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OPTIMAL CAPITAL AND LABOR INVESTMENT IN PRICE REGULATED STATE ECONOMIC SERVICE ENTERPRISES

Abstract:

Investment behavior of a price regulated service firm facing fluctuating demand is investigated with a Cobb-Douglas type of production function using optimal control theoretic model. Both machinery and labor are assumed to be capital goods. Rates of change of demand, attrition rate of labor and the depreciation rate of capital are the primary parameters determining optimal investment behavior. Switching times between four phases of investment where (1) both labor and capital investment are positive, (2) capital investment is zero but labor investment is positive, (3) capital investment is zero but labor investment is positive and (4) where both investments are zero are identified. The same analysis is repeated using Constant Elasticity of Substitution (CES) type of production function.

Keywords:

Optimal Control Theory, Investment, Service Companies

JEL Classification: C61