SPECIAL REPORT

PEP-MPIA Network:
Cutting-Edge Development, Open-Source Dissemination, Timely Modelling Applications

MPIA economic modelling activities - training, support and innovation - stand out among the most widely acknowledged of PEP contributions to the advancement of research in development economics. In particular, PEP-MPIA lead researchers have devoted time and energy to offer the international modelling community a series of new reference models that allow more country-specific and extensive applications, including multiple periods, world-level database and international financial assets.

MPIA research and economic modelling

The Modelling and Policy Impact Analysis (MPIA) network assists developing country researchers in constructing models of their national economy to simulate the impact of macroeconomic shocks/policies on various dimensions of poverty and welfare. To do so, it applies a combination of macro-micro modelling and simulation techniques.

> The macroeconomic approach uses a Computable General Equilibrium (CGE) model to account for the structural aspects of a country's economy, i.e. the interactions among sectors and institutions, and their links with the global economy. The CGE framework is then combined to a micro-econometric behavioural model – based on information provided by national representative surveys - in order to assess the various impacts of structural movements on the country's individuals and households, in terms of welfare.

For some twenty years now, PEP-funded researchers have been successfully trained and supported in the use of such techniques. In recent years, however, MPIA leaders came to find that there was a need for reference models that were more elaborate and closer to real-life conditions than the ones that had been used so far. Moreover, they realized policymakers face new challenges that call for impact assessments that look both forward in time and beyond national boundaries to the global economy. And so, lead researchers of the MPIA network (Bernard Decaluwe, Andre Lemelin, Helene Maisonnave, Veronique Robichaud) have devoted time and energy to creating a series of new standard CGE models.

The growing family of PEP standard CGE models

The first of these models, PEP 1-1, designed for country-level studies, was developed as an operational tool for researchers to easily adapt a relatively standard model to their national economy. Building on this basic model, PEP 1-t was created to include evolution in time. Technically speaking, PEP 1-t is a «recursive dynamic» version of PEP 1-1 (which is a static, or single-period model): it extends the analysis to multiple periods, linking each one to the past through variables inherited from the previous period.

Since the beginning of 2011, no less than 3 new PEP standard CGE models have been put online. PEP-w-1 is a single-period WORLD model and PEP-w-t is its recursive dynamic version. These new models are calibrated on the Global Trade Analysis Project (GTAP) world-level data base. The latest innovation of the PEP-MPIA team is PEP-w-t-F, which is, to our knowledge, the only recursive dynamic world model that includes international financial assets*.

Free public access

All of these models are truly «open source»: free public access is available via the links below. Each model is fully documented and all the relevant programs are freely accessible. Better still, with the kind permission of GTAP, a 14-region, 4-commodity, aggregated database is also made available to calibrate the new world models.

PEP is proud to offer the international modelling community, models that are not only fully operational for applied studies, but also perfectly suitable for training. Indeed, the MPIA team has made painstaking efforts to produce documentation that is complete, including references to theoretical underpinnings and detailed mathematical developments that link model equations and calibration procedures with the theory.

For detailed information on each model and access to related tools and files, follow the links below:

PEP**-1-1 (SINGLE-COUNTRY, STATIC VERSION)**

Bernard Decaluwe, Andre Lemelin, Veronique Robichaud, Helene Maisonnave.

PEP**-1-т (SINGLE-COUNTRY, RECURSIVE DYNAMIC VERSION)**

Bernard Decaluwe, Andre Lemelin, Veronique Robichaud, Helene Maisonnave

PEP**-w-1 (MULTI-REGION, SINGLE-PERIOD WORLD MODEL)**

Andre Lemelin, Veronique Robichaud, Bernard Decaluwe and Helene Maisonnave

PEP**-w-т (MULTI-REGION, RECURSIVE DYNAMIC WORLD MODEL)**

Veronique Robichaud, Andre Lemelin, Bernard Decaluwe and Helene Maisonnave

PEP**-w-т-F (RECURSIVE DYNAMIC WORLD MODEL WITH INTERNATIONAL FINANCIAL ASSETS)**

Andre Lemelin, Veronique Robichaud, Bernard Decaluwe

*A video recording of a presentation on CGE models with international financial assets, given by co-authors (Bernard Decaluwé and André Lemelin) at Université de Pau et des pays de l'Adour (UPPA, France), is available here.