

CES Production Function - A Review of Recent Literature

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1. INTRODUCTION

In economic theory measuring the elasticity of substitution, i.e., to what extent the various factors of production can be substituted for each other in the productive process has been a very important issue. Prior to 1961 applied production function studies dealt almost exclusively with functional forms which assumed specific numerical values for the elasticity of substitution parameter, (σ). The Cobb-Douglas function implies unitary elasticity, while the Leontief fixed coefficient model and "the straight line isoquant" production function indicate the values of σ zero and infinite respectively. Since the publication of the famous 1961 ACMS paper research in the field of C.E.S. production function - both of theoretical and empirical nature - is being continued.

More than a decade ago Nerlove (1967) made an excellent survey of the empirical studies done on C.E.S. production. After analyzing in great detail the different problems¹ that arose in the econometric work and on the basis of the findings on the elasticity of substitution, he found "the diversity of results". "Even slight variations in the period or concepts tend to produce drastically different estimates of the elasticity. While there seems little rhyme or reason for most of these, a number of possible sources of bias exist and may account for at least some of the discrepancies. (Nerlove, 1967).

During the last ten years or so, further research in this area has been carried out in the U.S.A. and other countries. Interesting, sometimes controversial and conflicting, results on different parameters have been found. New light has been thrown on the various issues.

Nadiri (1978) has covered some of the theoretical issues in his recent paper. Jorgenson (1974) has reviewed some of the empirical work, but he has confined himself to the U.S.A. studies. The main objective of the present paper is to survey the recent empirical studies on C.E.S. production function presenting a critical over-view of the estimates of the