INT CGE MODEL DATABASE UPDATE: 2011

Integration and Trade Sector (INT)

Vice Presidency of Sectors and Knowledge (VPS)

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In line with the updates and improvements of the INT CGE model proper, model database is also updated in several ways. First and the foremost, the Social Accounting Matrix (SAM), which presents the snapshot of the economy, is fully updated for the model base year (2008). Various official statistics and sources are used in this process. The major sources for the macroeconomic data include: the World Development Indicators (World Bank) for GDP; COMTRADE for trade flows; Government Finance Statistics (IMF) for government fiscal data; International Financial Statistics for current account and fiscal; LABSTA for labor force and employment; Country Reports (Economic Intelligence Unit); and relevant country data from the authorities in the region. Besides, household survey data for the most recent study on commodity price volatility in Latin America is also elaborated. In the meantime, GTAP database version 7 with the base year 2007 is also used as a reference for intermediate transactions and to estimate the sectoral components such as final demand (private consumption, government and investment demands) as well as various taxes (output, value added, consumption). Below the database updates are outlined.

For the recent studies on transport costs and infrastructure in Latin America, SAMs for model database are fully updated for the base year 2008. Out of 20 countries and regions in the models, 12 individual countries in Latin America are identified. The SAM update process is as follows. On both studies, accurate estimates of trade transport costs in Latin America are the critical elements. Following the methodological concept of transport costs measured as the import freight expenditures used by Moreira, Volpe and Blyde (2008), exports at the port of origin are estimated on the basis of the ad-valorem equivalents of transport costs for each sector on a bilateral basis within Latin America.

Using the GDP scale factors, other transaction components in the SAMs are first extrapolated to 2008 from the previous database with base year 2004. Then applying the RAS method, provisional SAMs for base year 2008 are constructed for each country in the model. Based on the macroeconomic statistics such as GDP, fiscal and current account as the constraints, provisional SAMs are rebalanced to match the respective macroeconomic indicators. Particular attentions are made on estimating labor income and employment, as the impact on factor returns

(wages and rents on capital as well as land) has a significant influence on the aggregate results and the sectoral outcomes in particular.

To decompose labor force by skills and to estimates labor income, four key databases are extensively used: (i) Labor force statistics (ILO): (ii) INT migration study (2010) based on Docquier and Marfouk (2004, 2005) and Docquier, Lowell and Marfouk, (2008); (iii) recent country studies in Andean countries (Colombia and Peru); and (iv) occupational wages around the World file developed by Freeman and Oostendorp (2000). Based on the ILO labor force statistics, the aggregate labor force is decomposed into three categories by skills, based on the INT migration study (2010). For the Andean countries (Colombia and Peru), household sample survey data are used to estimate the sectoral employment by skills. Following Docquier and Marfouk (2004, 2005) and Docquier, Lowell and Marfouk, (2008), labor force and sectoral employment in other countries are estimated. Based on the household survey data on wages for some countries and the study by Freeman and Oostendorp (2000), sectoral labor income by skills is provisionally estimated. Through the SAM balancing process by RAS method, labor income is readjusted to match to national statistics, thereby adjusting the sectoral labor force as well. All these processes ensure that SAM database 2008 is constructed to accommodate the most accurate data and underlying labor statistics available for each country in Latin America today. In addition, for the use of recursive dynamic models, labor force by skills is explicitly projected over the target year 2020.

For the moment, tariff updates in Latin America are in an interim progress. They are already updated for Colombia and Peru, but others are not yet. This is because (i) tariffs are already fairly low for most products in the region; (ii); the importance of tariffs as policy tools declines, as marginal gains seem to be relatively low; and (iii) there are no significant regional initiatives in this policy front. Nevertheless, based on the INTrade database, applied tariffs will be fully updated and included in the database.

For the ongoing study on commodity price volatility on poverty in Latin America, household survey data for 16 countries in the region based on MECOVI databank, which covers 586,700 households and 2.16 million individuals, is being extensively processed. This process is intended to construct high quality database for poverty analysis and to capture the labor-related datasets-employment, skills and wages-income generation process plus household consumption. Once these data processes are complete, they will be incorporated into the SAMs and reconciled with the macro-economic variables to match the national statistics. In the meantime, these new data will be used for upcoming policy studies to improve the quality for the vital socioeconomic statistics in Latin America.

References

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