

# WTO "Trade in Value-Added and Global Value Chains" profiles

## Explanatory notes

The WTO "Trade in value-added and global value chains" statistical profiles give an overview of the key indicators that can be derived from trade in value-added statistics.

The profiles are broken down into four sections providing insights on:

- The value added contribution of foreign trade to an economy;
- The interconnection of national economies within global value chains (GVCs);
- The impact of the services industry on trade;
- The level of trade in merchandise and services intermediate products.

The indicators shown in the first three sections of the profiles rely on the online OECD Trade in Value-Added database (TiVA) stemming from the joint OECD-WTO TiVA initiative. The TiVA online database can be accessed from <http://oe.cd/tiva> or <http://www.wto.org/miwi>. TiVA indicators cover goods and services and are available for a set of 64 economies and 36 industries from the International Standard Industrial Classification, (ISIC Revision 4). Hence, the number of profiles available as well as the main partners and industries shown in the tables reflect the current coverage of the TiVA database.

The annexes present the lists of economies and industries available in TiVA as well as the definitions of economy and industry groups used in the profiles.

As per convention, the symbol "..." is applied whenever data are "not available or not reported".

### About data differences between the 2018 and 2016 versions of TiVA indicators

The 2018 version of the TiVA database, on which these "Trade in value-added and global value chains" profiles rely, brings some notable differences in the level of some GVC-related indicators. This is mainly due to the following changes in the data underlying TiVA indicators:

- Implementation of a new version of the System of National Accounts (SNA 2008 vs SNA 1993 in previous profiles) that impacted on the treatment of research and development, processing trade and merchanting activities.
- Adoption of the 4<sup>th</sup> Revision of the ISIC classification, leading to compositional effects in the revised set of industries applied in TiVA.
- Changes in official statistics, through revisions and access to new data sources, have contributed to improve data quality and may have had an impact on TiVA indicators.

For more details, please consult the following note: <http://www.oecd.org/industry/ind/tiva-2018-differences-tiva-2016.pdf>

The "Trade in value-added and global value chains" profiles are divided into the following sections:

### **SECTION 1: VALUE ADDED CONTENT OF GROSS EXPORTS**

The estimation of trade in value added terms shows the decomposition of gross exports into their domestic and foreign value-added contents. The domestic value-added content of exports is composed of the following three elements:

Domestic value added sent to consumer economy corresponds to the domestic value added embodied either in final or intermediate goods or services that is directly consumed by the importing economy.

Domestic value added sent to third economies represents the domestic value added contained in intermediates (goods or services) exported to a partner economy that re-exports them to a third economy as embodied in other products. This illustrates the multiple value-added exchanges taking place among GVCs and corresponds to the "Forward GVC participation" shown in the next section.

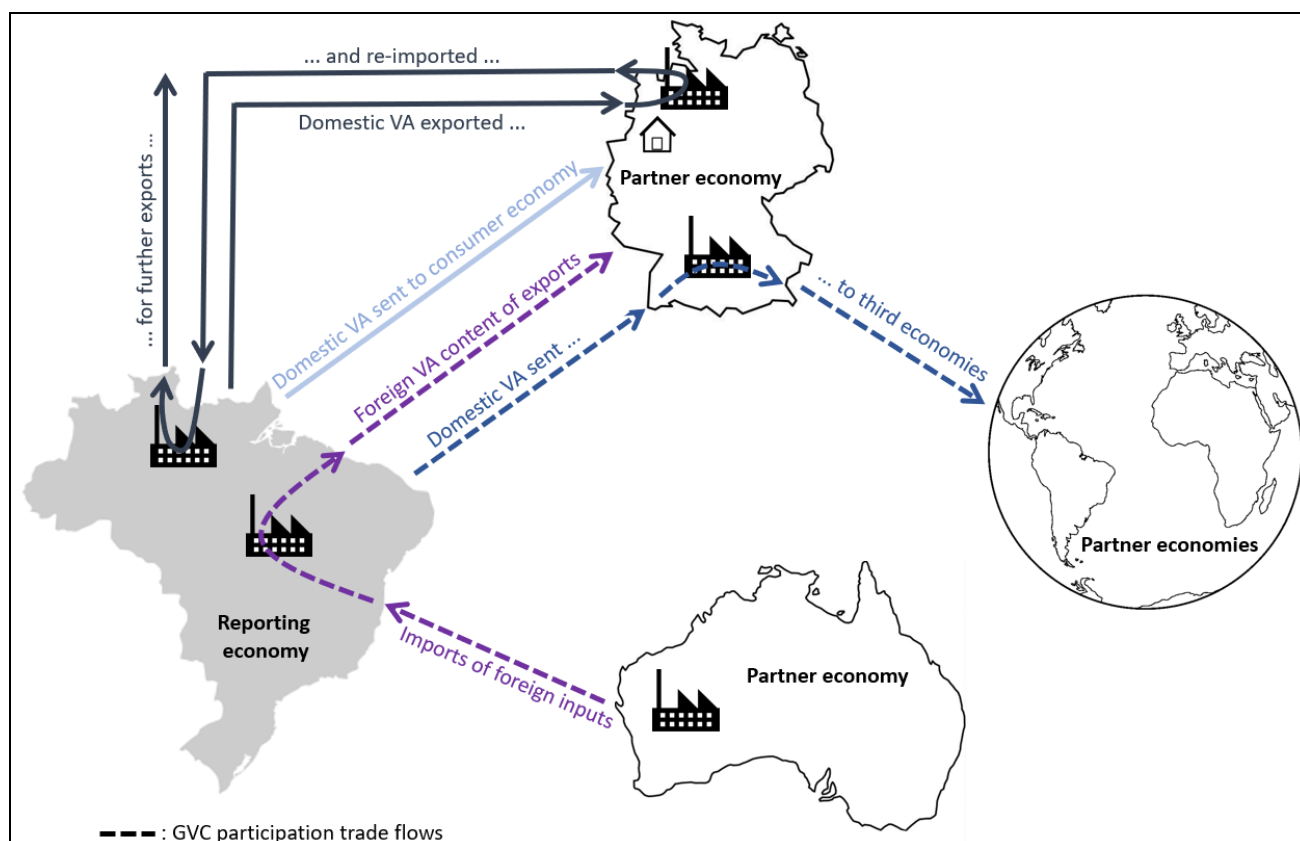
Domestic value added re-imported in the economy refers to the domestic value added of exported intermediates, or inputs, that is sent back to the economy of origin as embodied in other intermediates and used to produce exports. Such a value added round-trip between two (or more) economies highlights the domestic value added content present in an economy's imports.

Foreign value-added content of exports corresponds to the value added of inputs that were imported in order to produce intermediate or final goods/services to be exported. It corresponds to the "Backward GVC participation" shown in the next section. It is also referred to as "Vertical specialization" when expressed as a percentage of gross exports.

Source: OECD TiVA Database.

To further illustrate the terms described above, Figure 1 shows the production and trade flows corresponding to the value added components of exports.

**Figure 1. The value added components of gross exports and GVC trade flows**



## SECTION 2: PARTICIPATION IN GLOBAL VALUE CHAINS (GVCs)

The GVC participation index provides an estimation of how much an economy is connected to global value chains for its foreign trade.

The indicator is composed of two components reflecting the upstream and downstream links in international production chains. Basically, individual economies participate in global value chains by importing foreign inputs to produce the goods and services they export (backward GVC participation) and also by exporting domestically produced inputs to partners in charge of downstream production stages (forward GVC participation). See Figure 1.

**Backward GVC participation** refers to the ratio of the "Foreign value added content of exports" (see definition in Section 1) to the economy's total gross exports. This is the "Buyer" perspective or sourcing side in GVCs, where an economy imports intermediates to produce its exports.

**Forward GVC participation** corresponds to the ratio of the "Domestic value added sent to third economies" (see Section 1) to the economy's total gross exports. It captures the domestic value added

contained in inputs sent to third economies for further processing and export through value chains. This is the "Seller" perspective or supply side in GVC participation.

Source: OECD TiVA Database.

### **SECTION 3: ROLE OF SERVICES VALUE ADDED IN EXPORTS**

The compilation of trade in value added terms also allows for the estimation of the actual contribution of services in the exports of an economy, in a way that is more accurate than with traditional statistical methods.

This section provides insights on the contribution of services in exports of manufactures, where firms combine goods and services into product packages, as well as in total exports.

The "Top services industries' contributions to exports" figures include both domestic and foreign origins.

Source: OECD TiVA Database.

### **SECTION 4: TRADE IN INTERMEDIATE PRODUCTS**

Intermediate goods and services are tangible and intangible products utilized as inputs in production, excluding fixed assets. Trade statistics on intermediate products reflect the exchanges of parts, components, accessories and intermediary services taking place within international production chains.

#### **Merchandise exports/imports in intermediates**

The definition of intermediate goods relies upon the United Nations' Broad Economic Categories (BEC) classification, which groups commodities by main end-use, distinguishing between consumption, capital and intermediate goods. The following (sub-)categories are included:

- 111: primary food and beverages, mainly for industry
- 121: processed food and beverages, mainly for industry
- 2: Industrial supplies not elsewhere specified
- 42: parts and accessories for capital goods
- 53: parts and accessories for transport equipment

Oil is excluded from the calculations.

Source: UN Comtrade Database.

#### **Intermediate commercial services exports/imports**

The definition applied in the profile combines both "Other business services" and "Information and communications technology (ICT) services" as a proxy of intermediate commercial services.

Other business services include:

(i) Research and development services, which consist of services that are associated with basic and applied research, and experimental development of new products and processes. (ii) Professional and management consulting services, including: (a) legal services, accounting, management consulting, managerial services, and public relations services; and (b) advertising, market research, and public opinion polling services. (iii) Technical, trade-related, and other business services, including: (a) architectural, engineering, and other technical services; (b) waste treatment and depollution, agricultural, and mining services; (c) operating leasing services; (d) trade-related services; and (e) other business services n.i.e.

Information and communications technology (ICT) services cover:

(i) Telecommunications services, which encompass the broadcast or transmission of sound, images, data, or other information by telephone, telex, telegram, radio and television cable transmission, radio and television satellite, electronic mail, facsimile, and so forth, including business network services, teleconferencing, and support services; (ii) Computer services consisting of hardware- and software-related services and data-processing services; (iii) Information services including news agency services, such as the provision of news, photographs, and feature articles to the media as well as database services.

Source: WTO Statistics Database.

## ANNEXES

### Annex 1 - List of economies' names and codes

Country name	Code
Argentina	AR
Australia	AU
Austria	AT
Belgium	BE
Brazil	BR
Brunei Darussalam	BN
Bulgaria	BG
Cambodia	KH
Canada	CA
Chile	CL
China	CN
Colombia	CO
Costa Rica	CR
Croatia	HR
Cyprus	CY
Czech Republic	CZ
Denmark	DK
Estonia	EE
Finland	FI
France	FR
Germany	DE
Greece	GR
Hong Kong, China	HK
Hungary	HU
Iceland	IS
India	IN
Indonesia	ID
Ireland	IE
Israel	IL
Italy	IT
Japan	JP
Kazakhstan	KZ

Korea, Republic of	KR
Latvia	LV
Lithuania	LT
Luxembourg	LU
Malaysia	MY
Malta	MT
Mexico	MX
Morocco	MA
Netherlands	NL
New Zealand	NZ
Norway	NO
Peru	PE
Philippines	PH
Poland	PL
Portugal	PT
Romania	RO
Russian Federation	RU
Saudi Arabia, Kingdom of	SA
Singapore	SG
Slovak Republic	SK
Slovenia	SI
South Africa	ZA
Spain	ES
Sweden	SE
Switzerland	CH
Chinese Taipei	TW
Thailand	TH
Tunisia	TN
Turkey	TR
United Kingdom	GB
United States	US
Viet Nam	VN

## Annex 2 - Definitions of developed and developing economies

Country name	Code
<b>Developed economies</b>	
Australia	AU
Austria	AT
Belgium	BE
Bulgaria	BG
Canada	CA
Croatia	HR
Cyprus	CY
Czech Republic	CZ
Denmark	DK
Estonia	EE
Finland	FI
France	FR
Germany	DE
Greece	GR
Hungary	HU
Iceland	IS
Ireland	IE
Italy	IT
Japan	JP
Latvia	LV
Lithuania	LT
Luxembourg	LU
Malta	MT
Netherlands	NL
New Zealand	NZ
Norway	NO
Poland	PL
Portugal	PT
Romania	RO
Slovak Republic	SK
Slovenia	SI
Spain	ES
Sweden	SE
Switzerland	CH
United Kingdom	GB
United States	US

Country name	Code
<b>Developing economies</b>	
Argentina	AR
Brazil	BR
Brunei Darussalam	BN
Cambodia	KH
Chile	CL
China	CN
Colombia	CO
Costa Rica	CR
Hong Kong, China	HK
India	IN
Indonesia	ID
Israel	IL
Korea, Republic of	KR
Malaysia	MY
Mexico	MX
Morocco	MA
Peru	PE
Philippines	PH
Saudi Arabia, Kingdom of	SA
Singapore	SG
South Africa	ZA
Chinese Taipei	TW
Thailand	TH
Tunisia	TN
Turkey	TR
Viet Nam	VN

### Annex 3 - List of industries' codes and names

Code (ISIC Rev. 4)	Short name (shown in profiles)	Long name (shown in TiVA database)	Industry category
01 to 03	Agriculture	Agriculture, forestry and fishing	Primary products
05 to 06	Mining (energy products)	Mining and extraction of energy producing products	Primary products
07 to 08	Mining (non-energy products)	Mining and quarrying of non-energy producing products	Primary products
9	Mining support activities	Mining support service activities	Primary products
10 to 12	Food and beverages	Food products, beverages and tobacco	Manufactures
13 to 15	Textiles and clothing	Textiles, wearing apparel, leather and related products	Manufactures
16	Wood products	Wood and products of wood and cork	Manufactures
17 to 18	Paper products	Paper products and printing	Manufactures
19	Petroleum products	Coke and refined petroleum products	Manufactures
20 to 21	Chemical products	Chemicals and pharmaceutical products	Manufactures
22	Plastic products	Rubber and plastic products	Manufactures
23	Other mineral products	Other non-metallic mineral products	Manufactures
24	Basic metals	Basic metals	Manufactures
25	Metal products	Fabricated metal products	Manufactures
26	Computer and electronic products	Computer, electronic and optical products	Manufactures
27	Electrical equipment	Electrical equipment	Manufactures
28	Other machinery and equipment	Machinery and equipment, n.e.c.	Manufactures
29	Motor vehicles	Motor vehicles, trailers and semi-trailers	Manufactures
30	Other transport equipment	Other transport equipment	Manufactures
31 to 33	Other manufacturing equipment	Other manufacturing; repair and installation of machinery and equipment	Manufactures
35 to 39	Electricity, gas, water supply	Electricity, gas, water supply, sewerage, waste and remediation services	Manufactures
41 to 43	Construction	Construction	Services
45 to 47	Wholesale and retail trade	Wholesale and retail trade; repair of motor vehicles	Services
49 to 53	Transport and storage	Transportation and storage	Services
55 to 56	Accommodation and food services	Accommodation and food services	Services

58 to 60	Publishing, audiovisual activities	Publishing, audiovisual and broadcasting activities	Services
61	Telecommunications	Telecommunications	Services
62 to 63	IT services	IT and other information services	Services
64 to 66	Financial services	Financial and insurance activities	Services
68	Real estate activities	Real estate activities	Services
69 to 82	Other business services	Other business sector services	Services
84 to 98	Public services	Public admin, education and health; social and personal services	Services
85	Education services	Education services	Services
86 to 88	Health and social work	Human health and social work	Services
90 to 96	Arts, entertainment services	Arts, entertainment, recreation and other service activities	Services
97 to 98	Private households services	Private households with employed persons	Services