

10th CompNet Workshop

WS2 – WS3 matching

Discussion

by

Carlo Altomonte

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Linking data from a technical point of view is (relatively) easy

- WS3 measures are country-industry based on WIOD, i.e. 40 countries (plus RoW) and 35 (NACE Rev. 1.1 – 2 digits) industries, including manufacturing & services, over time (1995-2011)
- WS2 measures are also country-industry based: 12 (20) countries, 60 (NACE Rev. 2 – 2 digits) industries, also including manufacturing and services, over time (2000-2012)
- The only (not trivial) technical problem is the conversion of NACE Rev. 2 data into NACE Rev. 1.1 data at the 2-digits level. Solvable since Rev. 2 data (21 sections, 88 divisions) are more granular than Nace Rev. 1.1 (17 sections, 88 divisions), but details need to be worked out
- Necessary condition for linking WS2 to WS3 data: provide CompNet WS2 data also in NACE Rev. 1.1 format, with attached conversion table

Linking data from a technical point of view is (relatively) easy

WIOD Sector Code	Description	WIOD Sector Code	Description
c01	Agriculture, Hunting, Forestry and Fishing	c18	Construction
c02	Mining and Quarrying	c19	Sale, Maintenance and Repair of Motor Vehicles Retail Sale of Fuel
c03	Food, Beverages and Tobacco	c20	Wholesale Trade and Commission Trade, Except of Motor Vehicles
c04	Textiles and Textile Products	c21	Retail Trade, Except of Motor Vehicles ; Repair of Household Goods
c05	Leather and Footwear	c22	Hotels and Restaurants
c06	Wood and Products of Wood and Cork	c23	Inland Transport
c07	Pulp, Paper, Paper, Printing and Publishing	c24	Water Transport
c08	Coke, Refined Petroleum and Nuclear Fuel	c25	Air Transport
c09	Chemicals and Chemical Products	c26	Other Supporting and Auxiliary Transport Activities
c10	Rubber and Plastics	c27	Post and Telecommunications
c11	Other Non-Metallic Mineral	c28	Financial Intermediation
c12	Basic Metals and Fabricated Metal	c29	Real Estate Activities
c13	Machinery, Nec	c30	Renting of M&Eq and Other Business Activities
c14	Electrical and Optical Equipment	c31	Public Admin and Defence; Compulsory Social Security
c15	Transport Equipment	c32	Education
c16	Manufacturing, Nec; Recycling	c33	Health and Social Work
c17	Electricity, Gas and Water Supply	c34	Other Community, Social and Personal Services

Linking data from a technical point of view is (relatively) easy

Country	3-digit ISO code	Country	3-digit ISO code
Australia	AUS	Ireland	IRL
Austria	AUT	Italy	ITA
Belgium	BEL	Japan	JPN
Bulgaria	BGR	South Korea	KOR
Brazil	BRA	Lithuania	LTU
Canada	CAN	Luxembourg	LUX
China	CHN	Latvia	LVA
Cyprus	CYP	Mexico	MEX
Czech Republic	CZE	Malta	MLT
Germany	DEU	Netherlands	NLD
Denmark	DNK	Poland	POL
Spain	ESP	Portugal	PRT
Estonia	EST	Romania	ROM
Finland	FIN	Russia	RUS
France	FRA	Slovak Republic	SVK
United Kingdom	GBR	Slovenia	SVN
Greece	GRC	Sweden	SWE
Hungary	HUN	Turkey	TUR
Indonesia	IDN	Taiwan	TWN
India	IND	U.S.A	USA

Linking data from an economic point of view ... another story

- Once data speak the same language in terms of country/industry partition, the problem is however which WS3 measures can be linked in order to exploit the wealth of variation in WS2 data
- Ideally link country & industry & time-specific measures of value added trade retrieved from WS3 to equivalent WS2 cells to maximize variation in the data and exploit different identification strategies via a different combination of fixed effects, all with a different economic interpretation
- BUT: traditional measures of VA trade currently used in WS3 (e.g. VS, VAX or the KWW decomposition) are forward-linkage based: include indirect exports of a sector's VA via gross exports from other sectors of the same exporting country.
- When measured at the country level these differences cancel out, but when considered at the country-industry level the former measure is problematic => need for backward-linkage based measure of VA exports, which is VA from all sectors of a given exporting country embodied in a given sector's gross exports.

Linking data from an economic point of view ... an example

- A forward-linkage based measure of value added exports in the US electronics sector (e.g. VAX) includes that sector's VA embodied in US gross exports from automobile and chemical sectors, but excludes the VA contributions from these sectors embodied in the gross exports of US electronics.
 - Technically, this measure is not sector-specific, as part of the value added exports measured in electronics via VAX is actually related to gross exports in chemicals or automobile.
- Instead, backward-linkage based measure of US value added embodied in US electronics exports includes VA contributions from other US sectors such as services and automobiles to the production of US electronics gross exports, but excludes the VA contributions from the US electronics sector to the gross exports of other sectors such as US automobiles.
 - As there is a one-to-one link between value added exports and gross exports within the same industry, VAX-type ratios calculated through backward linkage measures are always bounded between 0 and 1.