Expanding the geographical coverage of OECD's TiVA database to include more developing countries – recent experiences

Topic: Methodological and Statistical Challenges for Analyses of Integration of Developing Countries in Regional and Global Value Chains - I
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This paper provides an overview of the experience gained during the recent expansion of the OECD's Inter-Country Input-Output (ICIO) and Trade in Value Added (TiVA) databases during which ten more developing countries were added in response to the emergence of non-G20 and non-OECD economies in recent decades. The increasing importance of developing economies in the global economy is reflected by their increased shares in GDP, trade flows, number of households, and population. According to the UN National Accounts Main Aggregate database, the sum of GDP shares of non-G20 and non-OECD economies increased from 7% in 1995 to 11% in the early 2020s. Moreover, the exports of goods and services from these economies now account for about 20% of global trade flows.

The latest edition of the TiVA database includes 76 countries, ten more than the previous edition. The expansion added five African countries, two South Asian countries, and two Eastern European countries. Inclusion of the most populous countries with populations of over 100 million, namely Pakistan, Nigeria, Bangladesh, and Egypt, enables the Input-Output model to be used to derive more robust indicators, particularly regarding carbon footprints and food security issues.

To be included in the TiVA database, OECD has defined ideal and minimum requirements of available national statistics required for inclusion in the underlying ICIO tables. No country meets the ideal requirements (e.g. time-series of Supply and Use Tables from the mid-1990s, consistent with latest 2008 SNA time series and with the necessary level of industry and product disaggregation; and, detailed bilateral trade in goods and services statistics) although some countries come relatively close. With an eye on the minimum requirements, the first step was to compile published national statistics and review their coverage and quality, digesting the format and classification systems used in each data source, detection of outliers, and harmonising national format to the standard format used as an input to ICIO construction. Where appropriate, notably during 'formal' projects, a statistical assessment report was produced and shared with the relevant national statistics providers. Bilateral online and in-person meetings were then held with national statisticians, consultants and other stakeholders to discuss best practices; availability of unpublished statistics that could be shared; and, determine improvements that could be made to national statistics, and the challenges faced, in the short- and medium-term, to improve the quality of TiVA indicators.

The participants in these statistical capacity building exercises included National Accounts and Supply-Use compilation teams at the national statistics offices, consultants for international organisations, Balance of Payments compilers at Central Banks, and merchandise trade statistics and Customs agencies or finance ministries. Examples of common issues facing statistical agencies in developing countries are 1) high turnover of staff members to retain institutional memory, 2) availability of survey results and administrative records in electronic format for earlier years, 3) unique classification formats of products and industry dimensions for certain years due to limited resources to conduct regular economic census surveys.

Increasing geographical coverage also involves a range of technical and methodological challenges when developing the ICIO tables. Decreasing the share of the "rest of the world" in the model

in principle improves the overall inter-industry linkages across countries. However, it increases the chance of starting the balancing procedures of intercountry flows with greater discrepancies in the model's initial values at the same time. Another technical challenge is that the increased number of target economies and extended years of coverage raises the processing, memory and storage pressures in the computing environment.

Once individual countries are included in the ICIO/TiVA framework, the industry and trade structures become fully comparable with other countries, and a suite of indicators becomes available. Despite the challenges of the underlying statistical preparations, further expansion of country coverage is essential to derive more reliable indicators for regional value chains under the evolution of trade agreements with neighbouring economies.