

Estimating Effects of Input and Output Prices on Inputs Demand in Punjab Agriculture— A Profit Function Approach.

Chand Ramesh

INTRODUCTION

Increased use of inputs allows agricultural sector to move up along production surface by increasing yield per unit area. Their utilization also induces an upward shift in the production function to the extent the technological change is embodied in them. Given the technology, input and output prices determine the quantities of various inputs allocated among different crops. Reliable empirical knowledge of factors effecting the use of inputs is prerequisite for formulation of agricultural price policy and policies regarding factor employment. In this context this study was undertaken (i) to estimate the systems of input demand equations for major crops of Punjab; (ii) to compare the inter and intercrop effects of changes in input-output prices and some other exogenous variables in input use; (iii) to study the effects of price changes on growth of input demand.

MODEL AND ANALYTICAL PROCEDURE

Use of profit function rather than production function for estimating effects of price and non-price variables on input demand has several advantages. In profit function formulation prices of variable inputs rather than their quantities are used as explanatory variables. The advantages of this are that the theory can be formulated directly in terms of causal economic relation that is presumed to hold intervening steps in traditional production theory. Lau and Yotopoulos (1972) and Sidhu and Baanante (1974) have empirically established the superiority of profit function approach over production function approach in studying the technology and behaviour of firm. In this study profit function approach was used to jointly estimate the factor demand equations and profit function. In deciding upon the functional form of profit function the primary consideration was to choose flexible functional forms. In flexible form the estimates of elasticities of factor demand are free to assume any value as dictated by the data. On the other hand, the restrictive forms such as Cobb Douglas profit function always implies that (i) own price elasticity of factor