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Vicente Salas-Fumás, Carlos Sáenz-Royo

PII: S0925-5273(14)00181-9
DOI: http://dx.doi.org/10.1016/j.ijpe.2014.05.018
Reference: PROECO5783

To appear in: *Int. J. Production Economics*

Received date: 8 March 2013
Revised date: 8 February 2014
Accepted date: 23 May 2014

Cite this article as: Vicente Salas-Fumás, Carlos Sáenz-Royo, Long- and short-term efficiency in an automobile factory: An Econometric Case Study, *Int. J. Production Economics,* http://dx.doi.org/10.1016/j.ijpe.2014.05.018

Long- and Short-Term Efficiency in an Automobile Factory: An Econometric Case Study[1]

Vicente Salas-Fumás

University of Zaragoza

Carlos Sáenz-Royo*

Centro Universitario de la Defensa

Abstract

This paper models the production technology of an automobile assembly plant as an integrated long- and short-term relationship between inputs, labor and capital, and output, number of monthly assembled units. The parameters of the production function, elasticity of output to labor and capital, and the growth rate in total factor productivity (TFP), are estimated using the Error Correction Mechanism (ECR). The paper compares the TFP and the inverse of the hours per vehicle (HPV), the standard measure of productivity used in the industry, as indicators of operating efficiency of a production unit. The empirical application also highlights the potentialities of the ECM in insider and case study econometrics research, especially when the observed output and inputs of a production process deviate from the production technological frontier due to anticipated and unanticipated perturbations in the operations.

Keywords

Automobile assembly plant, Total factor productivity, ECM, Case study econometrics

1. Introduction

[1] The authors thank two anonymous referees and the Journal Editor for their comments on an earlier version of the paper. They also acknowledge the financial support from the project ECO2010-21393-C04-04, MICINN, and CREVALOR.