

ABSTRACT

**PARAMETER ESTIMATION
OF THE CONSTANT ELASTICITY OF SUBSTITUTIONS (CES)
PRODUCTION MODEL WITH NONLINEAR LEAST SQUARE METHOD**

By

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Constant Elasticity of Substitutions (CES) production model is one of nonlinear model intrinsically nonlinear. The aim of parameters estimation is to get parameters value of CES production model. Parameters estimation of the CES production model use nonlinear least square method. In nonlinear least square method, if the sum square of error are minimum it will get the normal equations.

The result of this study get the equations which is cannot be solved analytically. So that iterative methods are necessary. This study are using Newton Rapshon method in SAS. Newton Rapshon method need Starting Value. If not sure about the starting values, it can use a grid by offering SAS more than one starting value. It will calculate the initial residual sum of squares for all combinations of starting values and start the iterations with the best set. The values of parameter with least sum of square are starting values.

Keywords : *Nonlinear model, CES, Constant Elasticity of Substitutions, Newton Rapshon, Nonlinear least square method, SAS.*