

The Role of Relative Price Changes and the Structural Decomposition Analysis of the Brazilian Economy from 2000 to 2015

Topic: Structural decomposition

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The paper aims to evaluate the effect of relative prices changes in structural decomposition analysis in the context of economies such as the Brazilian one in which these changes can be significant. Using an Input-Output updating methodology, we created a series of I-O matrices for the Brazilian economy from 2000 to 2015. The sources of information used in the updating process were the structural characteristics of official 2010 I-O matrix and the partial information for the totals available from the annual supply and use tables at current and last year prices. As a result, we obtained a series of I-O matrices valued at current and last year prices, which allowed us to obtain price and volume indices for each cell of these matrices. The latter indices were used to obtain a series of constant prices I-O matrices. However, the volume figures obtained in this way (i.e., by the use of chained indices) are characterized by the well-known problem of non-additivity. In order to overcome the latter problem in structural decomposition analysis we used the method adopted by Hillinger, Reich, Balk and Diewert to address the non-additivity problem. In our specific application of the method, we deflated the whole series of estimated matrices at current and last year prices by the price index of total gross-output. Then, we isolated the contribution of relative price changes and obtained a more accurate assessment of the real contributions of the factors involved in the gross-output structural decomposition exercise. Comparing the latter contributions to the ones obtained without the isolation of relative price changes, we were able to evaluate the effect of relative price changes. Our investigation revealed that relative price changes have indeed a relatively significant effect on the results of the structural decomposition exercise for the period consider