

Assessing Efficiency Trends in the Indian Sugar Industry

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Abstract : This paper measures technical and scale efficiencies of 40 Indian sugar companies for the period from 2004-05 to 2013-14. The efficiencies are estimated through input-oriented DEA models using one output variable—value of output (VOP) and five input variables—capital cost (CA), employee cost (EMP), raw material (RW), energy & fuel (E&F) and other manufacturing expenses (OME). The sugar companies are classified into integrated and non-integrated categories to know which one achieves higher level of efficiency. Sources of inefficiency in the industry are identified through decomposing the overall technical efficiency (TE) into pure technical efficiency (PTE) and scale efficiency (SE). The paper also estimates input-reduction targets for relatively inefficient companies and suggests measures to improve their efficiency level. The findings reveal that the TE does not evince any trend rather it shows fluctuations across years, largely due to erratic and cyclical pattern of sugar production. Further, technical inefficiency in the industry seems to be driven more by the managerial inefficiency than the scale inefficiency, which implies that TE can be improved through better conversion of inputs into output.

Keywords : DEA, slacks, sugar industry, technical efficiency

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