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PRESS RELEASE

Indirect effects - A formal definition and degrees of dependency as an alternative to technical coefficients

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This paper describes, in a technical way, a method of calculating the indirect effects produced by an industrial sector; i.e. effects that are generated by the industry in the supply sectors.

Traditionally, such indirect effects are calculated by means of technical coefficients from the input-output analysis. This latter method, however, studies the impact of a change in final demand, which means that indirect effects can be calculated only for industrial sectors that produce goods for end users.

In this working paper, this restriction is overcome by re-defining the concept of “indirect effect”. The new definition reflects the potential effect that would be produced by a dislocation of the industrial sector.
As well as a technical definition of those indirect effects, a new calculation method is also presented which takes as its basis the dependency ratios.

It is demonstrated that the technical coefficient method and the dependency ratio method will, subject to certain conditions (the availability of a recent input-output table), produce identical results.
If no recent input-output table is available, the two methods will produce different results. The “best” result depends on the stability of the technical coefficients and of the dependency ratios.

It is generally assumed that the technical coefficients are fairly constant. Nevertheless, it can be demonstrated that in a number of specific cases (outsourcing, aggregation and productivity increases) the dependency ratios deliver better results.
Moreover, the dependency ratios, which indicate the extent to which one industrial sector is dependent upon another, are better suited to investigating the impact of a dislocation.

Since the availability of a recent input-output table is crucial to the calculations, the paper also demonstrates how, if no such table is available, an acceptable input-output table based on a supply and use table can be produced relatively easily and quickly.

Finally, the theoretical results are tested against concrete data. The two methods deliver similar results as regards indirect effects.

Indirect effects calculated on the basis of an input-output table derived from a supply and use table overestimate the results calculated on the basis of the National Accounts Institute’s input-output table. This is primarily because of the distribution of imported goods among the various intermediary industrial sectors and across ultimate demand.

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