Workshop on Regional Economic Cooperation Database and Modeling

Computable General Equilibrium (CGE) Model Training

Urumqi, People's Republic of China 2–4 December 2015

Jointly Organized by:
Asian Development Bank
CAREC Institute

Background and Objective

Because of the complexities of today's economy, sophisticated research methods are needed to improve visibility for public and private sector decision makers. The state-of-the-art decision tool for evidence-based economic policy is the Calibrated or Computable General Equilibrium (CGE) model. This methodology has been applied in hundreds of studies for fiscal, sectoral, trade, and employment analysis around the world because it can trace structural adjustments across the economy, revealing linkage effects through market interactions and behavioral responses. Such linkages are an essential determinant of policy outcomes, where cumulative indirect effects of policies often outweigh direct effects.

The CGE approach also helps enhance public policy engagement because, while economic policy may be made from the top down, the economic consequences ultimately felt from the bottom up. Stakeholders must be identifiable and their interests assessed so beneficiaries can be recruited to support policies and the adjustment needs of others can be anticipated. CGE models, supported by detailed data, are designed to elucidate linkages and improve visibility for policy makers. These models capture detailed links between behavior, incentives, and policies, revealing how patterns of demand, supply, and resource use interact and change in response to external shocks and policy changes. For these reasons, scenario analysis with such models is useful or even necessary before policy and planning decisions are taken.

This course offers an introduction to the theory and practice of Regional and National Economic Assessment using Computable General Equilibrium (CGE) models. The course will combine theoretical and empirical material with the latest data and software resources, training participants to assess economy wide impacts and communicate their findings to effectively support evidence-based policy dialog. Upon completion of the course, participants will be familiar with state-of-the-art decision tools that can be used to assess the economic impacts of policy and external events within and across the CAREC economies.

The Global Trade Analysis Program (GTAP) has linked over 100 countries across a CGE based analysis network, supporting economic analysis by several thousand public and private researchers. Multilateral institutions (ADB, WB, IMF, FAO, etc.) and national

governments in particular have sponsored hundreds of CGE based assessments, including work on Central Asian trade, energy, and infrastructure investment.

Application of CGE models in CAREC context is straightforward: it can be used for policy impact analysis and forecasting domestically, and regionally, or linking to global markets. Examples include corridor-level economic impact analysis such as studies conducted on part of the Kazakhstan Europe-West China road corridor and the Pakistan North-South corridor. The seminal ADB paper on Asia's infrastructure investment needs employed CGE models as tool for evaluating potential economic benefits of investing $8 trillion in infrastructure across Asia during 2010-2020. The most recent example of employing CGE model tool is to evaluate potential impact of the Trans-Pacific Trade and Economic Pact (TPP), the agreement of which was reached only in October 2015.

Workshop Format

These objectives will be achieved through a combination of morning lectures outlining the underlying theory, and afternoon hands-on workshops providing opportunities to process data, carry out analyses, and present results in a supervised environment.

Workshop Materials and Prerequisites:

Because of the nature and technical contents, the Workshop requires that participants are familiar with economics and statistics, and prior experience with Microsoft Excel and basic computer programming are recommended.

Participants must each bring an individual MS Office equipped laptop (PC or Mac) to all sessions. All course content will be electronic and made available at no direct cost on the internet. Content will be hosted on a course website which will remain online after the course is finished to serve as a future reference. Participants will be given internet access during class. Other computer software and data will be made available electronically during the course

Timing and Place of the Workshop

The 3-day Workshop will be held during 2-4 December 2015 at CAREC Institute Headquarters in Urumqi, PRC.

For an outline of the Workshop, please see below.

Draft Annotated Program of the Workshop

Day 1: Overview [Wednesday December 2nd]

Introduction to data resources and the economics of climate risk assessment.

9:00 – Opening Session: **Welcoming remarks – ADB representative**
Welcoming remarks – CI representative

9:15 – 10:15 – *Lecture 1: Review syllabus and discussion of project*

10:15 – 10:30 - *Coffee Break*

10:30-12:00 - *Lecture 2: Overview of the Economic Impact Assessment*

12:00-13:00 - *Lunch*

13:00 – 14:30 - *Workshop 1: Introduction to Data Development and Analysis*

14:45 – 15:00 – *Coffee Break*

15:00 – 17:00 – *Workshop 2: Statistical Methods for Economic Assessment*

17:00 – *End of Day 1*

Day 2: Methodologies [Thursday December 3rd]

9:00 – 10:30 - *Lecture 3: Introduction to CGE Modeling*

10:30 – 10:45 – *Coffee Break*

10:45 – 12:00 – *Lecture 4: Overview of the CAREC Model*

12:00 – 13:00 - *Lunch*

13:00-14:45 - *Workshop 3: Scenario Development and Analysis*

14:45-15:00 – *Coffee Break*

15:00 – 16:30 - *Workshop 4: Presenting Results*

16:30 - *End of training*

Day 3: Applications [Friday December 4th]

9:00 – 10:30 - *Lecture 5: CAREC Regional Forecasting*

10:30 – 10:45 – *Coffee Break*

10:45 – 12:00 – *Lecture 6: National Forecasting*

12:00 – 13:00 - *Lunch*

13:00-14:45 - *Workshop 5: Example - CAREC Regional Integration*

14:45-15:00 – *Coffee Break*

15:00 – 16:30 - *Workshop 6: Example - National Trade Facilitation*

16:30 – 16:40 – Concluding remarks by ADB representative
Concluding remarks by CI representative

End of Workshop