

**ARTNeT Capacity Building Workshop for Trade Research:
Gravity Modeling**



**August 23-27, 2010
Bogor, Indonesia**

Venue: Faculty of Economics Department, and Business and
Management Graduate School
Bogor Agricultural University

Programme

Introduction

This workshop aims to provide participants with the following:

1. A solid understanding of the gravity model of bilateral trade, including its theoretical basis;
2. Practical skills in applying best practice gravity econometrics using the ARTNeT online gravity interface, and Stata;
3. An introduction to advanced gravity modeling techniques;
4. An appreciation of data and estimation issues involved in the use of gravity models in a range of applied trade policy topics.

In light of these objectives, the structure of the workshop will alternate between presentations by the trainers based on the existing literature, and “hands on” applications in which participants will be invited to explore concrete applications using real data. Empirical examples will focus on economies in the Asia-Pacific region, and on sectors of particular interest to them. In addition, participants will be required to work in groups to conduct an exercise tracing through all aspects of the gravity modeling process, from research design to presentation and interpretation of results.

Monday, 23 August 2010: The “Traditional” Gravity Model

08:45 – 09:00: *Registration*

09:00 – 09: 15: *Welcome remarks*

09:15 – 10:30: *Session 1*

- Introduction to the workshop and its objectives; overview of methods and approach.
- The stylized facts of gravity.

10:30-10:45: *Coffee Break*

10:45 -12:00: *Session 2*

- The traditional gravity model: form, estimation, and interpretation of results.
- Identifying above- and below-average trade relationships (“trade potentials”).

12:00-13:15: *Lunch Break*

13:15-14:30: Session 3

- Estimating the traditional gravity model using the ARTNeT online interface.
- Using the ARTNeT online gravity interface to assemble datasets for additional modeling.

14:30-14:45: *Coffee Break*

14:45-16:00: Session 4

Empirical exercise 1—Using the ARTNeT online gravity interface.

- Creation of datasets.
- Above- and below-average trade performance.
- Group 1: Trade facilitation and logistics.
- Group 2: Aid for Trade.

Tuesday 24 August 2010: The “New” Gravity Model

09:00 – 10:30: Session 1

- Overview of new, theory-based gravity models.

10:30-10:45: *Coffee Break*

10:45 -12:00: Session 2

- Estimating new gravity models using fixed and/or random effects, and interpreting results.

12:00-13:15: *Lunch Break*

13:15-14:30: Session 3

- Implementation of new gravity models in the ARTNeT online gravity interface and Stata.

14:30-14:45: *Coffee Break*

14:45-16:00: Session 4

- Empirical exercise 2—Using Stata
- Group 1: Production networking and parts/components trade.
- Group 2: Trade in services.

Wednesday 25 August 2010: Extensions to the Gravity Model

09:00 – 10:30: Session 1

- Performing counterfactual simulations with the gravity model.
- Empirical exercise 3—Counterfactuals.
 - Group 1: Trade facilitation and logistics.
 - Group 2: Air transport.

10:30-10:45: *Coffee Break*

10:45 -12:00: Session 2

- Creating gravity model indicators: aggregation of data using principal components analysis.

12:00-13:15: *Lunch Break*

13:15-14:30: Session 3

- Presentation of ESCAP / ARTNeT gravity research.

14:30-14:45: *Coffee Break*

14:45-16:00: Session 4

- Presentation of participant research papers or proposals.

Thursday 26 August 2010: Advanced Gravity Modeling

09:00 – 10:30: Session 1

- Modeling export diversification using gravity.

10:3-10:45: *Coffee Break*

10:45 -12:00: Session 2

- Empirical exercise 4—Export diversification.
 - Group 1: Trade facilitation and logistics.
 - Group 2: South-South vs. South-North trade.

12:00-13:00: *Lunch Break*

13:15-14:30: Session 3

- Reverse causality in the gravity model.

14:30-14:45: *Coffee Break*

14:45-16:00: Session 4

- Empirical exercise 5—Reverse causality.
 - Group 1: Trade facilitation and logistics.
 - Group 2: Air transport.

Friday 27 August 2010: Best Practice Gravity Modeling

09:00 – 10:30: Session 1

- Measuring trade costs using inverse gravity.
- Empirical exercise 6—Trade costs.
 - Group 1: Trade in goods.
 - Group 2: Trade in services.

10:30-10:45: *Coffee Break*

10:45 -12:00: Session 2

- Consolidation: Current best practice in gravity modeling.

13:15-14:30: Session 3

- Empirical exercise 7—Consolidation.
 - Group 1: Trade facilitation and logistics.
 - Group 2: Trade in services.
 - Group 3: South-South trade.
 - Group 4: Regional trade agreements.

14:45-16:00: Session 4

- Empirical exercise 7 (contd).
- Certificate distribution
- Closing.
