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Volume Title: Business Loan Costs and Bank Market Structure: An Empirical Estimate of Their Relations

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Volume Publisher: NBER

Volume ISBN: 0-87014-239-9

Volume URL: <http://www.nber.org/books/jaco71-1>

Publication Date: 1971

Chapter Title: The Study, Its Rationale and Plan

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Chapter URL: <http://www.nber.org/chapters/c0663>

Chapter pages in book: (p. 1 - 5)

Chapter 1

THE STUDY, ITS RATIONALE AND PLAN

IN A free enterprise economy, such as exists in the United States, there is a widespread belief in the ability of competition and the price mechanism to produce efficient firm and market performance. However, some industries are subjected to substantial regulation. This usually occurs when the industry cost structure precludes reliance upon competition to produce efficient performance; a sufficient number of firms are not expected to survive in the unregulated environment for competition to ensue. Hence, price and/or output is subjected to governmental constraints.

The commercial banking industry purchases a wide variety of factor inputs and produces a broad array of products. These operations are subjected to a heavy framework of regulations; the rationale being their crucial role in the creation of the nation's money stock, their central position in business financing, their control over the transfer mechanism which handles the vast majority of money payments, and the fact that they are entrusted with a large fraction of the liquid funds in the economy. The goals that prompt bank regulations are not necessarily dominated by the desire for efficiency. Even if it is determined that regulation of banking operations is desirable, it is necessary to know what effect a regulation or combination of regulations has on economic efficiency. Such information is needed because the cost in efficiency of a particular regulation or set of regulations may be found to be greater than the expected social benefits; there are possible tradeoffs between goals and alternative regulations which would be desired; or

the combination of regulations may be altered to achieve the desired policy goals with a smaller impact on economic efficiency.

When an individual firm operates in a market that is not perfectly competitive and faces a downward sloping demand curve, less is produced and the price is higher than under perfectly competitive conditions. Because of the relatively small number of competing banks in most markets, the wide range of products supplied, and the great potential for differentiating ostensibly similar products, there is no possibility that bank markets conform to the classical description of competitive markets. However, most banks do operate subject to substantial competitive pressure from other banks and from other suppliers of similar services. The degree of competition varies among markets and even within markets for different products. It is clear that the products where banks face lower competitive pressure will have higher prices and less product sales than would occur if competition were more intense. What is not clear, however, is the intensity of competition that prevails in bank markets and the extent of the differences in competitive vigor between bank markets that are attributable to structural differences induced by regulations.

Among the set of banking regulations, branching restrictions are the most pervasively influential in determining the structure of banking markets. Other regulations, such as restrictions on entry and restriction on payments for deposits, have a less important effect on structure. The number of banks in a market is a positive function and the number of bank offices in a bank market is a negative function of the degree of branching restriction, although there is some question of whether these functional relationships are linear.¹ Concentration is negatively

¹ There are three distinct classes of branching restrictions: branching permitted statewide, branching restricted within some part of the state, and complete prohibition of branches. The question of linearity arises with respect to whether the restricted branching states lie between the unit and statewide branching states with regard to both offices and banks. For a discussion of the problems of estimating these relationships and the differences in estimates, see Donald P. Jacobs, "The Interaction Effects of Restrictions on Branching and Other Bank Regulations," *Journal of Finance*, May 1965, pp. 332-348;

related to the number of banks in the market, and, therefore, it is also a negative function of the degree of branching restriction.

Economic theory suggests that the level of concentration of an industry's assets influences the competitive condition of the market but economic theory does not provide an analytical solution to the relative tradeoff in competitive intensity between the higher number of offices and the lower number of banks. Neither does economic theory provide an answer to the question of the size of the impact of concentration on price. Moreover, neither economic nor organizational theory provide any insight into whether differences in the organizational composition of banks in the market because of branching restrictions has an impact on the intensity of competition and, therefore, on prices charged. Thus, the question of the relationship between market structure and performance can, for the most part, only be answered empirically.

This study attempts to supply an empirical estimate of the relationship of market structure to the performance of banks in supplying services to businesses. It aims to provide an answer to the question: What is the relationship between market structure variables and the price businesses pay banks for services provided? It should be noted that this is only part of the larger question of the relationship of market structure to the performance of banks. But, since the provision of services to businesses encompasses a major portion of the totality of services provided by banks, the conclusions will have considerable relevance to the larger question.

Chapter 2 is devoted to developing models from which the parameters of the price-structure relationship can be estimated. These models must be based upon a description of how banks price their services to businesses. The procedure is to first develop a bank pricing model. The pricing model is then

Bernard Shull and Paul M. Horvitz, "Branch Banking and Structure of Competition," *National Banking Review*, March 1964, pp. 301-341; R.F. Lanzillotti and T.R. Saving, "State Branching Restrictions and the Availability of Branching Services," *Journal of Money, Credit, and Banking*, November 1969, pp. 778-788.

modified to a form that allows parameter estimates of the price-structure relationship.

A major implication of the pricing model is that, if maximization of discounted long-run profits is the goal of bank management, prices of individual products will be set to make a profit on the package of services provided to a customer. The observed prices of individual products is affected by the package of services purchased by the customer. A correct specification of the price of bank services must, therefore, take into account all products and services contained in the price or prices paid by a customer.² Estimating an equation constructed on the basis of bank customers requires data that represent the entire profile of a customer's relationship at a bank.

A second important implication of the model is that business customers compensate banks with three types of payments: interest on loans, deposit balances, and fees. At this time the first two of these account for the vast majority of bank compensation; fees are relatively unimportant. Therefore, both interest rates and deposit balances must be taken into account in any conclusions about the impact of market structure on the price businesses pay for bank services.

All prior studies of the price-market structure relationship in banking specified models that stipulated the interest rate on loans as the only price, and size of loan and possibly loan term as the services provided. Data availability was a major reason behind these model specifications; data describing other customer characteristics were simply not available.

To develop the data required to estimate the parameters of the price-structure relationship, a questionnaire was sent to a sample of over 600 banks with assets between \$40 and \$400

² The description and analysis of bank pricing practices has prompted a large volume of research. The hypothesis that bank pricing can be rationalized if the bank is viewed as establishing a long-term relationship with its business customers, which is the central theme of the pricing model developed in the next chapter, was first formulated and analyzed by Donald R. Hodgman in his pioneering study, *Commercial Bank Loan and Investment Policy*, Bureau of Economics and Business Research, University of Illinois, Champaign, 1963.

million at the end of 1966.³ Banks in the \$40-\$60 million asset class were requested to supply 40 customer profiles; those in the \$80-\$120 million asset class were asked for 60 customer profiles; and banks in the \$200-\$400 million class were asked for 80 customer profiles. Replies were received from 160 banks with data covering approximately 8,500 customers.⁴ The responding banks include the three classes of branching restrictions and have a large variance in market size and measured concentration of deposits.

The asset size range of banks included in the sample was chosen with the study in mind. It is believed that if market structure does influence performance, the relationship would be most evident and easily measured in the prices paid by customers in banks of these sizes. The pricing decisions of smaller banks would be expected to contain such a large amount of nonsystematic elements that the noise level would make valid measurement very difficult. On the other hand, larger banks, because they operate in a national market, have a substantial portion of their business transactions subjected to competitive forces outside of their local bank market. Hence, data from these banks would, in the main, not reflect the local market conditions that this study attempts to isolate.

In Chapter 3, the parameters of two basic models, one with loan price and the other with deposit balances as the dependent variable, are estimated. The main emphasis of the chapter is on the analysis and interpretation of the parameter estimates of the structural variables; whether these variables are statistically significant and, if they are, upon their signs and sizes. This analysis leads to conclusions, in the fourth chapter, about the quantitative importance of differences in bank market structure and the direction of influence on the level of bank prices.

³ The questionnaire is reproduced as Appendix A.

⁴ The location and class size of responding banks and a description of the questions and responses to the questionnaire are included in Appendix B.