



Estimating the CES Production Function for the Indian Textile Sector

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Abstract

This study estimates the efficiency parameter, factor shares in output, returns to scale, the elasticity of input substitution, etc. of the Indian textile sector. For this purpose, the study uses the standard non-linear two-input Constant Elasticity of Substitution (CES) production framework with the India-KLEMS time series data (1981-2017) sourced from the Reserve Bank of India. The results of the study show that this sector experienced an improvement in efficiency over the study period. Also, it suggests that the impacts of labour and capital inputs on the textile output are not similar. The elasticity of substitution estimated as 15.9 implies that this sector observed the increasing returns to scale over the study period. The fitted model reveals that most of the variation in the textile output is explained by the labour and capital inputs, and the overall performance of the model seems correct; but, it, being a two-input production framework, ignores the role of intermediate inputs, specifically the energy, which is essentially a complement input of capital equipment. However, extremely-low value of the sum of the square of residuals (i.e., 0.3039) in the model implicitly ensures that the exclusion of energy as input should not be a result deviating problem. This information derived from the study has several policy implications. It may guide us in projecting the manpower-requirements for the better future of this industry and the functional distribution of output in the industry.

Keywords: Capital-labour substitution, elasticity of substitution, CES production function, textile sector.