Building AfCIOT and TiVA Indicators in Africa in Support of AfCFTA

Topic: Methodological and Statistical Challenges for Analyses of Integration of Developing Countries in Regional and Global Value Chains - I
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A key part of transforming Africa over the next decade is trade. The signature of the African Continental Free Trade Area (AfCFTA) agreement constitutes an expression of interest from African countries in boosting intra-African trade and increasing participation in Global Value Chains (GVCs). For Africa to maximize the benefit of this, the focus should be on developing an integrated, complementary, and strengthened African value chain. Trade in Value Added (TiVA) provides new statistical insights useful for tracking the progress toward this goal and helps evaluate industries for countries' specialization and industrialization policies.

While the inter-country input-output (ICIO) tables and sets of TiVA indicators developed by the OECD have been recognized as the best practices, only three of the 54 African economies are included in the global database (Morocco, South Africa, and Tunisia). Africa is also the only region that has no ICIO yet. Nonetheless, 63% of African countries already compile SUTs, which represents an opportunity for building a continental ICIO.

The African Continental Input-Output Table (AfCIOT) is a product in development that results from a partnership between WTO, OECD, and UNECA. Its strength lies in the dedicated capacity and expertise to access updated SUTs and national accounts from National Statistical Offices (NSOs), conduct research, and fill data gaps within the specificities of the African context. AfCIOT currently incorporates data from 15 countries and the rest of the world, while the target is the entire continent.

Statistical and methodological challenges surround the low quality and availability of underlying data. Timing, quality, and detail of SUTs and external data availability vary significantly between countries. The accuracy of trade and economic flows is low; large informal markets exist; there is a lack of digital capturing of many market transactions; and data regarding trade in services is hard to find if not non-existent. In developing the AfCIOT we are trying to solve these with innovative econometric calibration methods and modern data science techniques.

For now, various assumptions and estimation techniques to standardize and integrate African SUTs have been made and applied in building AfCIOT, such as:
• Use of data science techniques to make correspondence between local definitions and international industry and product classifications.
• Simple arithmetic addition and division to standardize Member States' SUTs.
• Model D fixed sales assumption to transform SUT to IOT.
• Use of the supply table at basic prices and use proportions to construct the use table at basic prices.
• Accepted estimation strategy for distributing imports to construct the imports use table.
• An uplift based on GVA by industry to convert the SUTs to dollars and the same years.
• For the Rest of the World, we have started to incorporate the major trading partners of Africa, such as the USA and China.

This is at the very early stage of building AfCIOT. Efforts are made on two fronts: On one hand, we will learn and adopt all the best practices by other experts in model building to set up the framework and testify that the goal is achievable. On the other hand, we will work closely with the Member

States in a phased approach to strengthen the quality and timely availability of the required key macroeconomic data, such as SUTs, national accounts, and external trade statistics, which will, in turn, improve the quality and accuracy of the input data and resulting outcomes of AfCIOT.