

New Application of RAS Structural Decomposition Approach in the Regional Economies of China, 2002-2007

Topic: Structural change and dynamics 4

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The RAS structural decomposition approach is used to analyze the effects of technological change, which may be split up into its components: average substitution, average intermediate input intensity and cell-specific effects. However, it has never been implemented in examining the roles that different kinds of technological effects play at regional level. On the basis of the decomposition of gross output which is just chosen as a means to the end of the analysis of results, new application of RAS method addressed in this paper focuses on analyzing the influence that each kind of technological effects exert between regions, in order to investigate their relationship and find out the main underlying force for technological effects over time and across regions. The empirical realization is provided by reference to a series of regional input-output tables for a 30-region division of the Chinese economy (2002-2007). For every two regions, the RAS decomposition is applied in both directions in which we can get the percentages that every kind of technological effects account for the difference in gross outputs between regions. Empirical study of technological effects concentrates on three aspects: frequency distribution, areal distribution and changes over time. By applying the RAS decomposition to regional input-output tables of China, this paper aims to find out some rules, draw some valuable conclusions, and provide a foundation for exploring economic explanations.

Keywords: technological change; RAS method; regional input-output tables