ESCAP-World Bank Trade Cost Database – A Brief Introduction

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1. Background & Rationale for the Database

- Regional/global trade and production networks as a key engine of development
- Trade Facilitation [TF] (efficient trade procedures and low trade costs) essential to enable firms to participate
- Intraregional (South-South) trade important for A-P countries to continue growing at a time when developed markets slowing/shrinking
- Some cross-country indicators of TF and trade costs available (e.g., WB Doing Business indicators) but **none allowing for measuring bilateral/intra-regional trade costs**
- →Development of a bilateral trade cost database to provide a systematic and standardized way to evaluate trade costs in developing countries

2. ESCAP-WB Trade Cost: Definition

- Based on the comprehensive trade costs measure proposed by Jacks, Meissner and Novy (2009)
  - Measure derived from the theory-consistent gravity equation, i.e., ratio based essentially on Bilateral Trade data and Gross Output data
  - → ***"objective" measure of costs***

- Captures all *additional costs involved in trading goods bilaterally relative to those involved in trading goods domestically.* It includes:
  - International shipping and logistics costs
  - Tariff and non-tariff costs, including indirect and direct costs associated with trade procedures and regulations
  - Costs from differences in language, culture, currencies…

2. ESCAP-WB Trade Cost: Definition

- Our measure of **ad valorem trade costs**:

$$\tau_{ij} = \tau_{ji} = \left(\frac{t_{ij} t_{ji}}{t_{ii} t_{jj}} \right)^{\frac{1}{2}} - 1 = \left(\frac{X_{ii} X_{jj}}{X_{ij} X_{ji}} \right)^{\frac{1}{2(\sigma-1)}} - 1$$

Where

- **τ*ij* denotes geometric average trade costs between country i and country j**
- tij denotes international trade costs from country i to country j
- tji denotes international trade costs from country j to country i
- tii denotes intranational trade costs of country i
- tjj denotes intranational trade costs of country j
- ***Xij* denotes international trade flows from country i to country j**
- ***Xji* denotes international trade flows from country j to country i**
- ***Xii* denotes intranational trade of country i**
- ***Xjj* denotes intranational trade of country j**
- **σ denotes intra-sectoral elasticity of substitution (which is set = 8)**

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- Intuition: **keeping all else constant, a rise in the ratio of international trade relative to domestic trade must be associated with a fall in international trade costs relative to domestic trade costs**
- *Ad valorem* ? → **bilateral trade costs are expressed in % of the value of goods (like tariffs generally are)**
- Important note: Change in the value of sigma can change the absolute value of trade costs → **better to look at trade cost relative to each other**

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Note that:

- Our trade costs are always expressed in terms of international relative to intra-national trade costs
- Our trade costs are the geometric average of trade costs in both directions (country i to j and country j to i)
  - → This can makes the identification of policy effects challenging

3. End Result – the ESCAP-WB Trade Cost Database

- **"All-inclusive" Bilateral trade costs for 178 countries [Now >180]**
- **For the period 1995-2010* [Now -2012/13]**
- **Two macro-sectors covered**
  - **Agriculture**
  - **Manufacturing**

- Underlying data on international trade (*Xij, Xji*) are relatively easy to come by, but data on intranational trade (*Xii, Xjj*) are more complicated…
  - Intranational trade = Gross Output (from UN National Account statistics) – export

*Linear interpolation applied to fill in missing trade costs observations

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Databases

ARTNeT acts as an information repository providing a linkage to international organizations such as the International Trade Centre, UNCTAD, and the WTO, which in turn facilitate researchers' access to trade data and trade analysis tools. ARTNeT also builds trade research capacity through facilitating access to relevant trade and investment related databases. In addition to the ARTNeT Trade Publications Database, ARTNeT supports the development of the Asia-Pacific Trade and Investment Agreement Database (APTIAD).

ESCAP-World Bank Trade Cost Database

- ESCAP-World Bank Trade Cost Database [Stata] / [Excel]
- Metadata [Excel]
- User Note

The ESCAP Trade and Investment Division, in support to the ARTNeT research programme on trade facilitation, initiated development of a bilateral trade cost database in 2010 in an effort to increase understanding of the cost of trading between countries in Asia and the Pacific and beyond. The trade cost measure, based on Novy (2012) [1] , is a comprehensive all-inclusive measure based on micro-theory and calculated using macro-economic data, providing an alternative measure of trade facilitation performance. Following release of a first version of the database in 2010 using trade and GDP data, [2] an improved and expanded version 2 was released in December 2011 - based on gross output data and providing sectoral trade cost estimates for about 100 countries.[3]

In late 2011, United Nations ESCAP and the World Bank (WB) joined hands to develop a common standard methodology for calculating comprehensive international trade costs and provide the research and policy community with a global reference. The resulting ESCAP-World Bank Trade Cost Database issued in

.unescap.org/databases.html#first