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First published: September 1977

<https://doi.org/10.1111/j.1540-6261.1977.tb03324.x>

Citations: 1,004

INPUTS, OUTPUTS, AND A THEORY OF PRODUCTION AND COST AT DEPOSITORY FINANCIAL INSTITUTIONS

C. W. SEALEY, JR. AND JAMES T. LINDLEY*

I. INTRODUCTION

THE TOOL OF ANALYSIS most often applied to the behavior of financial institutions has been portfolio theory. The inadequacy of this approach stems from the total omission of production and cost constraints under which financial firms operate, and thus the role of these constraints in determining the equilibrium output mix and the scale size of the financial firm. Although various studies have proposed to describe the operations of the financial firm (mostly commercial banks) by utilizing the concepts of the theory of the firm, thus correcting the deficiencies of portfolio analysis, they have not been completely successful in developing an adequate model of the banking or other financial firm [3; 16; 17; 19; 27].¹

The lack of success of previous studies in developing a positive theory of the financial firm can be attributed to the incomplete application of the essential elements of the theory of the firm to financial institutions. Specifically, previous writers have failed to: (1) appropriately classify outputs and inputs of the financial firm by failing to consider the criteria on which the financial firm makes economic decisions, and (2) analyze the technical aspects of production and cost for the financial firm. The purpose of this paper is to develop a model within which the role of production and cost can be analyzed and the behavior of the financial firm understood within the context of a profit maximizing producer rather than, as viewed from the portfolio approach, as a rational investor. The analysis presented in this paper shows the following: (1) contrary to existing literature, in order to develop a positive theory of price and output decisions of the financial firm, explicit concepts of outputs and inputs of the financial firm must be developed and these concepts must be consistent with the criteria on which the firm's economic decisions are made; (2) by carefully analyzing the technical aspects of the financial firm's production process, a model of financial firm behavior can be developed which is consistent with the theory of the firm; (3) in contrast to the traditional firm, the technical production conditions facing the financial firm result in optimality conditions where the marginal revenue products do not, in general, equal the

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1. The model developed in this paper deals with depository financial firms, however, it could be adapted to non-depository financial firms with only slight modification, if one so desired. Depository financial institutions have a distinguishing characteristic in common in that a large portion of their costs are incurred in providing services to depositors as partial payment for the use of funds. This is not a characteristic, for example, of "finance companies."



1 David A. Alhadeff. Barriers to Bank Entry. *Southern Economic Journal*, XL (April 1974), 589-603.

[Google Scholar](#)

2 David A. Alhadeff and Charlotte P. Alhadeff. An Integrated Model for Commercial Banks. *Journal of Finance*, XII (March 1957), 24-43.

[Google Scholar](#)

3 Frederick W. Bell and Neil B. Murphy. *Costs in Commercial Banking: A Quantitative Analysis of Bank Behavior And Its Relation to Bank Regulation*, Research Report No. 41. Boston: Federal Reserve Bank of Boston, 1968.

[Google Scholar](#)

4 Frederick W. Bell. *Economies of Scale in Commercial Banking*. Boston: Federal Reserve Bank of Boston, 1967.

[Google Scholar](#)

5 Frederick W. Bell. Economies of Scale and Division of Labor in Commercial Banking. *Southern Economic Journal*, XXXV (October 1968), 131-139.

[Google Scholar](#)

6 George J. Benston. Economies of Scale of Financial Institutions. *Journal of Money Credit and Banking*, IV (May 1972), 312-341.

[Google Scholar](#)

7 George J. Benston. Economies of Scale and Marginal Cost in Banking Operations. *National Banking Review*, II (September 1964), 507-549.

[Google Scholar](#)

8 C. E. Ferguson. *The Neoclassical Theory of Production and Distribution*. Cambridge: Cambridge University Press, 1969.

[Google Scholar](#)

9 Ragnar, Frisch. *Theory of Production*. Chicago: Rand McNally and Company, 1965.

[Google Scholar](#)

10 Nicholas Georgescu-Roegen. Fixed Coefficients of Production and the Marginal Productivity Theory. *Review of Economic Studies*, III (1935), 40–49.

[Google Scholar](#)

11 Stewart I. Greenbaum. A Study of Bank Cost. *The National Banking Review*, IV (June 1967), 415–434.

[Google Scholar](#)

12 Josef, Hadar. *Mathematical Theory of Economic Behavior*. Reading, Mass.: Addison-Wesley Publishing Company, 1971.

[Google Scholar](#)

13 Donald R. Hodgman. Alternative Measures of the Real Output and Productivity of Commercial Banks—Discussion. *Production and Productivity in the Service Industries*. edited by R. Fuchs Victor. New York: Columbia University Press, 1969, 189–195.

[Google Scholar](#)

14 Paul M. Horvitz. Economies of Scale in Banking. *Private Financial Institutions Commission on Money and Credit*. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1964, 1–54.

[Google Scholar](#)

15 Nicholas, Kaldor. Limitational Factors and the Elasticity of Substitution. *Review of Economic Studies*, IV (1937), 163–65.

[Google Scholar](#)

16 John H. Karaken. Commercial Banks and the Supply of Money, A Market Determined Demand Deposit Rate. *Federal Reserve Bulletin*, LIII (October 1967), 1699–1712.

[Google Scholar](#)

17 Michael A. Klein. A Theory of the Banking Firm. *Journal of Money Credit and Banking*, III (May 1971), 205–218.

[Google Scholar](#)

18 W. F. Mackara. What Do Banks Produce *Monthly Review*, Federal Reserve Bank of Atlanta, LX (May 1975), 70–74.

[Google Scholar](#)

19 Boris P. Pesek. Bank's Supply Function and the Equilibrium Quantity of Money. *The Canadian Journal of Economics*, III (August 1970), 357–385.

[Google Scholar](#)

20 John Anthony Powers. Branch Versus Unit Banking: Bank Output and Cost Economies. *Southern Economic Journal*, XXXVI (July 1969), 153–170.

[Google Scholar](#)

21 John J. Pringle. A Theory of the Banking Firm. *Journal of Money Credit and Banking*, V (November 1973), 990–996.

[Google Scholar](#)

22 David H. Pyle. On the Theory of Financial Intermediation. *Journal of Finance*, XXVI (June 1971), 737–747.

[Google Scholar](#)

23 Paul A. Samuelson. *Foundations of Economic Analysis*, New York: Atheneum, 1965.

[Google Scholar](#)

24 Stuart A. Schweitzer. Economies of Scale and Holding Company Affiliation in Banking. *Southern Economic Journal*, XXXIX (October 1972), 258–266.

[Google Scholar](#)

25 Paul, Smith. Cost of Providing Consumer Credit: A Study of Four Major Types of Financial Institutions. *Journal of Finance*, XVII (September 1962), 476–496.

[Google Scholar](#)

26 Arthur, Smithies. The Boundaries of the Production Function and the Utility Function," in *Explorations in Economics*, New York: McGraw-Hill Book Co., 1936, 326–335.

[Google Scholar](#)

27 Richard E. Towey. Money Creation and the Theory of the Banking Firm. *Journal of Finance*, XXIX (March 1974), 57–72.

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