

Data in Wilson, Mann, and Otsuki(2004)

1. General data description

The data is organized such that unit of observation is a pair of importing and exporting countries. The major sources of data are, the Commodity and Trade Database(COMTRADE) of the United Nations Statistics Division for trade data, the Trade Analysis and Information System (TRAINS) of the United Nations Conference on Trade and Development(UNCTAD) for tariff data, the World Development Indicators published by the World Bank for the data of gross national product(GNP) and per capita GNP, and 3 country surveys for trade facilitation indicator.(see the next section for detail) The following variables are used for the gravity model in Chapter 4 of WMO(2004).

year	2000 and 2001
Importer	Importing country
exporter	Exporting country
Trade	The value of manufactures export from country J to I
Tariff	Tariff rate in the percent ad velorem term that is specific to the trading partners I and J and year t.
Gnp_im	Importng country's GNP in 1995 constant U.S. dollars
Gnp_ex	Exporting country's GNP in 1995 constant U.S. dollars
Gnppc_im	Importing country's GNP per capita in 1995 U.S. dollars
Gnppc_ex	Exporting country's GNP per capita in 1995 U.S. dollars

Trade Facilitation indicators

ports_im	Port efficiency for importing country The average of two indexed inputs (water, air)*
Regulation_im	Regulatory environment for importing country The average of two indexed inputs (corrupt, transparency)*
Services_im	Service sector infrastructure for importing country The average of two indexed inputs (e_cost, internet)*
Customs_im	Customs environment for importing country
Ports_ex	Ports efficiency for exporting country
Regulation_ex	Regulatory environment for exporting country
Services_ex	Service sector infrastructure for exporting country

*see sub-indicators and section 2

Dummy Variables

Distance	Geographical distance between capital in country I and J
Dadjacency	The adjacency dummy : 1 if country I is adjacent to country J, and 0 otherwise.

Dasean	The trade agreement dummy : ASEAN
Dapec	The trade agreement dummy : APEC
Dnafta	The trade agreement dummy : NAFTA
Dlaia	The trade agreement dummy : LAIA
Daunz	The trade agreement dummy : AUNZ
Dercosur	The trade agreement dummy : MERCOSUR
Deu	The trade agreement dummy : EU
Deng	The language dummy : English
Dfrec	The language dummy : French
Dspn	The language dummy : Spanish
Darb	The language dummy : Arabic
Dchi	The language dummy : Chinese
Dgmn	The language dummy : German
Dpor	The language dummy : Portuguese
Drus	The language dummy : Russian
D2000	A dummy for year 2000

Sub-indicators

Water	Sub-index for ports efficiency index (see section 2 for detail)
Air	Sub-index for ports index (see section 2 for detail)
Barriers	Sub-index for customs index
Bribes	Sub-index for customs index
Transparency	Sub-index for regulation index
Corrupt	Sub-index for regulation index
e_cost	Sub-index for services index
Internet	Sub-index for services index

2. Detail description for trade facilitation indicators

Data come from the World Economic Forum, Global Competitiveness Report, 2001-02 (GCR), IMD Lausanne, World Competitiveness Yearbook 2000 (WCY), and Kaufmann, Kraay and Zoido-Lobaton (2002) (KKZ). All survey data in GCR comes from the World Economic Forum's Executive Opinion Survey. A total of 4022 firms were surveyed. "In order to provide the basis for a comparative assessment on a global basis, it is essential that we interview a sufficient number of senior business leaders in individual countries and that the sample in each country is not biased in favor of any particular business group. We have taken a number of steps to ensure this. First, we have asked each of our partner institutes, the organizations that administer the surveys in each country, to start with a comprehensive register of firms. From this, they were asked to choose a sample whose distribution across economic sectors was proportional to the distribution of the country's labor force across sectors, excluding agriculture. They were then asked to choose firms randomly within these broad sectors (for example, by choosing firms at

regular intervals from an alphabetic list), and to pursue face-to-face interviews, following up for clarifications where necessary. The employment distribution was taken from data in the 1998 *Yearbook of Labour Statistics* of the International Labour Office. The respondents to the survey are typically a company's CEO or a member of its senior management."

The WCY uses a 115 question survey sent to executives in top and middle management of firms in all 49 countries of the WCY. The sample size of each country is proportional to GDP, and firms "normally have an international dimension." The firms are selected to be a cross section of manufacturing, service, and primary industries. There were 3532 responses to the Survey.

KKZ (2002) updates the data on governance that were developed in Kaufmann, Kraay and Zoido-Lobaton (1999) "Governance Matters." The database contain more than 300 governance indicators for 175 countries compiled from a variety of sources in 2000/2001. Six aggregate indicators are constructed corresponding to six basic governance concepts: Voice and Accountability, Political Stability, Government Effectiveness, Regulatory Quality, Rule of Law and Control of Corruption.

The various data series were chosen because of their relevance to the four concepts of trade facilitation. The raw data series were indexed by the maximum value as a benchmark, since this easily indicates how far a country's performance is from the best practice country whose indexed value is 1.

- Ports_im, ports_ex = "Port efficiency" for each country J is the average of two indexed inputs (all GCR):
 - Water = Port facilities and inland waterways are : (0=underdeveloped, 1=as developed as the world's best, GCR)
 - Air = Air transport is : (0=infrequent and inefficient, 1=as extensive and efficient as the world's best, GCR)
- Customs_im, customs_ex = "Customs environment" for each country J is the average of two indexed inputs (all GCR):
 - Barriers = Hidden import barriers other than published tariffs and quotas
 - Bribes = Irregular extra payments or bribes connected with import and export permits
- Regulations = "Regulatory environment" for each country J is constructed as the average of four indexed inputs:
 - Transparency = Transparency of government policy is satisfactory (WCY)
 - Corruption = Control of Corruption (KKZ)
- Services = "Service-sector infrastructures" for each country J is as the average of three indexed inputs (all GCR):
 - E_cost = Speed and cost of internet access are: (0=slow and expensive, 1=fast and cheap)

- E_{Internet} = Internet contribution to reduce inventory costs is: (0=no improvement, 1=huge improvement)

[source : Wilson, Mann and Otsuki (2004)]