

## **STRUCTURAL GRAVITY MANUFACTURING DATABASE DOCUMENTATION**

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**Manuscript date:** September 2020

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## 1 INTRODUCTION

This note describes the construction of the Structural Gravity Manufacturing Database. The database provides consistent data on bilateral international trade and domestic trade of manufactured goods, constructed using production data, for 186 trading partners over the 1980-2016 period.

If you are using the database, please use the recommended citation:

Monteiro, Jose-Antonio (2020), "Structural Gravity Manufacturing Sector Dataset: 1980-2016", World Trade Organization, Geneva.

## 2 DATABASE CONSTRUCTION

The database contains consistent data on bilateral international trade and domestic trade of manufactured goods.

### 2.1 Domestic trade of manufactured goods

Domestic trade flows are computed as the difference between gross output and exports of manufacturing goods.

#### 2.1.1 Gross manufacturing output

Gross manufacturing output is constructed using data from UN UNIDO INDSTAT 2 2017 and 2018 editions at the 2-digit level of International Standard Industrial Classification (ISIC) Rev.3, CEPII Trade, Production and Bilateral Protection Database (TradeProd) at the 3-digit level of ISIC Rev.2, World Bank's Trade, Production and Protection (TPP) database at the 3-digit level of ISIC Rev.2, and COMTRADE bilateral trade at the 3- and 2-digit level of ISIC Rev.2. The UN UNIDO INDSTAT 2 is derived from INDSTAT3 ISIC Rev.2 and INDSTAT4 ISIC Rev.3. The CEPII TradeProd and World Bank's TPP databases were used to provide production data for earlier years for some countries.

Given that the different databases are reported in different ISIC industry classifications, UNIDO INDSTAT data had to be translated from ISIC Rev.3 to ISIC Rev.2 using a correspondence table. However, ISIC Rev.2 industry codes do not map one-to-one to the Rev.3 industry codes. That is why country-specific concordance between ISIC Rev.3 to ISIC Rev.2 was constructed based on an iteration process for the matching years for which UNIDO INDSTAT data were available in both ISIC Rev.2 and ISIC Rev.3. The correlation between the original ISIC Rev.2 production values and the mapped values is larger than 0.99 for many countries.

After processing the different databases, gross output data are available for 132 of countries. However, due to data availability, the time coverage of gross output at the 2-digit level differs substantially across countries.

#### 2.1.2 Exports of manufacturing goods

Data on exports of manufacturing goods is based on export data taken from UN Comtrade. Export flows, expressed in free on board (FOB), were complemented by mirrored import data flows after adjusting for cost, insurance and freight (CIF) costs using estimates of bilateral CIF-FOB costs from the OECD.

#### 2.1.3 Construction of domestic trade of manufactured goods

The construction of internal trade is based on matching observations of gross output and exports data at the 2-digit level. For 16% of matching observations, internal trade is set to zero because the difference between gross output and exports at the 2-digit level is negative. The internal trade observations are then aggregated at the total manufacturing level. The matching sectors at the 2-digit level are also used to construct bilateral trade.

## **2.2 Bilateral trade of manufactured goods**

Data on bilateral exports of manufacturing goods is based on taken from UN Comtrade. Bilateral export flows, expressed in FOB, were complemented by mirrored bilateral import data flows after adjusting for CIF costs. Estimates of bilateral CIF-FOB costs were obtained from the OECD.

## **3 FUTURE UPDATES**

If you consider that there is a mistake in the database or that additional data or more reliable data could be used, please send an email to [enquiries@wto.org](mailto:enquiries@wto.org).

## ANNEX: COUNTRY AND YEAR COVERAGE

	International trade	Domestic trade
Afghanistan	1980-2016	2002-2015
Albania	1980-2016	1986-2016
Algeria	1980-2016	1980-2015
Andorra	1980-2016	
Angola	1980-2016	2014-2015
Antigua and Barbuda	1980-2016	
Argentina	1980-2016	1984-2002
Australia	1980-2016	1980-2016
Austria	1980-2016	1980-2016
Bahamas	1980-2016	1981-1998
Bahrain	1980-2016	1992-2016
Bangladesh	1980-2016	1980-2011
Barbados	1980-2016	1980-1997
Belgium and Luxembourg	1980-2016	1980-2016
Belize	1980-2016	1989-1992
Benin	1980-2016	1980-1981
Bermuda	1980-2016	2006-2015
Bhutan	1980-2016	
Bolivia (Plurinational State of)	1980-2016	1980-2012
Botswana	2000-2016	2000-2016
Brazil	1980-2016	1990-2016
British Virgin Islands	1980-2016	
Brunei Darussalam	1980-2016	2010-2010
Bulgaria	1980-2016	1980-2016
Burkina Faso	1980-2016	1980-1983
Burundi	1980-2016	1980-2013
Cabo Verde	1980-2016	
Cambodia	1980-2016	1993-2000
Cameroon	1980-2016	1980-2008
Canada	1980-2016	1980-2016
Cayman Islands	1980-2016	
Central African Republic	1980-2016	1980-1993
Chad	1980-2016	
Chile	1980-2016	1980-2016
China	1980-2016	1980-2016
Chinese Taipei	1980-2006	
Christmas Island	1980-2016	
Cocos (Keeling) Islands	1980-2016	
Colombia	1980-2016	1980-2016
Comoros	1980-2016	
Congo	1980-2016	1981-2008
Cook Islands	1980-2016	
Costa Rica	1980-2016	1980-2016
Cuba	1980-2016	1980-1989
Cyprus	1980-2016	1980-2016
Cote d'Ivoire	1980-2016	1980-1997
Democratic People's Republic of Korea	1980-2016	
Democratic Republic of the Congo	1980-2016	
Denmark	1980-2016	1980-2016
Djibouti	1980-2016	
Dominica	1980-2016	
Dominican Republic	1980-2016	1980-1984
East Timor	1980-2016	

	International trade	Domestic trade
Ecuador	1980-2016	1980-2016
Egypt	1980-2016	1980-2016
El Salvador	1980-2016	1980-1998
Equatorial Guinea	1980-2016	
Eswatini	2000-2016	2011-2011
Ethiopia	1993-2016	1993-2015
Falkland Islands (Malvinas)	1980-2016	
Faroe Islands	1980-2016	
Fiji	1980-2016	1980-2015
Finland	1980-2016	1980-2016
France	1980-2016	1980-2016
French Polynesia	1980-2016	
Gabon	1980-2016	1980-1995
Gambia	1980-2016	1980-2004
Germany	1980-2016	1980-2016
Ghana	1980-2016	1980-2003
Gibraltar	1980-2016	
Greece	1980-2016	1980-2016
Greenland	1980-2016	
Grenada	1980-2016	
Guatemala	1980-2016	1980-1998
Guinea	1980-2016	
Guinea-Bissau	1980-2016	
Guyana	1980-2016	
Haiti	1980-2016	1988-1997
Honduras	1980-2016	1981-1996
Hong Kong, China	1980-2016	1980-2016
Hungary	1980-2016	1980-2016
Iceland	1980-2016	1980-2016
India	1980-2016	1980-2016
Indonesia	1980-2016	1980-2016
Iran (Islamic Republic of)	1980-2016	1980-2016
Iraq	1980-2016	1984-2013
Ireland	1980-2016	1980-2016
Israel	1980-2016	1980-2016
Italy	1980-2016	1980-2016
Jamaica	1980-2016	1980-1992
Japan	1980-2016	1980-2016
Jordan	1980-2016	1980-2016
Kenya	1980-2016	1980-2016
Kiribati	1980-2016	
Kuwait	1980-2016	1980-2016
Lao People's Democratic Republic	1980-2016	1999-1999
Lebanon	1980-2016	1998-2007
Lesotho	2000-2016	
Liberia	1980-2016	1984-1985
Libya	1980-2016	1980-1980
Macao, China	1980-2016	1980-2015
Madagascar	1980-2016	1980-2006
Malawi	1980-2016	1980-2012

	International trade	Domestic trade
Malaysia	1980-2016	1980-2016
Maldives	1980-2016	2013-2015
Mali	1980-2016	
Malta	1980-2016	1980-2014
Mauritania	1980-2016	
Mauritius	1980-2016	1980-2016
Mexico	1980-2016	1984-2016
Mongolia	1980-2016	1990-2016
Montserrat	1980-2016	
Morocco	1980-2016	1980-2015
Mozambique	1980-2016	1986-1998
Myanmar	1980-2016	1989-2013
Namibia	2000-2016	2007-2015
Nauru	1980-2016	
Nepal	1980-2016	1986-2011
Netherlands	1980-2016	1980-2016
New Caledonia	1980-2016	
New Zealand	1980-2016	1980-2016
Nicaragua	1980-2016	1980-1985
Niger	1980-2016	1990-2015
Nigeria	1980-2016	1980-2004
Niue	1980-2016	
Norfolk Island	1980-2016	
Norway	1980-2016	1980-2016
Oman	1980-2016	1993-2016
Pakistan	1980-2016	1980-2006
Panama	1980-2016	1980-2016
Papua New Guinea	1980-2016	1980-2001
Paraguay	1980-2016	2001-2010
Peru	1980-2016	1980-2016
Philippines	1980-2016	1980-2016
Pitcairn	1980-2016	
Poland	1980-2016	1982-2016
Portugal	1980-2016	1980-2016
Qatar	1980-2016	1987-2016
Republic of Korea	1980-2016	1980-2016
Romania	1980-2016	1985-2016
Rwanda	1980-2016	1999-1999
Saint Helena	1980-2016	
Saint Lucia	1980-2016	1993-1997
Saint Pierre and Miquelon	1980-2016	
Saint Vincent and the Grenadines	1980-2016	
Samoa	1980-2016	
San Marino	1995-2016	
Sao Tome and Principe	1980-2016	
Saudi Arabia	1980-2016	1989-2016
Senegal	1980-2016	1980-2014
Seychelles	1980-2016	
Sierra Leone	1980-2016	
Singapore	1980-2016	1980-2016

	International trade	Domestic trade
Solomon Islands	1980-2016	
Somalia	1980-2016	1986-1986
South Africa	1980-2016	1980-2016
Spain	1980-2016	1980-2016
Sri Lanka	1980-2016	1980-2016
State of Palestine	2000-2016	
Suriname	1980-2016	1980-1993
Sweden	1980-2016	1980-2016
Switzerland	1980-2016	1986-2016
Syrian Arab Republic	1980-2016	1980-2005
Thailand	1980-2016	1982-2013
Togo	1980-2016	
Tokelau	1980-2016	
Tonga	1980-2016	1980-2004
Trinidad and Tobago	1980-2016	1981-2006
Tunisia	1980-2016	1980-2015
Turkey	1980-2016	1980-2016
Turks and Caicos Islands	1980-2016	
Tuvalu	1980-2016	
Uganda	1980-2016	1989-1989
United Arab Emirates	1980-2016	1981-2015
United Kingdom of Great Britain and Northern Ireland	1980-2016	1980-2015
United Republic of Tanzania	1980-2016	1980-2015
United States of America	1980-2016	1980-2016
Uruguay	1980-2016	1980-2014
Vanuatu	1980-2016	
Venezuela (Bolivarian Republic of)	1980-2016	1980-1998
Viet Nam	1980-2016	1998-2015
Wallis and Futuna Islands	1980-2016	
Western Sahara	1980-2016	
Yemen	1980-2016	1988-2014
Zambia	1980-2016	1980-1994
Zimbabwe	1980-2016	2009-2015

Note: Internal trade data are not necessarily available for every year.