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THE RELATION OF COST TO OUTPUT FOR A LEATHER BELT SHOP

BY JOEL DEAN

WITH A MEMORANDUM ON EMPIRICAL COST STUDIES BY

C. REINOLD NOYES

TECHNICAL PAPER

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The Relation of Cost to Output for a Leather Belt Shop

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With a Memorandum on Certain Problems in the Empirical Study of Costs

by C. Reinold Noyes

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It is a pleasure to acknowledge the contributions of Phyllis van Dyk, who was of major assistance both in conducting the investigation and in preparing the manuscript, and of Mary Hilton Wise and Robert Warren James, who made many useful suggestions and assisted materially in subsequent revisions. I am particularly grateful to the firm's president, whose public spirited interest in economic science made this study possible. Helpful comments were also made by the following persons who were kind enough to read the manuscript: Moses Abramovitz, Martha Anderson, Arthur F. Burns, W. L. Crum, Solomon Fabricant, Milton Friedman, R. W. James, Roy W. Jastram, Frederick C. Mills, John Smith, Gerhard Tintner, Jacob Viner, and Theodore O. Yntema. The Cowles Commission and the Social Science Research Committee of the University of Chicago, as well as the National Bureau of Economic Research, contributed to the financial support of this project.

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Preface

THIS paper is the second in a series of technical publications primarily of interest to economists and statisticians though concerned with questions that have significance for a broader group. The investigation on which it reports, one of several concerned with the relation between output and cost, was initiated when Mr. Dean was a Carnegie Research Associate at the National Bureau and also served as executive secretary of the Conference on Price Research. The studies are being completed by Mr. Dean as a member of the research staff of the Cowles Commission at the University of Chicago.

How can the influence on costs of variations in rate of plant utilization be separated from other influences that simultaneously affect costs? In other words, how can we approximate statistically the short run cost function? The effect on costs of variations in the rate of output is of great moment to business management and is central to the economic explanation of price and output decisions. Economic theory has been content with a perfectly general statement embracing every possible cost-output relation, though probably most business firms proceed on very rough estimates of the way cost varies with changes in output. Many studies of the sort Mr. Dean has projected, covering firms in different areas and subjected to various operating conditions, might make it possible for both business management and the economic observer to narrow and refine their judgments regarding cost-output relationships.

This study is a model of the way in which significant economic relationships may be derived from the accounting and operating data of a business firm. The situation under investigation was, it is true, relatively simple and the material at hand was peculiarly favorable for the author's purpose. The techniques here used, and at present available, are not so well suited to deal with the more complicated problems of a multi-product firm with changing methods of production. Nevertheless many firms are equally well adapted to such studies, which will clarify considerably our ideas on some of the relationships fundamental to economic analysis.

The Conference welcomes the memorandum prepared by C. Reinold Noyes, the National Bureau Director representing the American Economic Association, as an illuminating discussion of the problem of cost determination in both its theoretical and empirical aspects and as a stimulus to a reconsideration of traditional cost concepts.

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Chairman, Conference on Price Research