

ARTNeT- GIZ Capacity Building Workshop on Introduction to Gravity Modelling:
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Session 2: Introduction to the basic gravity model

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Introduction

- Gravity model is a very popular econometric model in international trade
- Origins with Tinbergen (1962). Thousands of published articles and working papers since then.
 - “Some of the clearest and most robust findings in empirical economics.” (Leamer & Levinsohn, 1995)
- The name came from its utilizing the gravitational force concept as an analogy to explain the volume of bilateral trade flows
- Initially, it was not based on theoretical model, but just intuition only
- Later on, a range of rigorous theoretical foundation has been given.

Introduction

- Gravity's main comparative advantage lies in its ability to use real data to assess the sensitivity of trade flows with respect to policy factors we are interested in.
- Numerous applications looking at different types of factors affecting trade costs, and their impacts on trade flows:
 - Transport costs.
 - Tariffs and non-tariff barriers.
 - Regional integration agreements, currency unions, and the
 - GATT/WTO.
 - Time delays at export/import and trade facilitation.
 - Governance, corruption, and contract enforcement.

Introduction

- In recent years, intuition is not enough.
- Gravity models have become a complex business: back to microfoundations!
 - Different microfoundations imply different estimation techniques.
 - Use of sectorally disaggregated data, and broad country samples, brings out new issues for theory and empirics.
- To do good applied/policy research, it is important to be on top of the latest developments in the literature.

The traditional gravity model

- Concepts and stylized facts of the gravity approach
- Example of applications
- Identifying (“trade potentials”) using gravity approach

Gravity force in Physics



$$F_{ij} = G \frac{M_i M_j}{d_{ij}^2}$$

The gravitational force between two objects (apple, head) is directly proportional to each of their masses, and inversely proportional to the square of the distance between them.

Gravity Analogy

Gravity force equation

$$F_{ij} = G \frac{M_i M_j}{D_{ij}^2}$$

Gravity force between two objects depends on their masses and inversely proportional to the square of distance between them.

Intuitive gravity for trade

$$X_{ij} = C \frac{Y_i Y_j}{t_{ij}}$$

X_{ij} = exports (or trade) from i to j,

C = constant,

Y = economic mass (\approx GDP),

t = trade costs between two countries

\approx distance, adjacency, ..., "policy factors".

预览已结束，完整报告链接和二维码如下：

https://www.yunbaogao.cn/report/index/report?reportId=5_3346

