TITLE: THE IDENTIFICATION OF KEY SECTORS BY MEANS OF DATA ENVELOPMENT ANALYSIS (DEA): THE CASE OF EU-27

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ABSTRACT:

Standard input-output analysis generally takes the Leontief and the Ghosh inverses to provide, respectively, backward and forward multipliers for multiple dimensions (output, income.) as a starting point to identify key sectors in an economy. Then, it is difficult to say whether a sector is crucial for all dimensions (or most of all). Alternatively, hypothetical extraction methods have recently challenged the standard tools by providing the overall impact on the economy (without distinction between backward and forward effects) of the extraction of one single sector, only in terms of one dimension (i.e. production) but unfortunately not in terms of others (i.e. income, employment.). Anyhow, the identification of key sectors made in one way or another depends highly on a threshold defined most frequently (and arbitrarily) by the arithmetic mean of the values obtained, which, to a great extent, is sensitive to outliers. Therefore, rigid and robustless classifications come out from usual key sector analysis. In order to circumvent these controversial issues and thus find a more robust way to identify key sectors in an economy, this paper contributes to the literature by adding a more flexible approach (DEA) based on efficiency terms. We propose to use a single "key value" for the identification of key sectors that summarizes the (backward and forward) potential increases of multiple dimensions (production, income and employment, etc). Hence, our approach is independent from the quite often criticized methods for identifying key sectors. The empirical work is carried out for the 27 European Union economies.