative borrowing costs; (3) the likely size of loan takedowns, which is probably also a function of bank scale (large customers need to deal with large banks); and (4) expected increase in loan demand other than from commitments. Three variables will be used to represent these four factors: deposits (as a measure of bank scale), current loan yields (net of cost of money), and the historical growth of loans in the bank's market.

The forecast of future deposits depends on three factors: (1) present deposits; (2) the expected growth rate of deposits; and (3) a confidence interval around the growth expectation. The second and third factors are represented by the historical growth rate of deposits and by the standard deviation of deposits around their historical growth trend.

The efficacy of advertising in attracting deposits is conditioned by the nature of the individual bank and the characteristics of the market in which it is located. Four individual bank characteristics will be tested for their influence on advertising: market share, wholesale or retail orientation, age (years since founding), and holding company affiliation. The four aspects of market structure considered most important are concentration, the conditions of demand for loans and supply of deposits (both discussed above), regulatory restrictions on branching (availability of substitutes for advertising), and the urban or rural nature of the market.

The larger the market share of a bank, the greater the proportion of the inter-industry effects of advertising the bank can expect to internalize; and consequently the larger its advertising budget can be expected to be. The relationship between market share and intra-industry effects is much less clear. It seems likely that firms with larger market shares feel more susceptible to inroads from other banks' advertising. This may induce leading banks to spend more on advertising, as a defensive device. It may, on the other hand, induce leading banks to spend less on advertising, so as not to promote advertising by other banks. On the whole, it is likely that inter-industry effects outweigh intra-industry effects and that market share has a positive relationship to advertising.

Wholesale and retail banking differ significantly in terms of the bundles of products offered. Wholesale banking is oriented toward large customers, with the provision of a credit line as the major product or service provided. The explicit or implicit price of the credit line (commitment fees or compensating balance requirements) is likely to be the most important means of competing for such accounts. The proliferation of personal banking packages in recent years attributes to the many ways of competing for the deposits of individuals. Non-price terms predominate here, and advertising is likely to play a much more important role. As a consequence, banks which are oriented toward wholesale customers are likely to advertise less.

Even if both wholesale and retail banks do advertise, the media selected to carry advertising messages are unlikely to be the same for both. An important feature of this advertising process is that corporate treasurers will always be actively seeking the lowest prices for credit lines. This search for information on the part of bank customers will

also lower bank advertising expenditures. Because wholesale banks are likely to have considerably more large accounts, we will include average account size in the regression equation to control for the wholesale/retail dimension.

New firms in general must advertise to make known their existence and to attract a loyal clientele. In commercial banking, the importance of the customer relationship reinforces this motive to advertise and makes it very likely that younger banks will advertise considerably more than older ones. In order to use a continuous variable, the age of the bank (years, expressed in decimals, since the bank opened for business) in reciprocal form will be entered into the regression model. Unfortunately, this variable is unlikely to have any statistical significance for our sample of banks. The data requirements for the deposit growth and deposit variability variables forced the exclusion of any banks fewer than eight years old. This will probably render the age variable insignificant.

The effects of holding company affiliation on bank decision making are still quite unclear. Available evidence on changes in bank operations following holding company affiliation are only tangentially related to advertising.[3] "Other operating expenses," which include advertising, appear to rise significantly for banks after they are acquired by holding companies. On the other hand, service charges on demand deposit accounts fall slightly but not significantly. The main effect expected is the centralization in the parent company of the advertising function, on the assumption that bank subsidiaries can benefit from association with the parent name. Such centralization can also be seen as eliminating

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[3]Samuel H. Talley, "The Effect of Holding Company Acquisitions on Bank Performance," Staff Economic Studies #69, Board of Governors of the Federal Reserve System.

potentially wasteful duplication of effort and taking advantage of whatever economies of scale may exist in advertising. On the whole, we expect banks affiliated with holding companies to advertise somewhat less than other banks.

As in any structure-conduct-performance test, the definition of the market is crucial to the analysis. In this paper, we focus on the bank in its local market. This viewpoint is similar to that adopted by the Board of Governors of the Federal Reserve System in its deliberations on mergers and holding company acquisitions and is also in close keeping with the nature of the sample of banks (see section II). Specifically, the market for any bank is assumed to be exactly coterminous with the county in which the bank or its head office is located. While this usage is fairly common, the restrictiveness of this assumption should not be underestimated. Appendix I discusses the applicability of this definition for the sample employed.

Concentration is measured by the numbers equivalent, the reciprocal of the Herfindahl index. To take account of the possibility that local market shares are distorted due to large demand deposit balances of large firms located in other banking markets, a Herfindahl index was computed only for accounts of less than $1,000. This concentration index accords better with the local nature of the banking market and consistently yields better regression results. All results reported below, therefore, use the numbers equivalent based on accounts of less than $1,000.

The conditions of supply of lendable funds and demand for bank loans were discussed above in conjunction with the forecasting process.

Establishing branch offices is one of the more important alternatives to advertising as a means of increasing lendable funds. Branches

enable banks to compete by offering locational convenience and by enabling the bank to follow shifts of population. With the exception of Illinois, all states within the Seventh Federal Reserve District allow some form of branching within the county, and some states allow branching into contiguous counties. Branching restrictions in Illinois are thus considerably more stringent than in other district states, and this qualitative difference will be taken into account.

The urban or rural nature of the bank's market may be important for three reasons. First, there may be important cost differences between the two types of regions. Especially, some advertising costs can be expected to be functions of the distance over which messages are propagated. Advertising will then be cheaper in urban areas since population densities are higher. Second, more developed transportation systems in urban areas may reduce the economic distance between banks, heightening competition and promoting greater advertising expenditures. Third, the significance of location may differ considerably. Convenience and accessibility are important motifs in bank advertising. Locational differences may be more important in cities, with their locationally specialized transportation networks (e.g., in most cities the best means of transportation are those which go into the downtown area.) Traffic congestion is another factor increasing the importance of location in urban areas. In addition to these conflicting aspects of urban-rural location, it is likely that different advertising media predominate in the different areas, making cost comparisons extremely hazardous. Thus the net effect of the urban or rural nature of the market cannot be predicted, but is likely to be insignificant.

Size-related bias is to be expected in any econometric relationship estimated with micro data. Larger banks will spend more on advertising because their total budgets are larger. To correct for this bias, the dependent variable will be deflated by thousands of dollars of demand deposits and specified as an expenditure intensity rather than as dollars of expenditure.

The form of the estimating equation is

$$(1)\quad A/D = b_0 + b_1 LYLD + b_2 LGRO + b_3 DGRO + b_4 DVAR + \underline{b_5}\underline{S} + \underline{b_6}\underline{I},$$

where D is demand deposits, LYLD is the net yield on loans, LGRO is the historical growth rate of loans in the county, DGRO is the historical rate of growth of deposits of the bank, DVAR is the variability of deposits around their growth trend, $\underline{S}$ is a vector of market structure characteristics (other than LGRO), and $\underline{I}$ is a vector of individual bank characteristics.

III. The Sample and Construction of Variables

The advertising relationship discussed in section I was estimated with micro data drawn from a sample of 160 Seventh Federal Reserve District commercial banks which participated in the 1972 Functional Cost Analysis program sponsored by the Federal Reserve Bank of Chicago. Since participation in the program is voluntary and the data are held confidential, disclosure of information on a bank by bank basis is not possible. Expenditure data are for the year 1972.

The purpose of the Functional Cost Analysis program is to assist banks in maintaining accurate and useful cost accounting of their operations. For the most part, participating banks are too small to maintain cost accounting departments of their own, but it will be seen

that a considerable range of firm size is still encompassed in the sample. Because the program is voluntary, and because the output of the program is of such benefit to the participating banks, we can have considerable confidence in the overall quality of the data.

The cost accounting framework breaks down all bank operations into separate functions, such as demand deposits, time deposits, real estate loans, personal loans, trust services, data processing services, etc. For each function, participating banks allocate their expenses to the best of their abilities. Any expenses which cannot be allocated directly to functions are reported as a residual. This residual, by type of expense, is allocated to functions indirectly by the functional cost program itself. Since these indirectly allocated expenses tend to be overhead or fixed costs, attribution of them to specific functions is not completely accurate. In this paper, the advertising costs we seek to explain are only those which are allocated directly by participating banks.

The sample of banks displays considerable diversity, given that all are located within the Seventh Federal Reserve District. Size as measured by total deposits ranges from under $5 million to well over $1 billion, with a mean size of $32 million and a median size of $45 million. Sixty-six banks are chartered in Illinois, 20 in Indiana, 29 in Iowa, 21 in Michigan, and 24 in Wisconsin. Ninety-four of the banks are located in Standard Metropolitan Statistical Areas, and twenty three are affiliated with bank holding companies. The oldest bank was chartered in 1848, and the youngest opened for business in 1964. This sample thus displays considerably more diversity of size

than most samples of industrial or commercial firms, yet because most banks are rather small there is considerable homogeneity in terms of products and services. In addition, we are not forced to define the firm's market as the entire country, since information (from Reports of Condition and Income and Dividends) is available on virtually the entire universe of commercial banks from which to construct market structure variables.

Net yield on loans (LYLD) is calculated by summing gross earnings on all loan categories and substracting total expenses for all loan categories (direct and indirect expenses). Dividing this difference by total loans gives gross yield on loans. From gross yield is subtracted what is termed "cost of money," or an average cost of all lendable funds. Multiplying the result by 100 gives net yield on loans.

Historical rate of growth of loans in the market (LGRØ) is calculated as the 1971 to 1968 ratio of all loans made by all banks in the county.

Historical rate of growth of deposits (DGRØ) was calculated separately for each bank in the sample. A compound growth rate was fitted to annual observations on total demand deposits by simple regression. Deposit variability (DVAR, multiplied by 100 for scaling purposes) was calculated as the standard error of the estimate divided by the mean value of deposits. Data for years 1964, 1965, 1968-1971 were used.

All data on market shares (SHARE) were calculated using the 1970 Summary of Deposits survey.

Average account size (ACSIZ) was calculated as total demand deposits (in thousands of dollars) divided by total number of demand deposit accounts.

Age of the bank (AGE) was calculated relative to December, 1972, which is the reporting date for FCA data. Years and months since the bank opened for business, or since the bank was chartered if the opening date was not known, were converted to years and decimals. The multiplicative inverse was taken to yield the age variable.

Holding company status (HC) is represented by a simple dummy variable taking on the value of unity for any bank affiliated with a holding company, zero otherwise.

Herfindahl indices of concentration (CONCE) were computed using market shares based on the 1970 Summary of Deposits survey for total deposits and for deposits in accounts of less than $1,000.

To represent branching restrictions (BRNCH) a simple dummy variable was used, taking the value of unity for all banks located in Illinois, zero otherwise.

Several variables were tried to represent the urban or rural nature of the bank's market. A dummy variable (SMSA) taking the value of unity if the bank was located in an SMSA and zero otherwise, population density (PDEN) in thousands of persons per square mile, and percent of the population living in urban areas (PURB) were all tried.

The total number of Seventh District banks participating in FCA in 1972 was 213. Of this number, 34 banks made no direct allocation of their advertising and were excluded from the sample on this ground. Of the remaining banks, 19 had to be excluded for various reasons, primarily lack of time series data on deposits for the construction of DGRO and DVAR. Mergers and consolidations accounted for the lack of consistent time series data. One or two banks were excluded because

no non-bank financial intermediaries were operating in the market. Since the presence of non-bank financial intermediaries is required for any inter-industry effects to be possible, and because so very few potential sample banks did not fulfill this requirement, it was determined to drop them from the sample rather than take account of this status with a separate independent variable.

IV. Empirical Results

Some estimates of the advertising relationship are given in Table 1. Equation 1 includes all variables specified above. Signs of three variables, DGRO, HC, and AGE, are counter to predictions, but none of these coefficients is significant. In fact, the only variable whose coefficient is significantly different from zero is DVAR, deposit variability. The only other variable whose coefficient exceeds its standard error is BRNCH, the branch banking dummy.

Equation 2 deletes three individual characteristics and one market structure variable which added virtually nothing to the explanatory power of the model. (LYLD, which also adds almost nothing to the model, is retained because of its role in the forecasting process.) Market concentration is now significant at the 10 percent level, and the BRNCH and LGRO coefficients exceed their standard errors. Most standard errors are smaller than in equation 1, indicating a reduction in collinearity.

Equation 3 further deletes DGRO and ACSIZ, with the result that LGRO achieves 10 percent significance and most standard errors fall. Finally, deleting LYLD in equation 4 raises CONCE to 5 percent significance and BRNCH to 10 percent.

The coefficients of DVAR and BRNCH show reasonable stability across the four equations. The coefficients of CONCE and LGRO increase considerably, probably due to greater collinearity with the excluded variables. No sign changes occur when specifications are altered.

Further analysis, not reported here, was conducted based on equation 4. Each of the excluded variables, DGRO, SHARE, HC, ACSIZ, AGE, and SMSA, was added individually to see if one or more of them might be significant with fewer variables in the equation. All these variables continued to be insignificant, although the age variable took on the expected sign.

Testing was conducted using PURB and PDEN as alternatives to SMSA. In equation 1 of Table 2, population density is entered along with the variables of equation 4, Table 1. Its sign is negative, as was the sign of SMSA in Table 1 equation 1, but the coefficient is not significantly different from zero. In addition, CONCE unexpectedly switches to the "wrong" sign.

When PURB is entered into the model (equations 2 and 3, Table 2) its coefficient is negative, stable in size, and significant regardless what other variables are specified. The problem with PURB (and PDEN) is its high collinearity with the other independent variables. Since PURB is probably measured with less error, it emerges with high significance while most other coefficients become insignificant. That PURB really is highly collinear can be seen from the following regression equation:

$$\begin{aligned} PURB = {} & 43.7 - .386\ DGRO + .820\ DVAR + .846\ CONCE - .201\ SHARE \\ & \quad (9.27)\ (.357) \qquad (2.34) \qquad (.190) \qquad (.097) \\ & - 1.62\ LGRO + 1.94\ LYLD - 2.89\ BRNCH + 4.45\ HC + .973\ ACSIZ \\ & \quad (3.27) \qquad (1.81) \qquad (2.73) \qquad (3.24) \qquad (.644) \\ & + 70.8\ AGE + 22.7\ SMSA \qquad\qquad R\text{-square} = .666 \\ & \quad (76.3) \qquad (2.36) \end{aligned}$$

To judge by t-statistics from this equation, including PURB in the regression equation is most likely to affect CONCE, SHARE, and HC. PURB and SMSA are, in addition, good substitutes. These are, in fact, the results obtained. While including PURB in place of CONCE, SHARE, and SMSA would improve the statistical fit, it would confound interpretation of the results.

V. Summary and Conclusions

Mixed results were obtained for this model in which banks use advertising to equate expected lendable funds to expected loan demand. The forecasting process described in Section I does not receive strong confirmation from the empirical testing. Both the rate of deposit growth and net yield on loans fail to exhibit statistical significance, and growth of loans is only marginally significant. The one variable whose coefficient is consistently significant is DVAR, representing the confidence interval around the deposit forecast. That this variable should enter so strongly in the regression equation is a rather surprising result. Further study of deposit variability appears to be in order.[4]

The fundamental structure-conduct hypothesis receives support from the market concentration variable and, to a lesser extent, from the dummy variable representing inability to branch and LGRØ, representing the condition of demand. Individual bank characteristics are of very little assistance in explaining demand deposit advertising.

In sum, the performance of this model is spotty. Judged globally, however, the empirical results are sufficiently good ($R^2 \approx .25$) to consider that a reasonable start has been made in accounting for this highly complex phenomenon.

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[4]In another paper ("Long-Run Deposit Variability," Staff Memoranda 76-3 (forthcoming)) just such an investigation is undertaken. DVAR is regressed on variables representing market structure and characteristics of individual banks. As those results relate to this study, the important finding is that deposit variability is explained quite well by concentration, market share, holding company affiliation, and especially rate of growth of deposits. Therefore, it is clear that multicollinearity poses a substantial problem in the present work.

APPENDIX I

COUNTIES AS GEOGRAPHIC MARKETS

Three broad classes of considerations influence the definition of a firm's market for empirical purposes: (1) any implications of economic theory must be taken into account; (2) different market definitions have profound effects on types of firms which can be included in the sample; (3) data availability strongly conditions both the market definition and types of firms which comprise the sample.

To put these three factors into perspective from a practical point of view, economic theory is the least important. Theory requires a market to be the area over which competitive influences are transmitted quickly and with substantial effect. Market definitions must therefore be geared to the type of competitive influence under investigation, in this case attempts to attract demand deposits. The two types of economic agents susceptible to advertising, individuals and other (non-bank) firms, differ significantly in many respects. It is not clear, therefore, that a single market definition is adequate for both of them.

A grave risk, and one which is not subject to calculation, is that the sample used might incorporate certain biases which are not apparent. Achieving as large a sample size as possible is the only practical way to deal with this problem. Therefore, market definitions which are relatively geographically exhaustive are to be preferred. In addition, markets which are less extensive geographically are preferred, since aggregation biases are less likely.

Availability of data is, unfortunately, the most important consideration in the usual case. Normally, either the maximum sample is known

in advance and the definition of the market is made implicitly to accommodate the sample, or other data requirements can be met by only one or a few definitions of the market.

Most banks in this sample are small, which implies that their markets are local in nature. While counties satisfy the two geographic criteria set above, exhaustiveness and relative smallness, other definitions are possible. In particular, the service area of a bank, defined as a circle within which 80 percent (or some other arbitrary figure) of the the bank's deposits originate, is an often-used market definition. The basic drawback to service areas is that the bank itself must provide information on the size of its area. Therefore, only banks which had made formal application to the regulatory authorities for a merger or acquisition would be candidates for the sample. In addition, the difficulties of constructing market variables would be considerable, since service areas need not follow political boundaries.

Besides exhaustiveness and relative smallness, counties have other desirable characteristics as markets. They are well-defined areas, so that determining any bank's market is a clear-cut decision and in addition it is a relatively simple matter to locate all the banks in any particular market. This latter feature is especially welcome for calculating concentration measures. Another benefit of counties is the wealth of economic and demographic data which is available for such regions.

Against these advantages for data collection and sample determination, one must balance the possibility that economic activity does not follow county lines. This appendix presents evidence that, for the Seventh Federal Reserve District, counties are reasonable approximations to economically relevant markets for banking activities both of individuals and of firms.

A reasonable supposition is that a person transact his banking business at a bank office either near his place of work or near his residence. County markets are then suitable only to the extent that people work in the county of their residence. The table below shows the mean and standard deviation by state of the percentage of the labor force residing in the county of its employment. The two statistics are calculated for all counties in the state and for those counties represented in the sample. These data show a strong tendency for people to work near where they live.

State	Number of Counties in Seventh District		Percentage of Labor Force Residing in County of Employment			
			in sample		total	
	in sample	total	mean	s.d.	mean	s.d.
Illinois	29	58	74.6	11.9	68.6	12.3
Indiana	13	64	79.2	13.6	66.8	15.7
Iowa	19	97	83.5	9.9	81.2	8.1
Michigan	20	67	75.4	13.8	70.1	13.7
Wisconsin	17	46	77.8	11.5	76.8	9.6

SOURCE: Table 119, Volume I, Census of Population: 1970, Parts 15 (Illinois), 16 (Indiana), 17 (Iowa), 24 (Michigan), and 51 (Wisconsin).

As for business firms, the data are less direct. A study of Ohio manufacturing firms by the Federal Reserve Bank of Cleveland[1] indicates that 89 percent of all respondent firms in 1973 maintained their principal banking relation with a bank in the same county (87 percent in 1969). Furthermore, most banks that added a principal banking relation chose a bank in the same county, and nearly all firms that changed their principal banking relationship selected another bank in the same county. While this survey was conducted in Ohio, which is not in the District of

[1]Robert F. Ware and Lorraine E. Duro, A Survey of Manufacturing Firm-Bank Relationships in Ohio, Federal Reserve Bank of Cleveland, June 1974.

our sample and does have somewhat different economic features from the Seventh District (notably the lack of a money-market the size of Chicago), it is considered that the results are representative of Seventh District experience also.

APPENDIX II

Simple Correlation Coefficients for Independent Variables

	DGRO	DVAR	CONCE	SHARE	LGRO	LYLD	BRANCH	HC	ACCTSIZE	AGE	SMSA
DVAR	.684										
CONCE	-.014	-.102									
SHARE	-.254	-.176	-.652								
LGRO	.072	-.029	-.258	.176							
LYLD	.003	-.112	-.344	.409	.107						
BRANCH	-.051	-.147	.528	-.387	.032	-.004					
HC	.016	-.024	-.062	.128	-.177	.022	-.307				
ACCTSIZE	-.106	-.112	.216	.036	-.167	.110	.092	.202			
AGE	.720	.504	.145	-.148	-.108	-.120	.040	.020	-.191		
SMSA	.002	.047	.414	-.372	-.236	-.158	.186	.054	.154	.160	
MEAN	5.496	.5256	9.784	22.72	2.065	2.249	.4125	.1438	2241.	.0212	.5875
ST. DEV.	5.158	.6366	8.881	16.62	.3510	.6658	.4923	.3508	1788.	.0217	.4923

Table 1

Advertising Intensity Regressed on Selected Variables
Standard Errors in Parentheses

EQUATION	1	2	3	4
DGRO	.008	.005		
	(.010)	(.008)		
DVAR	.304***	.300***	.330***	.328***
	(.067)	(.066)	(.047)	(.046)
CONCE	-.004	-.006*	-.006*	-.007**
	(.005)	(.005)	(.004)	(.004)
SHARE	.001			
	(.003)			
LGRO	.085	.098	.114*	.113*
	(.094)	(.089)	(.088)	(.087)
LYLD	.011	.018	.015	
	(.052)	(.050)	(.048)	
BRNCH	.101	.092	.094	.099*
	(.079)	(.073)	(.073)	(.071)
HC	.009			
	(.093)			
ACSIZ	-.017	-.013		
	(.019)	(.017)		
AGE	-.883			
	(2.20)			
SMSA	-.013			
	(.068)			
'1'	.066	.056	.015	.054
	(.267)	(.239)	(.234)	(.195)
R-sq	.280	.277	.273	.272
$\overline{R}$-sq	.226	.244	.249	.253
F	5.23	8.33	11.5	14.4

*Denotes significance at the 10 percent level.
**Denotes significance at the 5 percent level.
***Denotes significance at the 1 percent level.

Table 2

Advertising Intensity Regressed on Selected Variables
Standard Errors in Parentheses

EQUATION	1	2	3
DGRO			.007
			(.010)
DVAR	.329***	.335***	.307***
	(.046)	(.046)	(.066)
CONCE	.003	-.001	-.0003
	(.009)	(.005)	(.006)
SHARE			-.00002
			(.003)
LGRO	.100	.094	.079
	(.088)	(.087)	(.092)
LYLD			.018
			(.052)
BRNCH	.091	.088	.091
	(.071)	(.071)	(.078)
HC			.031
			(.092)
ACSIZ			-.011
			(.018)
AGE			-.627
			(2.17)
PDEN	-.052		
	(.044)		
PURB		-.004**	-.004**
		(.002)	(.002)
'1'	.031	.294	.284
	(.196)	(.223)	(.282)
$\underline{R}$-sq	.278	.293	.299
$\overline{R}$-sq	.255	.270	.247
F	11.9	12.8	5.73

*Denotes significance at the 10 percent level.
**Denotes significance at the 5 percent level.
***Denotes significance at the 1 percent level.