

## Translog Production Function - A Review of Literature

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Over the last fifty years an extensive amount of literature has developed centering around the theory of production. Earlier research work in this area concentrated largely on a few specific functional forms for the production relationship, the two most popular being the Cobb-Douglas and CES models (Cobb-Douglas (1928) and Arrow and others (1961)). The CES form has shown considerable flexibility in modelling the technology for a firm producing a single output using two inputs. But it appears to be highly restrictive in case of more than one product or more than two factors of productions as shown by Uzawa and McFadden (Uzawa (1962), McFadden (1963)). In the context of several inputs, this implies that the partial elasticities of substitution between a pair of inputs are equal and the possibility of complementarity between any pair of factors is ruled out. There is another property of the CES and Cobb-Douglas functional forms - property of "self-duality", which implies that both the production and cost functions belong to the same group of functional forms. Hence one has the freedom of choice of the technology either by a CES production function or by a CES cost function since both the forms include the same maintained hypothesis.

Recently, several functional forms have been proposed which avoid these restrictions (Christensen and others (1973), and Diewert (1971)). Here the technology shows an arbitrary set of partial elasticities of substitution between pairs of inputs at a given point in input price or quantity space. These forms are, therefore, flexible. We can also test important maintained hypotheses of previous work. The object of the present paper is to review the literature on one of these functional forms : the transcendental logarithmic functional form or in short, translog production function, proposed by Christensen, Jorgenson and Lau (1973).

The paper is organized as follows: Section 1 presents, in brief, the translog production function and its properties. Section 2 will deal with the empirical studies. In Section 3 we shall discuss problem of inherent inconsistencies in the translog function as revealed by few