عنوان مقاله:

Malmquist Productivity Index under Fuzzy Environment

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خلاصه مقاله:

The integration of data envelopment analysis (DEA) approach and Malmquist productivity index (MPI) is one of the popular and powerful techniques in order to calculate of changes in productivity of homogeneous decision making units (DMUs) over different time periods. In this paper, an extended Malmquist productivity index will be presented that is capable to be employed in the presence of fuzzy data and linguistic variables. It should be noted that possibilistic programming (PP) as well as chance-constrained programming (CCP) approaches are applied to handle data ambiguity. The implementation of the proposed fuzzy Malmquist productivity index (FMPI) is illustrated by a numerical example under triangular fuzzy data. Finally, the results show the applicability and efficacy of the extended MPI to calculate the changes of productivity of DMUs under fuzzy environment.

کلمات کلیدی:

Malmquist Productivity Index, Data envelopment analysis, Possibilistic Programming, fuzzy data

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