Guide to OECD **Trade in Value Added** (TiVA) Indicators, **2025 edition**

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Abstract

This guide presents the Trade in Value Added (TiVA) indicators published by OECD. The latest indicators were generated using the 2025 release of OECD annual Inter-Country Input-Output (ICIO) tables which cover the period from 1995 to 2022. The indicators are provided for 80 economies (including all OECD, European Union, ASEAN and G20 countries) the "*Rest of the World*" and a selection of region aggregates. They cover 50 unique economic activities and related aggregates (such as total manufacturing and total services) based on the ISIC Rev. 4 classification.

This document builds on previous versions[1] and is intended for all users, from experienced Input-Output practitioners familiar with the matrix algebra for generating indicators, to relative novices who wish to use TiVA indicators in their analyses and need guidance on their use and interpretation.

Please cite as *Guide to OECD Trade in Value Added (TiVA) Indicators, 2025 edition, OECD 2025*.

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[1] Most notably Martins Guilhoto, J., C. Webb and N. Yamano (2022), "Guide to OECD TiVA Indicators, 2021 edition", *OECD Science, Technology and Industry Working Papers*, No. 2022/02, OECD Publishing, Paris, https://doi.org/10.1787/58aa22b1-en. The differences in the text mainly reflect the expansion in geographical coverage, an increase in the number of economic activities covered and the extended time period.

Table of contents

FIGURES

TABLES

BOXES

ANNEX   43

1   Introduction

This guide presents the Trade in Value Added (TiVA) indicators published by OECD[2]. The latest indicators were estimated using the 2025 release of OECD Inter-Country Input-Output (ICIO) tables covering the years 1995 to 2022[3]. Indicators are provided for 80 economies (including all OECD, European Union, ASEAN and G20 countries) and a selection of region aggregates and, for 50 unique economic activities (industries) and related aggregates such as total manufactures and total services.

This guide builds on previous versions and is intended for all users, from experienced Input-Output practitioners familiar with the matrix algebra for generating indicators, to relative novices who wish to use TiVA indicators in their analyses and just need guidance on their use and interpretation.

The ICIO and TiVA databases are primarily based on statistics compiled according to 2008 System of National Accounts (2008 SNA) concepts and use an industry list based on ISIC Revision 4. Compared to the 2023 edition, the 2025 edition of TiVA indicators includes four new countries: Angola, Democratic Republic of the Congo, São Tomé and Príncipe, and the United Arab Emirates. In addition to the 80 target economies, the ICIO tables and TiVA also include an aggregate '*Rest of the World*' covering about 120 non-target economies to ensure completeness.

The TiVA indicators are designed to provide better insights into global production networks and supply chains than is possible with conventional trade statistics.

2   Basic definitions of OECD ICIO Tables

This section presents the basic structure of the OECD annual ICIO tables and the elements needed for the calculation of the TiVA indicators[4].

The latest edition of TiVA is provided for all years from 1995 to 2022[5]. Indicators cover 80 target economies (plus an aggregate representing "Rest of the World") and 17 regions and country groups (see Annex Table A.1 and Table A.2); as well as 50 unique industries and 30 industry aggregates within a hierarchy (see Annex Table A.3 and Table A.4). Indicators may be expressed in USD million (current prices) or as percentages (shares or ratios).

Note that for regional aggregates, once USD million measures are calculated for the 80 economies (and "Rest of the World"), these are aggregated into various regional groupings before deriving ratios and shares. Similarly, for aggregate industry sectors, after USD million measures are calculated for the 50 unique industries, these are summed into aggregate industry sectors before deriving ratios and shares.

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[2] See https://www.oecd.org/en/topics/sub-issues/trade-in-value-added.html

[3] See https://www.oecd.org/en/data/datasets/inter-country-input-output-tables.html

[4] For readers new to input-output analysis, the book by Miller, R. and P. Blair (2022). Input-Output Analysis: Foundations and Extensions. Cambridge: Cambridge University Press, 3rd Edition is recommended.

[5] See an important note concerning TiVA estimates for most recent years in the Annex.

2.1 The OECD Inter-Country Input-Output (ICIO) system

The OECD ICIO system consists of a set of annual symmetric industry-by-industry global input-output tables. For each year, several matrices can be generated from the ICIO tables to calculate TiVA indicators. Table 2.1, Figure 2.1, Figure 2.2 and Figure 2.3 present the basic structure of the ICIO database and the main matrices need for the estimation of the TiVA indicators.

Table 2.1. Basic Matrices in OECD ICIO Tables and TiVA Indicators

Matrix	Size of the matrix	Description
W	$1 \times NK$	**Value added**, where w_i^r is the value added (**at basic prices**) by industry i (1 to K) in country r (1 to N) plus *taxes less subsidies* on intermediate products, so that total value added equals total final demand at basic prices.
X	$1 \times NK$	**Gross output (at basic prices)**, where x_i^r is the gross output from industry i in country r
V	$1 \times NK$	**Value added to output ratio**, where $v_i^r = w_i^r / x_i^r$ is the ratio of value added to gross output by industry i in country r.
Z	$NK \times NK$	**Intermediate consumption (at basic prices)**, where z_{ij}^{rs} is the flow of goods from producing industry i in country r to the purchasing industry j in country s.
Y	$NK \times N$	**Final demand,** where the element y_i^{rs} represents final demand of country s for goods and services produced by industry i in country r. Final demand is separated into Household and Government Final Consumption, Gross Fixed Capital Formation (GFCF) and changes in inventories.
A	$NK \times NK$	**Input coefficients**, calculated as $a_{ij}^{rs} = z_{ij}^{rs} / x_j^s$
B	$NK \times NK$	*Leontief inverse*, or "output multipliers", $\mathbf{B} = (\mathbf{I} - \mathbf{A})^{-1}$, where the element b_{ij}^{rs} shows the direct and indirect requirements of inputs from industry i in country r for the production of one unit of output for demand by industry j in country s.
GRTR GRTR_INT GRTR_FNL	$NK \times N$	**Bilateral gross trade** matrices by exporting industry/country and importing country of intermediate (INT) and final (FNL) goods GRTR = GRTR_INT + GRTR_FNL

Figure 2.1. OECD ICIO Basic Structure

			Intermediate Consumption				Final Demand			G.O.
			Country 1	...	Country N	Country 1	...	Country N	
			Ind. 1 ... Ind. K	...	Ind. 1 ... Ind. K	FD¹ ... FD F	...	FD¹ ... FD F	
Country 1	Ind. 1 ⋮ Ind. K		Z^{11}	...	Z^{1N}	Y^{11}	...	Y^{1N}	X^1
⋮	⋮		⋮	⋱	⋮	⋮	⋱	⋮	⋮
Country N	Ind. 1 ⋮ Ind. K		Z^{N1}	...	Z^{NN}	Y^{N1}	...	Y^{NN}	X^N
Taxes less subsidies			... on intermediate products			... on final products			
Value Added at basic prices			VA^1	...	VA^N				
Gross Output			X^1	...	X^N				

Figure 2.2. Obtaining the Leontief Inverse and the Value Added to Output Ratio
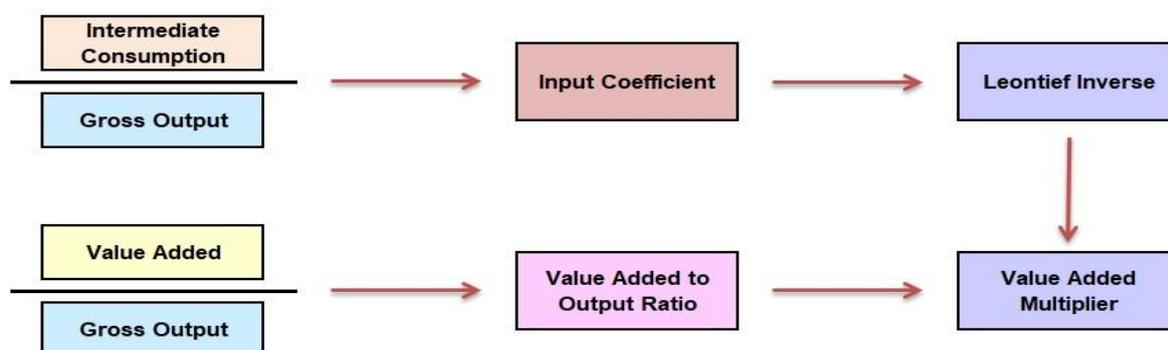
Figure 2.3. Obtaining the Bilateral Trade Flows
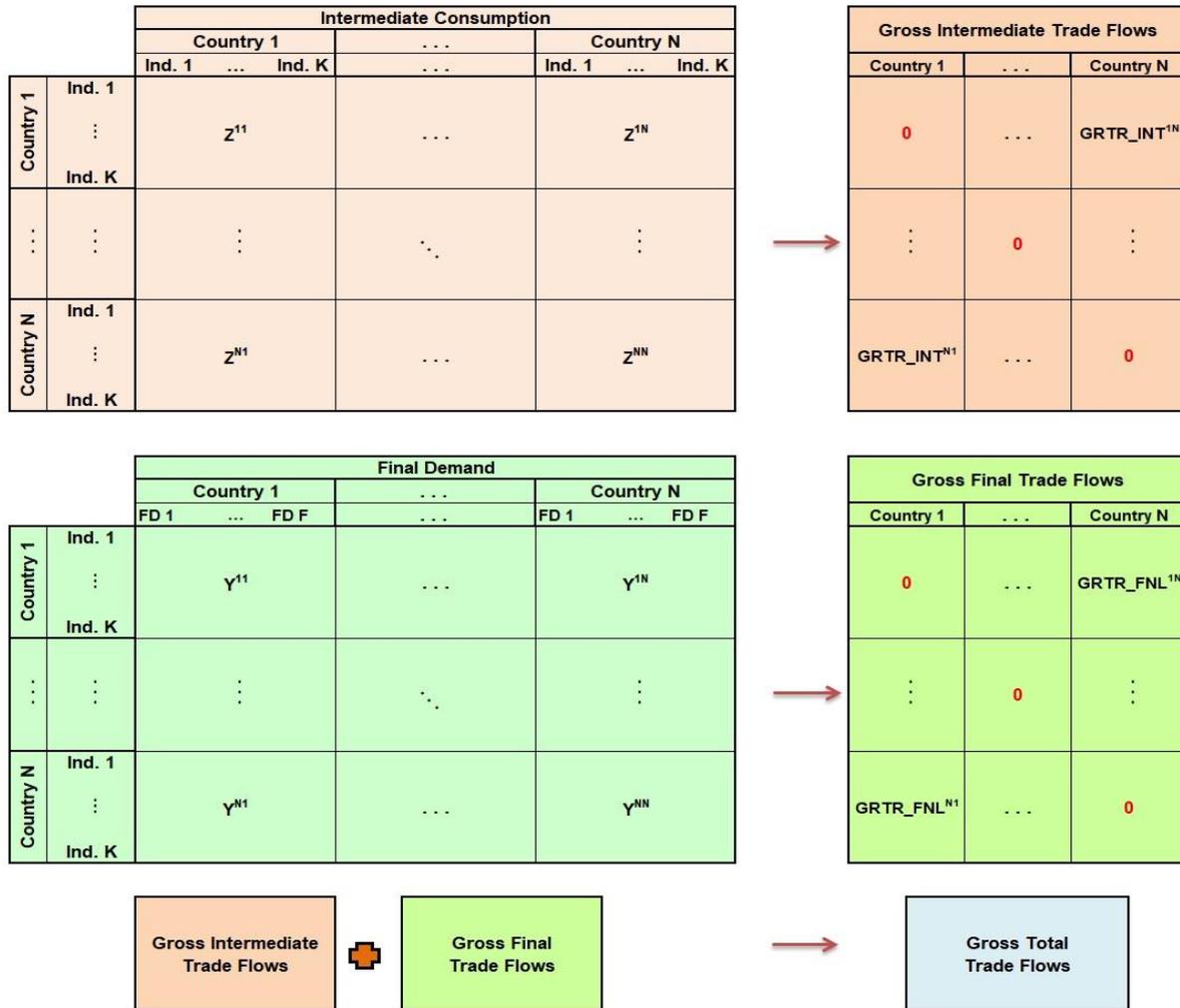
2.2 Definitions and notation used in this Guide

The TiVA indicators are shown in blue in the equations, while the variables derived from the ICIO system are shown in black. Visual representations of the indicators are also provided (see Box 1.)

$EXGR_{c,p}$ represents a $K{\times}1$ vector of gross exports from country c to partner country p for all K industries, where $c \neq p$. $EXGR_c$ is a $K{\times}1$ vector of total exports of country c.

$V_c = [v_{c1} \cdots v_{cK}]$ is a $1{\times}K$ row vector with domestic value added shares of output for each industry i in country c, while V_p generally represents value added shares of the partner country p. $\widehat{V_c}$ denotes the diagonalised matrix of vector V_c, i.e. a $K{\times}K$ matrix with elements $v_{c1} \cdots v_{cK}$ on the diagonal and 0 elsewhere.

$B = (I - A)^{-1}$, is the global Leontief inverse matrix with $NK{\times}NK$ dimensions, where A is the global I-O coefficient matrix. $B_{c,c}$ is a $K{\times}K$ diagonal block matrix of B representing total domestic gross output required for one unit increase of country c demand. $B_{p,c}$ is also a $K{\times}K$ block matrix, and it represents the total gross output from country p required for a one unit increase in country c demand.

Total gross exports and imports in ICIO tables, and hence in TiVA indicators, differ from official National Accounts statistics due to removal of estimates of re-exports and re-imports, conversion to a *basic price* valuation and reconciliation of bilateral asymmetries via balancing under output constraints.

Changes in inventories, acquisitions less disposals of valuables, and expenditure approach statistical discrepancy for a given country are included in countries' total final demand. In other words, there is an implicit assumption that all products consumed within a year are produced in the same year, and vice versa.

Gross trade and output measures are presented in current prices, USD millions and, with a *basic price* valuation.

Dimensions for each indicator are provided with the following abbreviations:

Country / Region:

- Prod cou = Production country
- VA src cou = Value added source country
- Exp cou = Export country
- Imp cou = Import country
- FD cou = final demand / destination country
- World = all countries which are related to the indicator

Industry:

- Prod ind = Production source industry
- VA src ind = Value added source industry
- Exp ind = Export products producing industry
- FD ind = final demand products producing industry
- Tot ind = total industry

Supply and Demand Dimensions:

- Depending on the indicator, the supply and demand dimensions could refer to intermediate, final or total goods and services.

3   An overview of OECD TIVA indicators

This section presents an overview of OECD TiVA indicators classified into four groups according to data requirements:

- Structural indicators, based on the values presented in ICIO;

- Indicators based on value added, gross exports and gross imports;

- Indicators based on value added and final demand;

- Detailed indicators, with four dimensions, revealing the origins of value added in gross exports, gross imports and final demand.

The complete set of indicators, with their respective dimensions, is presented in Table 3.1 and Table 3.2.

Table 3.1. Overview of OECD TiVA indicators and requirements for calculation

Number in doc.	Code	Label	Unit	ICIO Matrices or vectors used in the calculations
Structural Indicators - based on the values in ICIO tables				
4.1	PROD	Production (gross output)	USD	X
4.2	VALU	Value added	USD	W
4.3	PROD_VASH	Value added as a % of production	PC	V
4.4	EXGR	Gross exports	USD	GRTR
4.4	EXGR_INT	Gross exports of intermediate products	USD	GRTR_INT
4.4	EXGR_FNL	Gross exports of final products	USD	GRTR_FNL
4.5	IMGR	Gross imports	USD	GRTR
4.5	IMGR_INT	Gross imports of intermediate products	USD	GRTR_INT
4.5	IMGR_FNL	Gross imports of final products	USD	GRTR_FNL
4.6	BALGR	Gross trade balance	USD	GRTR
4.7	EXGRpSH	Gross exports, partner shares	PC	GRTR
4.7	IMGRpSH	Gross imports, partner shares	PC	GRTR
Indicators based on value added in gross exports and imports				
Domestic value added content of gross exports				
5.1	EXGR_DVA	Domestic value added content of gross exports	USD	VB * GRTR
5.2	EXGR_DVASH	Domestic value added share of gross exports	PC	VB * GRTR
5.3	EXGR_TDVAIND	Industry domestic value added contribution to gross exports	PC	VB * GRTR
5.4	EXGR_DVApSH	Domestic value added in gross exports, partner shares	PC	VB * GRTR
Decomposition of domestic value added content of gross exports				
5.5	EXGR_DDC	Direct domestic value added content of gross exports	USD	VB * GRTR
5.6	EXGR_IDC	Indirect domestic value added content of gross exports	USD	VB * GRTR
5.7	EXGR_RIM	Re-imported domestic value added content of gross exports	USD	VB * GRTR
Foreign value added content of gross exports (backward participation in GVCs)				
5.8	EXGR_FVA	Foreign value added content of gross exports	USD	VB * GRTR
5.9	EXGR_FVASH	Foreign value added share of gross exports	PC	VB * GRTR
5.10	EXGR_TFVAIND	Industry foreign value added contribution to gross exports	PC	VB * GRTR
5.11	DEXFVApSH	Foreign value added share of gross exports, by value added origin country	PC	VB * GRTR
Domestic value added content of foreign gross exports (forward participation in GVCs)				
5.12	EXGR_DVAFXSH	Domestic value added embodied in foreign exports as share of gross exports	PC	VB * GRTR
5.13	FEXDVApSH	Domestic value added in foreign exports as a share of gross exports, by foreign exporting country	PC	VB * GRTR
Domestic value added content of intermediate and final gross exports				
5.14	EXGR_INTDVASH	Domestic value added in exports of intermediate products, as a share of total gross exports	PC	VB * GRTR_INT
5.15	EXGR_FNLDVASH	Domestic value added in exports of final products, as a share of total gross exports	PC	VB * GRTR_FNL
5.16	EXGR_INTDVApSH	Domestic value added in exports of intermediate products, partner shares	PC	VB * GRTR_INT
Services value added content of gross exports				
5.17	EXGR_SERV_DVASH	Domestic services value added share of gross exports	PC	VB * GRTR
5.18	EXGR_SERV_FVASH	Foreign services value added share of gross exports	PC	VB * GRTR
Domestic value added in imports				
5.19	IMGR_DVA	Domestic value added content of gross imports	USD	VB * GRTR
5.20	IMGR_DVASH	Domestic value added share of gross imports	PC	VB * GRTR
Re-exported intermediate imports				
5.21	REII	Re-exported intermediate imports	USD	A, B, GRTR
5.22	IMGRINT_REII	Re-exported intermediate imports as % of intermediate imports	PC	A, B, GRTR_INT
Indicators based on value added in final demand				
6.1	FFD_DVA	Domestic value added embodied in foreign final demand	USD	VB * FD
6.2	FFD_DVApSH	Domestic value added in foreign final demand, partner shares	PC	VB * FD
6.3	VALU_FFDDVA	Share of domestic value added embodied in foreign final demand	PC	VB * FD
6.4	DFD_FVA	Foreign value added embodied in domestic final demand	USD	VB * FD
6.5	DFD_FVApSH	Foreign value added in domestic final demand, partner shares	PC	VB * FD
6.6	BALVAFD	Value added embodied in final demand, balance	USD	VB * FD
Sources of value added in final demand				
6.7	FD_VA	Value added content of final demand, by source country and industry	USD	VB * FD
6.7	CONS_VA	Value added content of total consumption, by source country and industry	USD	VB * CONS
6.7	GFCF_VA	Value added content of gross fixed capital formation, by source country and industry	USD	VB * GFCF
6.8	FD_VASH	Value added share of total final demand, by source country and industry	PC	VB * FD
6.8	CONS_VASH	Value added share of total consumption, by source country and industry	PC	VB * CONS
6.8	GFCF_VASH	Value added share of gross fixed capital formation, by source country and industry	PC	VB * GFCF
Indicators with four dimensions				
Origins of value added By Source Country and Industry (BSCI)				
7.1	EXGR_BSCI	Origin of value added in gross exports	USD	VB * GRTR
7.2	IMGR_BSCI	Origin of value added in gross imports	USD	VB * GRTR
7.3	FDVA_BSCI	Origin of value added in final demand	USD	VB * FD
Gross exports with 3 country dimensions: exporter, value added origin and final destination				
7.4	FD_EXGRINT_VA	Gross exports of intermediate products by origin of value added and final destination	USD	V, A, B, FD
7.4	FD_EXGRFNL_VA	Gross exports of final products by origin of value added and final destination	USD	VB * GRTR_FNL
7.4	FD_EXGR_VA	Gross exports by origin of value added and final destination	USD	FD_EXGRINT_VA + FD_EXGRFNL_VA

Table 3.2. OECD TiVA indicators and their dimensions

| N. | Code | number of dimensions | Indicator dimensions in OECD.STAT | Unit |
			Country c | Industry i | 'Partner' p	
1	EXGR	3	Exp cou | Exp ind | Imp cou	USD
2	EXGR_FNL	3	Exp cou | Exp ind | Imp cou	USD
3	EXGR_INT	3	Exp cou | Exp ind | Imp cou	USD
4	EXGR_DVA	3	Exp cou | Exp ind | Imp cou	USD
5	EXGR_DDC	2	Exp cou | Exp ind | *World*	USD
6	EXGR_IDC	2	Exp cou | Exp ind | *World*	USD
7	EXGR_RIM	2	Exp cou | Exp ind | *World*	USD
8	EXGR_FVA	2	Exp cou | Exp ind | *World*	USD
9	IMGR	3	Imp cou | Exp ind | Exp cou	USD
10	IMGR_FNL	3	Imp cou | Exp ind | Exp cou	USD
11	IMGR_INT	3	Imp cou | Exp ind | Exp cou	USD
12	IMGR_DVA	3	Imp cou | Exp ind | Exp cou	USD
13	BALGR	2	Exp cou | *Tot ind* | Imp cou	USD
14	REII	2	Exp cou | Prod ind | *World*	USD
15	PROD	2	Prod cou | Prod ind | *World*	USD
16	VALU	2	Prod cou | Prod ind | *World*	USD
17	FFD_DVA	3	VA src cou | VA src ind | FD cou	USD
18	DFD_FVA	3	FD cou | VA src ind | VA src cou	USD
19	BALVAFD	3	VA src cou | VA src ind | FD cou	USD
20	FD_VA	3	FD cou | VA src ind | VA src cou	USD
21	CONS_VA	3	FD cou | VA src ind | VA src cou	USD
22	GFCF_VA	3	FD cou | VA src ind | VA src cou	USD
23	EXGR_DVASH	2	Exp cou | Exp ind | *World*	PC
24	EXGR_FVASH	2	Exp cou | Exp ind | *World*	PC
25	EXGR_DVAFXSH	2	VA src cou | Exp ind | *World*	PC
26	EXGR_FNLDVASH	2	Exp cou | Exp ind | *World*	PC
27	EXGR_INTDVASH	2	Exp cou | Exp ind | *World*	PC
28	EXGR_INTDVApSH	3	Exp cou | Exp ind | Imp cou	PC
29	EXGRpSH	3	Exp cou | Exp ind | Imp cou	PC
30	EXGR_DVApSH	3	Exp cou | Exp ind | Imp cou	PC
31	EXGR_TDVAIND	2	Exp cou | Exp Ind | *World*	PC
32	EXGR_TFVAIND	2	Exp cou | Exp Ind | *World*	PC
33	EXGR_SERV_DVASH	2	Exp cou | Exp Ind | *World*	PC
34	EXGR_SERV_FVASH	2	Exp cou | Exp Ind | *World*	PC
35	IMGRINT_REII	2	Exp cou | Prod ind | *World*	PC
36	IMGR_DVASH	3	Imp cou | Exp ind | Exp cou	PC
37	IMGRpSH	3	Imp cou | Exp ind | Exp cou	PC
38	FFD_DVApSH	3	VA src cou | VA src ind | FD cou	PC
39	DFD_FVApSH	3	FD cou | VA src ind | VA src cou	PC
40	VALU_FFDDVA	2	VA src cou | VA src ind | *World*	PC
41	PROD_VASH	2	Prod cou | Prod ind | *World*	PC
42	FD_VASH	3	FD cou | VA src ind | VA src cou	PC
43	CONS_VASH	3	FD cou | VA src ind | VA src cou	PC
44	GFCF_VASH	3	FD cou | VA src ind | VA src cou	PC
45	DEXFVApSH	2	Exp cou | *Tot ind* | VA src cou	PC
46	FEXDVApSH	2	VA src cou | *Tot ind* | Exp cou	PC

Trade in Value Added (TiVA) - Datasets on Origins of value added				
N.	Code	number of dimensions	Indicator dimensions in OECD.STAT	Unit
2	EXGR_BSCI	4	VA src cou | VA src ind | Exp cou | Exp ind	USD
3	FDVA_BSCI	4	VA src cou | VA src ind | FD cou | FD ind	USD
4	FD_EXGR_VA	4	VA src cou | Exp cou | Exp ind | FD cou	USD
4	FD_EXGRFNL_VA	4	VA src cou | Exp cou | Exp ind | FD cou	USD
4	FD_EXGRINT_VA	4	VA src cou | Exp cou | Exp ind | FD cou	USD
5	IMGR_BSCI	4	Imp cou | VA src cou | Exp ind | Exp cou	USD

4 Structural Indicators based on the values presented in ICIO

4.1 PROD: Production (gross output), USD million

Indicator dimensions: [Prod cou | Prod ind | World]

This indicator is extracted directly from ICIO and defined as the production (gross output) *at basic prices* by industry *i* in country *c*:

$$PROD_{c,i} = X_{c,i}$$

The estimates are compatible, to the greatest extent possible, with the latest available official 2008 System of National Accounts (2008 SNA) annual statistics.

For most OECD countries, gross output by industry time series are drawn from the OECD STAN Database (http://oe.cd/stan), or the OECD Annual National Accounts, adapted to the industry classification of the ICIO system. For other countries, particularly non-OECD economies, sources include United Nations Statistics Division (UNSD) and Eurostat databases as well as National Accounts statistics published by national statistical institutes.

Where necessary, industry estimates of gross output are calculated by drawing on other sources such as national Supply and Use tables (SUTs), Input-Output tables (IOTs) and, structural business statistics (industry survey data) such as UNIDO's INDSTAT Database.

4.2 VALU: Value added, USD million

Indicator dimensions: [Prod cou | Prod ind | World]

This indicator is extracted directly from ICIO and is defined here as production (gross output) *at basic prices* minus total intermediate inputs *at basic prices*. In other words, it represents value added *at basic prices* plus any *taxes less subsidies* on purchases of intermediate products by industries. Value added in the TiVA indicator system includes *taxes less subsidies* on intermediate products to maintain the condition of equity with final expenditures *at basic prices* (Total output *at basic prices* less intermediate consumption expenditures *at basic prices*).

Value added by industry *i* in country *c*:

$$VALU_{c,i} = W_{c,i}$$

Value added *at basic prices* reflects the value that is added by industry *i* in country *c* when producing goods and services. It follows the definition of value added used in the 2008 System of National Accounts (2008 SNA) and is equivalent to the difference between the industry's Production (gross output) *at basic prices* and the sum of its intermediate inputs of goods and services *in purchasers' prices*.

Value added *at basic prices* consists of Compensation of employees, Consumption of fixed capital, and Net operating surplus and mixed income (i.e. profits and income of the self-employed and family members). It also includes 'Other taxes, less subsidies, on Production' (such as payroll taxes).

The sources for value added are the same as those used for gross output (see above).

4.3   PROD_VASH: **Value added as a share of Gross Output, by industry,** percentage

Indicator dimensions: [Prod cou | Prod ind | World]

The value added share is given for each industry in each country, and represents value added generated by industry *i* in country *c*, $VALU_{c,i}$, as a percentage of gross output, $PROD_{c,i}$.

$$PROD\_VASH_{c,i} = \frac{VALU_{c,i}}{PROD_{c,i}} = V_{c,i}$$

Industry value added / gross output ratios are a major determinant of a country's shares of value added embodied in trade and final demand.

For the OECD as a whole, in 2022, about 34% of gross output in the manufacturing sector consisted of value added (+ net taxes on intermediate products) generated in production. Large OECD economies such as Germany, Japan, the United Kingdom and the United States had shares between 34% and 40%. These shares were higher than those for China, the aggregate of Southeast Asian (ASEAN) countries, and the European Union (EU27) with 25%, 29% and 31% respectively. In many OECD countries, value added shares of gross output in 2022 were lower than five years previously (Figure 4.1).

Figure 4.1. Value added as a percentage of Gross Output, Total Manufacturing, 2017 and 2022
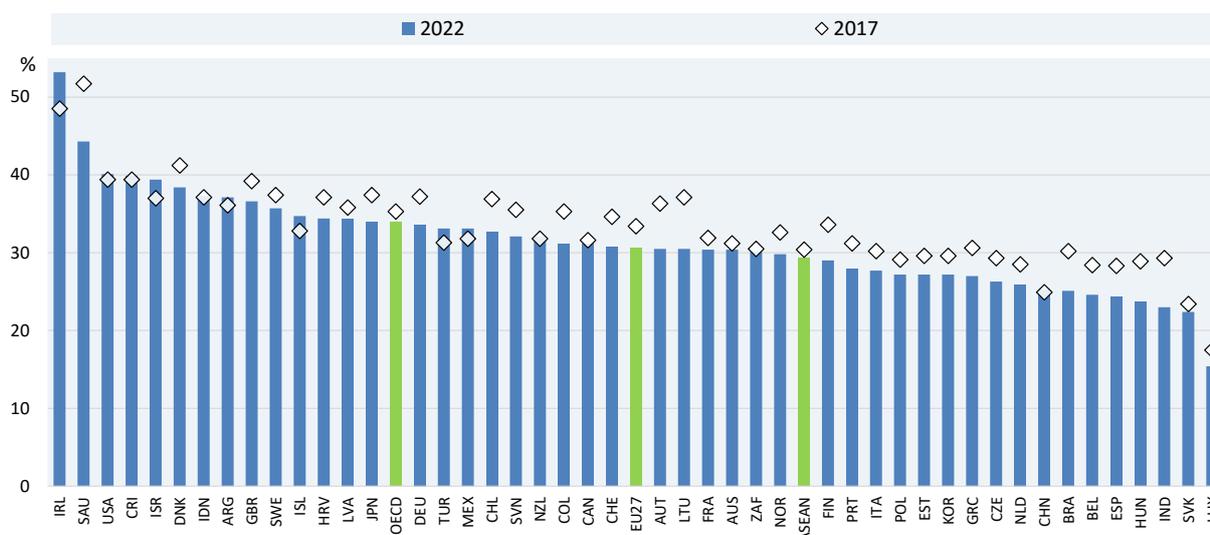
Box 1. The choice of TiVA indicators and their dimensions

Indicators of global flows of goods and services can be considered from four perspectives: the origin of value added, exporters, importers and final consumers. Each with a country and industry (or product group) dimension.
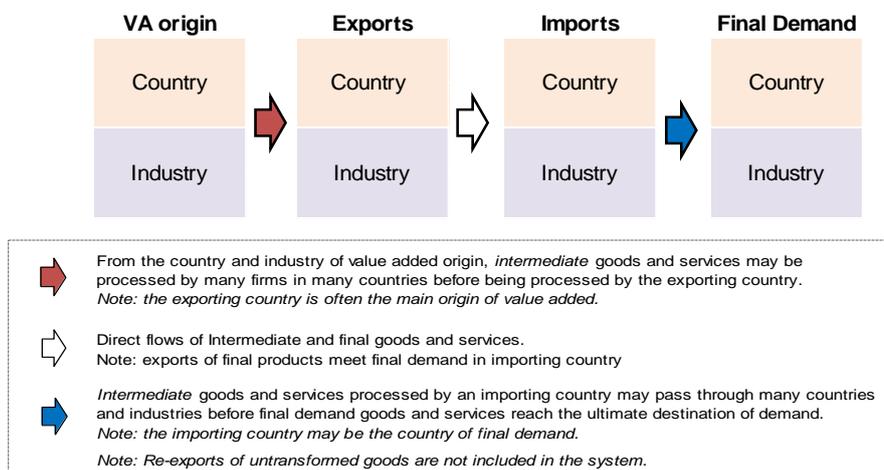
Thus, Indicators could be produced that reveal, for example: a) value added from the Chinese basic metals industry; b) embodied in Japanese exports of ICT components; c) imported by the Mexican machinery industry; and d) ultimately meeting US final demand for motor vehicles.

However, with 81 countries (including Rest of the World) and 50 industries/product groups, there are potentially about $(81 \times 50)^4 \approx 269,000,000,000,000$ combinations.

Although many of the combinations have no meaning, this estimate does not consider regional groups, industry aggregates, splitting final demand into Gross fixed capital formation (GFCF) and Household consumption, splitting exports into intermediates and final goods and services and, the variety of ratios and shares that can be calculated. A very small fraction of the possibilities will meet the majority of analytical needs, and the challenge is to identify a set of easy-to-use TiVA indicators for policy analysts and researchers i.e. indicators with 2, 3 or 4 dimensions.

As an aid to understanding the dimensions of the indicators provided, simple illustrative diagrams are provided alongside the definitions. For example, in the principal indicators (with 2 or 3 dimensions), *Domestic value added content of gross exports* (EXGR_DVA) can be represented as:

While the Foreign services value added share of gross exports is illustrated thus:

Similarly, for the indicators with 4 dimensions such as *Value added origin of gross exports* (*EXGR_BSCI*) and *Value added origin of final demand* (*FDVA_BSCI*) we have the following:

4.4   EXGR | EXGR_INT | EXGR_FNL: Gross exports, by industry and by partner country, USD million (f.o.b.)

Indicator dimensions:
[Exp cou | Exp ind | Imp cou]

VA origin	Exports	Imports	Final Demand
all countries	Country **(c)**	Country (p)	
all industries	Industry (i)		

Country c's total gross exports for a given industry i can be directly calculated from the ICIO system by summing exports in intermediate goods and services and exports of final demand goods and services.

$$\text{EXGR}_{c,i} = \sum_{p} \text{EXGR}_{c,i,p} = \sum_{p} (\text{EXGR\_INT}_{c,i,p} + \text{EXGR\_FNL}_{c,i,p})$$

where $\text{EXGR\_INT}_{c,i,p}$ represents gross exports of intermediate goods and services from domestic industry i in country c to partner country p, and $\text{EXGR\_FNL}_{c,i,p}$ is gross exports of final demand goods and services, where c and $p \in [1,..,N]$ and $c \neq p$. They are calculated from the gross trade matrices as:

$$\text{EXGR\_INT}_{c,i,p} = \text{GRTR\_INT}_{(c-1)*N+i,p}$$

$$\text{EXGR\_FNL}_{c,i,p} = \text{GRTR\_FNL}_{(c-1)*N+i,p}$$

Note that the gross exports are consistent with official National Accounts estimates of total exports and imports of goods and services, adjusted for re-exports, as well as estimates for GDP. However, while National Accounts exports are valued *at purchaser's prices*, Gross exports for TiVA indicators are valued *at basic prices* in line with the valuation used throughout the ICIO tables. When transforming exports from *purchasers' prices* to *basic prices*, one of the main adjustments is the reallocation of the domestic distribution margins, (inherent in exports of goods *at purchasers' prices*) to exports of services (wholesale, retail and transportation). A consequence is that, for many countries, total exports of services in the TiVA database may be significantly higher than total exports of services reported in National Accounts (and Balance of Payments) statistics.

EXGR includes both cross-border flows and direct expenditure by non-residents on the domestic territory. Estimates of bilateral exports by industry are based on the balanced trade system drawn from the ICIO database. "Unspecified export destination" (i.e. any discrepancy between exports and imports) is allocated to the partner "Rest of the World".

For regions, EXGR excludes intra-regional trade (e.g. for EU27, exports to non-EU27 partners only)

4.5 IMGR | IMGR_INT | IMGR_FNL: Gross imports, by industry and by partner country, USD million (f.o.b.)

Indicator dimensions:
[Imp cou | Exp ind | Exp cou]

VA origin	Exports	Imports	Final Demand
all countries	Country (p)	Country **(c)**	
all industries	Industry (i)		

Total imports of country c are measured as:

$$\text{IMGR}_{c,i} = \sum_p \text{IMGR}_{c,i,p} = \sum_p (\text{IMGR\_INT}_{c,i,p} + \text{IMGR\_FNL}_{c,i,p})$$

where $\text{IMGR\_INT}_{c,i,p}$ is gross imports of intermediates by country c from industry i in country p; and $\text{IMGR\_FNL}_{c,i,p}$ is gross imports of final demand goods and services.

They can be calculated from the gross trade matrices as:

$$\text{IMGR\_INT}_{c,i,p} = \text{GRTR\_INT}_{(p-1)*N+i,c}$$

$$\text{IMGR\_FNL}_{c,i,p} = \text{GRTR\_FNL}_{(p-1)*N+i,c}$$

See also the notes for the EXGR indicators, which also apply to the IMGR indicators.

4.6 BALGR: Gross trade balance, by partner country, USD million (f.o.b.)

Indicator dimensions:
[Exp cou | Tot ind | Imp cou]

VA origin	Exports	Imports	Final Demand
all countries	Country **(c)**	Country (p)	
	$\sum$ all industries	$\sum$ all industries	

The gross trade balance is the difference between Gross exports, $EXGR_{c,p}$, and Gross imports, $IMGR_{c,p}$ and is provided for country c and partner p for total industry.

$$\text{BALGR}_{c,p} = \text{EXGR}_{c,p} - \text{IMGR}_{c,p}$$

Total goods and services trade balances provided in the TiVA database are generally aligned with those reported by national statistical offices.

However, differences between TiVA estimates and official national statistics may be apparent, particularly for bilateral trade balances. There are well documented reasons for such differences. For example, there are numerous asymmetries in official national trade statistics (country A's reported exports from Country B can differ, sometimes significantly, from Country B's reported imports from Country A, even when allowing for differences in valuation). Reasons include: *i)* the treatment of re-exports and transit trade through major regional trading hubs such as Belgium, Netherlands, Hong Kong (China), Singapore and United States: exporters may report their exports by country of consignment while the importers report the imports by country of origin; and *ii)* coverage and quality issues (missing data etc.) that affect official bilateral data particularly for trade in services.

By necessity, to generate a balanced view of bilateral trade by industry (product group) in the ICIO system, missing data are estimated and exports and imports adjusted to eliminate asymmetries. The resulting exports matrix is thus a transpose of the imports matrix.

See also notes for EXGR and IMGR.

4.7 EXGRpSH: Gross exports, partner shares, percentage

Indicator dimensions:
[Exp cou | Exp ind | Imp cou]

VA origin	Exports	Imports	Final Demand
all countries	Country **(c)**	Country (p)	
all industries	Industry (i)		

The partner shares are calculated for each country, industry and partner country by dividing by total exports of the industry and country. The industry is the exporting industry.

$$EXGRpSH_{c,i,p} = \frac{EXGR_{c,i,p}}{\sum_p EXGR_{c,i,p}} \times 100$$

4.8 IMGRpSH: Gross imports, partner shares, percentage

Indicator dimensions:
[Imp cou | Exp ind | Exp cou]

VA origin	Exports	Imports	Final Demand
all countries	Country (p)	Country **(c)**	
all industries	Industry (i)		

The partner shares are calculated for each country, industry and partner country by dividing by total imports of the industry and country. The industry refers to the exporting industry (i.e. from country c's perspective, the industry of origin of the imports).

$$IMGRpSH_{c,i,p} = \frac{IMGR_{c,i,p}}{\sum_p IMGR_{c,i,p}} \times 100$$

5 Indicators on the origins of value added in gross exports and imports

5.a Domestic value added content of gross exports

5.1 EXGR_DVA: Domestic value added content of gross exports, USD million

Indicator dimensions:
[Exp cou | Exp ind | Imp cou]

VA origin	Exports	Imports	Final Demand
country = c	Country **(c)**	Country (p)	
all industries	Industry (i)		

$EXGR\_DVA_{c,i,p}$, Domestic Value Added content of exports, by industry i in country/region c to partner country/region p, represents the exported value added that has been generated anywhere in the domestic economy (i.e. not just by the exporting industry).

$$EXGR\_DVA_{c,i,p} = V_c B_{c,c} EXGR_{c,i,p}$$

Where $EXGR_{c,i,p}$ is a $K \times 1$ vector with all entries equal to zero except those corresponding to industry i.

For regions c, EXGR_DVA excludes intra-regional trade (e.g. for EU27, exports to non-EU27 partners only) and intra-regional value added flows (e.g. German value added in French exports) are treated as domestic value added. In other words, a region is treated as a single economy. Alternatively, region averages can be calculated (see Box 2).

The domestic value added content of gross exports can be split further into three components, direct domestic industry value added (EXGR_DDC, see 5.5), indirect domestic value added (EXGR_IDC, see 5.6) and re-imported domestic value added (EXGR_RIM, see 5.7).

5.2 EXGR_DVASH: Domestic value added share of gross exports, percentage

Indicator dimensions:
[Exp cou | Exp ind | World]

VA origin	Exports	Imports	Final Demand
country = c	Country **(c)**		
all industries	Industry (i)		

The share of domestic value added in gross exports is available by industry for partner world is defined as domestic value added in gross exports, $EXGR\_DVA_{c,i}$, as a percentage of total gross exports, $EXGR_{c,i}$:

$$EXGR\_DVASH_{c,i} = \frac{\sum_p EXGR\_DVA_{c,i,p}}{\sum_p EXGR_{c,i,p}} \times 100$$

It is a 'DVA intensity measure' and reflects how much value added, generated anywhere in the domestic economy, is embodied per unit of total gross exports by industry, i.

For regions c, EXGR and EXGR_DVA exclude intra-regional trade (e.g. for EU27, exports to non-EU27 only) and for EXGR_DVA, intra-region value added flows are treated as domestic value added. Hence, for EXGR_DVASH, a region is treated as a single economy.

See also the notes for EXGR_DVA and EXGR_TDVAIND.

5.3 EXGR_TDVAIND: Industry domestic value added contribution to gross exports, as a percentage of total gross exports

Indicator dimensions:
[Exp cou | Exp ind | World]

VA origin	Exports	Imports	Final Demand
country = c	Country **(c)**		
all industries	Industry (i)		

This indicator reflects the share, in <u>total gross exports</u>, of domestic value added in an industry's exports. The sum over all industries is the total domestic value added share of gross exports (EXGR_DVASH)

$$EXGR\_TDVAIND_{c,i} = \frac{\sum_p EXGR\_DVA_{c,i,p}}{\sum_{p,i} EXGR_{c,i,p}} \times 100$$

While EXGR_DVASH$_{c,i}$ measures the intensity of Domestic value added in an industry's exports, EXGR_TDVAIND$_{c,i}$ captures the magnitude compared to other industries. Note that the sum of EXGR_TDVAIND across industries equals EXGR_DVASH for total industry.

See also the notes for EXGR and EXGR_DVA

5.4 EXGR_DVApSH: Domestic value added in gross exports, partner shares, percentage

Indicator dimensions:
[Exp cou | Exp ind | Imp cou]

VA origin	Exports	Imports	Final Demand
country = c	Country **(c)**	Country (p)	
all industries	Industry (i)		

For each country and industry, this indicator shows the importing partner distribution of domestic value added in gross exports.

$$EXGR\_DVApSH_{c,i,p} = \frac{EXGR\_DVA_{c,i,p}}{\sum_p EXGR\_DVA_{c,i,p}} \times 100$$

See also the notes for EXGR_DVA.

5.b Decomposition of domestic value added content of gross exports

5.5   EXGR_DDC: Direct domestic industry value added content of gross exports, USD million

Indicator dimensions:
[Exp cou | Exp ind | World]

VA origin	Exports	Imports	Final Demand
country =c	Country (c)		
industry =i	Industry (i)		

Direct domestic value added content of exports, *EXGR_DDC$_{c,i}$*, measures the direct value added contribution made by industry *i* in country *c* to the production of goods and services exported by industry *i* to the world

$$EXGR\_DDC_c = \widehat{V}_c diagB_c EXGR_c$$

where $EXGR\_DDC_c$ is a *K×1* vector representing the industry dimension and A_c is a local I-O coefficient matrix from country *c* single Input-Output table and $B_c = (I - A_c)^{-1}$ is the local Leontief inverse. Matrix $diagB_c$ consists of the diagonal elements of the local Leontief inverse, i.e. those entries of the matrix displaying the direct requirements.

$EXGR\_DDC_{c,i}$ is the *i-th* element of the *K×1* vector $EXGR\_DDC_c$, and gives direct domestic value added content of gross export of a given industry *i*.

It does not include domestic value added that has returned, via imports, after previously being exported (embodied in intermediates) i.e. only the value added directly generated by domestic industries in producing goods and services prior to export is covered.

5.6   EXGR_IDC: Indirect domestic value added content of gross exports (originating from domestic intermediates), USD million

Indicator dimensions:
[Exp cou | Exp ind | World]

VA origin	Exports	Imports	Final Demand
country =c	Country (c)		
∑industry ≠ i	Industry (i)		

Indirect domestic value added content of exports, EXGR_IDC$_{c,i}$, corresponds to the value added originating from other, upstream, domestic industries (different from industry *i*) in country *c* that are incorporated in the exports of industry *i*.

$$EXGR\_IDC_c = \widehat{V}_c offdiagB_c EXGR_c$$

where $EXGR\_IDC_c$, is a *K×1* vector representing the industry dimension and A_c is a local I-O coefficient matrix from country *c* single Input-Output table and $B_c = (I - A_c)^{-1}$ is the local Leontief inverse. Matrix $offdiagB_c$ is the local Leontief inverse with all diagonal elements set to zero, thus representing the indirect requirements.

$EXGR\_IDC_{c,i}$ is the *i-th* element of the *K×1* vector $EXGR\_IDC_c$, and gives indirect domestic value added content of gross export of a given industry *i*.

It does not include domestic value added that has returned, via imports, after previously being exported (embodied in intermediates) i.e. only the value added directly generated by domestic industries in producing goods and services prior to export is covered.

5.7 **EXGR_RIM: Re-imported domestic value added content of gross exports,** USD million

Indicator dimensions:
[Exp cou | Exp ind | World]

VA origin	Exports	Imports	Final Demand
country =c	Country (c)		
all industries	Industry (i)		

Re-imported domestic value added content of exports, $EXGR\_RIM_{c,i}$, measures the domestic value added content, from any industry in country c, which has been exported for the production of intermediate goods or services abroad and subsequently embodied in imports used in the production of exports by industry i in country c.

$$EXGR\_RIM_c = EXGR\_DVA_c - EXGR\_DDC_c - EXGR\_IDC_c$$

where $EXGR\_RIM_c$ is a $K{\times}1$ vector representing the industry dimension, and the other variables are as defined before.

$EXGR\_RIM_{c,i}$ is the *i-th* element of the $K{\times}1$ vector $EXGR\_RIM_c$, and gives the re-imported domestic value added content of gross exports of a given industry *i*.

5.c Foreign value added content of gross exports *(backward participation in GVCs)*

5.8   EXGR_FVA: Foreign value added content of gross exports, USD million

Indicator dimensions:
[Exp cou | Exp ind | World]

VA origin	Exports	Imports	Final Demand
∑country ≠ c	Country (c)		
all industries	Industry (i)		

Foreign value added content of gross exports captures the value of imported intermediate goods and services that are embodied in a domestic industry's exports. The value added can come from any foreign industry upstream in the production chain.

$$EXGR\_FVA_{c,i} = \widehat{V} \; B_{ci} EXGR_{c,i}$$

B_{ci} is the column of B corresponding to *inputs used by industry i* in country *c*, where the rows corresponding to inputs from origin industries in country c are set to zero.

Note that EXGR_FVA includes re-imported foreign value added that was previously exported by country *c* (c.f. EXGR_RIM)

For regions c, EXGR_FVA excludes intra-regional trade (e.g. for EU27, exports to non-EU27 only). Intra-region value added flows (e.g. German value added in French exports) are treated as domestic value added. In other words, a region is treated as a single economy. Alternatively, region averages can be calculated (see Box 2).

5.9   EXGR_FVASH: Foreign value added share of gross exports, percentage

Indicator dimensions:
[Exp cou | Exp ind | World]

VA origin	Exports	Imports	Final Demand
∑country ≠ c	Country (c)		
all industries	Industry (i)		

The share of foreign value added in gross exports is available by industry for partner world, and is defined as foreign value added embodied in gross exports $EXGR\_FVA_{c,w,i}$, as a percentage of total gross exports, $EXGR_{c,w,i}$.

$$EXGR\_FVASH_{c,i} = \frac{\sum_p EXGR\_FVA_{c,i,p}}{\sum_p EXGR_{c,i,p}} \times 100$$

It is a 'FVA intensity measure' often referred to as 'import content of exports' and considered as a measure of 'backward linkages' in analyses of GVCs.

See also notes for EXGR_FVA and EXGR_TFVAIND.

Box 2. Indicators for region aggregates

Foreign value added share of gross exports

Total manufactures, 2022
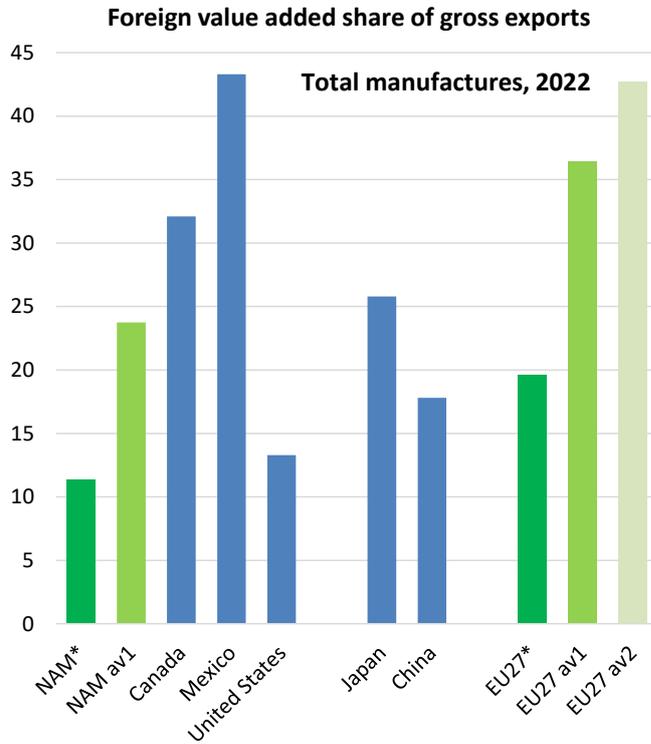
When considering regions (e.g. the European Union, EU27 and North America, NAM) there are alternative approaches to calculating certain indicators: weighted or unweighted averages of the countries within the region or, *treating the region as if it was a single economy*. For example, for the measure Foreign Value Added share of gross exports:

1. As a single economy (EU27*): gross exports to non-EU27 only and intra-region flows of value added are considered as domestic flows: i.e. value added generated in non-EU27 countries embodied in EU27 exports to non-EU27 economies (*this is the approach used for TiVA indicators*);

2. Weighted average of region's countries' Foreign value added content of gross exports: ∑(EXGR_FVA)/∑(EXGR). Intra-regional VA flows are considered foreign. Intra-regional exports included (see EU27av1, NAMav1);

3. Unweighted average of region's countries' Foreign value added share of gross exports i.e. average (EXGR_FVA/EXGR) Intra-regional value added flows are considered foreign. Intra-regional exports included (see EU27av2).

Note: Treating the European Union as a single economy yields foreign value added shares of gross exports closer to those of China, Japan and the United States.

5.10 **EXGR_TFVAIND** Industry foreign value added contribution to gross exports, as a percentage of total gross exports

Indicator dimensions:
[Exp cou | Exp ind | World]

VA origin	Exports	Imports	Final Demand
∑country ≠ c	Country **(c)**		
all industries	Industry (i)		

This indicator reflects the share, in <u>total gross exports</u>, of foreign value added in an industry's exports. The sum over all industries is the total foreign value added share of gross exports (EXGR_FVASH)

$$EXGR\_TFVAIND_{c,i} = \frac{\sum_p EXGR\_FVA_{c,i,p}}{\sum_{p,i} EXGR_{c,i,p}} \times 100$$

While $EXGR\_FVASH_{c,i}$ measures the *intensity* of FVA in an industry's exports, $EXGR\_TFVAIND_{c,i}$ captures the *magnitude* compared to other industries. Sum of EXGR_TFVAIND across industries equals EXGR_FVASH for total industry.

Figure 5. Example of EXGR_FVASH versus EXGR_TFVAIND
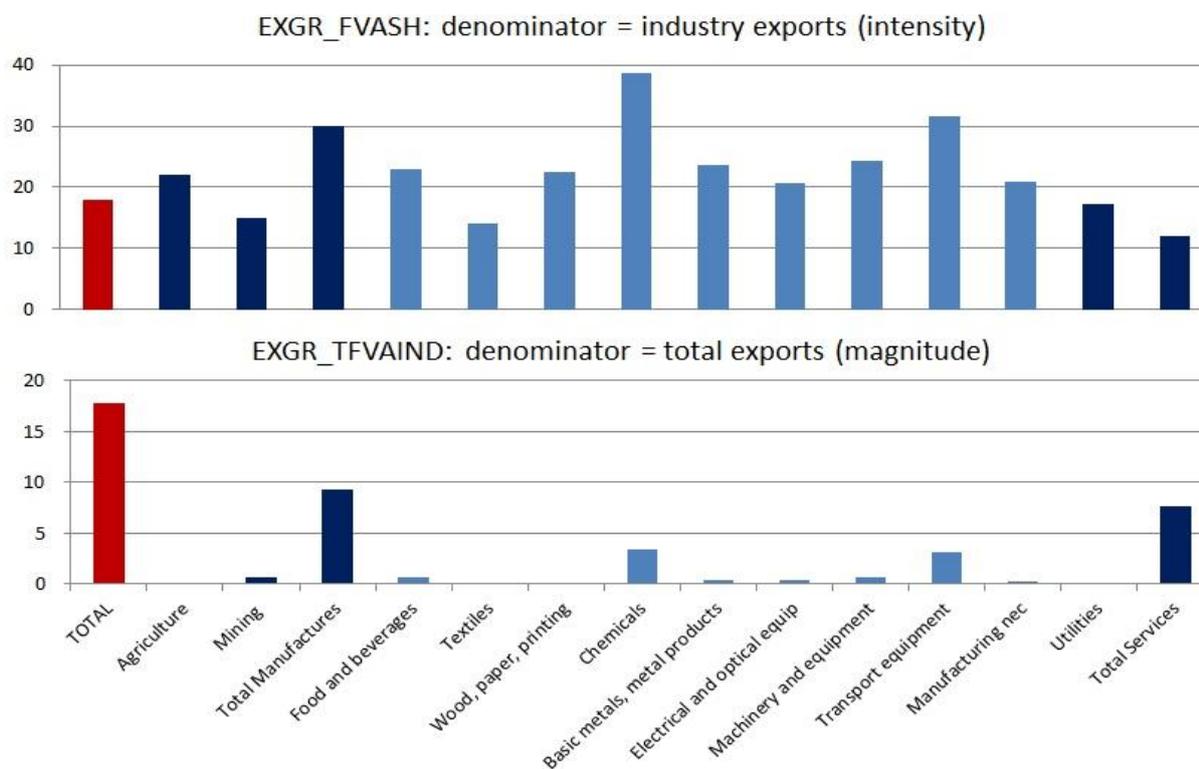
5.11 DEXFVApSH: Backward participation in GVCs, percentage

Indicator dimensions:
[Exp cou | Tot ind | VA src cou]

VA origin	Exports	Imports	Final Demand
Country (p)	Country (c)		
country = p			
∑ all industries	∑ all industries		

Foreign VA embodied in exports, as % of total gross exports of the exporting country.

This indicator is calculated for the total value of source and exporting industries; it is estimated as the ratio between the VA contents of imports from the source country p and the gross exports of the exporting country c.

This indicator is estimated as:

$$DEXFVApSH_{c,p} = \frac{EXGR\_BSCI_{c,p}}{EXGR_c} \times 100$$

Where $EXGR\_BSCI_{c,p}$, see 7.1, is the total VA from country p embodied in the total exports of exporting country c, and $EXGR_c$ is the total gross exports of exporting country c.

5.d Domestic value added content of foreign gross exports (*forward participation in GVCs*)

5.12 EXGR_DVAFXSH: Domestic value added embodied in foreign exports as a share of gross exports, percentage

Indicator dimensions:
[VA src cou | Exp ind | World]

VA origin	Exports	Imports	Final Demand
Country (c)	$\sum$country $\neq$ c		
	Industry (i)		

This indicator presents the country c domestic value added content embodied in the gross exports of industry i in foreign countries as a percentage of total gross exports of country c.

$$EXGR\_DVAFXSH_{c,i} = \frac{\sum_p EXGR\_BSCI_{c,i,p}}{EXGR_c} \times 100$$

Where $EXGR\_BSCI_{c,p,i}$, see 7.1, is the total VA from country c embodied in the total gross exports of industry i in foreign country p, and $EXGR_c$ is the total gross exports of value added source country c.

It is often considered as a measure of 'forward linkages' in analyses of GVCs.

5.13 FEXDVApSH: Forward participation in GVCs, percentage

Indicator dimensions:
[VA src cou | Tot ind | Exp cou]

VA origin	Exports	Imports	Final Demand
Country (c)	Country (p)		
country = c			
$\sum$ all industries	$\sum$ all industries		

Domestic VA embodied in foreign exports, as a share (%) of total gross exports of the value added source country.

This indicator is calculated for the total value of source and exporting industries; it is estimated as being the VA contents of exports originated in the source country, and embodied in the exports of the exporting country, divided by the gross exports of the source country.

This indicator is estimated as:

$$FEXDVApSH_{c,p} = \frac{EXGR\_BSCI_{c,p}}{EXGR_c} \times 100$$

Where $EXGR\_BSCI_{c,p}$, see 7.1, is the total VA from country c embodied in the exports of country p, and $EXGR_c$ is the total gross exports of the value added source country c.

5.e Domestic value added content of intermediate and final gross exports

5.14 EXGR_INTDVASH: Domestic value added in exports of <u>intermediate products,</u> as a share of total gross exports, percentage

Indicator dimensions:
[Exp cou | Exp ind | World]

VA origin	Exports	Imports	Final Demand
country =c	Country (c)		
all industries	Industry (i)		
	Intermediates		

This indicator shows the share of domestic value added in exports of intermediate goods and services as a share of total gross exports. The indicator is available by country and industry.

$$EXGR\_INTDVASH_{c,i} = \frac{\sum_p EXGR\_INTDVA_{c,i,p}}{\sum_p EXGR_{c,i,p}} \times 100$$

$EXGR\_INTDVASH_{c,i}$ is defined as domestic value added in gross exports of intermediate products, by industry i in country c, as a percentage of total industry exports, $EXGR_{c,i}$. It reveals the share of industry exports that consists of domestic value added destined for further production within direct partners' economies - either to meet partners' final demand or to be embodied in exports by direct partners. It can be considered as a measure of forward linkages in global value chains (GVCs).

5.15 EXGR_FNLDVASH: Domestic value added in exports of <u>final products,</u> as a share of total gross exports, percentage

Indicator dimensions:
[Exp cou | Exp ind | World]

VA origin	Exports	Imports	Final Demand
country =c	Country (c)		
all industries	Industry (i)		
	Final products		

This indicator shows the share of domestic value added in exports of final goods and services as a share of total gross exports. The indicator is available by country and industry.

$$EXGR\_FNLDVASH_{c,i} = \frac{\sum_p EXGR\_FNLDVA_{c,i,p}}{\sum_p EXGR_{c,i,p}} \times 100$$

$EXGR\_FNLDVASH_{c,i}$ is defined as domestic value added in gross exports of final demand products, by industry *i* in country *c*, as a percentage of total industry exports, $EXGR_{c,i}$.

Note: EXGR_INTDVASH + EXGR_FNLDVASH = EXGR_DVASH.

5.16 EXGR_INTDVApSH: Domestic value added in exports of <u>intermediate products,</u> **partner shares**, percentage

Indicator dimensions:
[Exp cou | Exp ind | Imp cou]

VA origin	Exports	Imports	Final Demand
country = c	Country (c)	Country (p)	
all industries	Industry (i)		
	Intermediates		

This indicator presents, for a given industry i in country c, the domestic value added content of gross exports of intermediate goods and services (including the direct and upstream domestic value-added content) to immediate partner country, *p*, as a percent of total domestic value added content of gross exports of intermediates *i*.

$$EXGR\_INTDVApSH_{c,i,p} = \frac{EXGR\_INTDVA_{c,i,p}}{\sum_p EXGR\_INTDVA_{c,i,p}} \times 100$$

5.f Services value added content of gross exports

The indicators dealing with service value added content consider only the service industries as a source of value added in the exports by all industries. Service industries include *Construction*, *Wholesale and retail*, *Accommodation and food services*, *Transportation services*, *Information and communications*, *Financial and insurance*, *Real estate*, *Professional, scientific and technical services*, *Administrative and support services*, *Public Administration*, *Health*, *Education* and *Personal services* i.e. defined a ISIC Rev.4 Divisions 41 to 98

5.17 EXGR_SERV_DVASH: Domestic services value added share in gross exports, percentage

Indicator dimensions:
[Exp cou | Exp ind | World]

VA origin	Exports	Imports	Final Demand
country =c	Country (c)		
	Industry (i)		
∑ services			

$EXGR\_SERV\_DVASH_{c,i}$ is the share of value added originating from all <u>domestic</u> service industries in total gross exports by industry *i* in country *c* and defined as :

$$EXGR\_SERV\_DVASH_{c,i} = \frac{EXGR\_SERV\_DVA_{c,i}}{EXGR_{c,i}} \times 100$$

where:

$$EXGR\_SERV\_DVA_{c,i} = \sum_{j \in S} \widehat{V_{c,J}} \left(B_{c,c}\right)_{ji} EXGR_{c,i}$$

$\widehat{V_{c,J}}$ is the diagonal matrix $\widehat{V_c}$, with all entries corresponding to industry $i \neq j$ equal to zero and the element corresponding to $j \in S$ to the value added share of service industry *j* in country *c*. *S* is the set of service industry indices. $\left(B_{c,c}\right)_{ji}$ is *ji-th* element of $B_{c,c}$.

5.18 EXGR_SERV_FVASH: Foreign services value added share in gross exports, percentage

Indicator dimensions:
[Exp cou | Exp ind | World]

VA origin	Exports	Imports	Final Demand
∑ country ≠ c	Country (c)		
∑ services	Industry (i)		

$\text{EXGR\_SERV\_FVASH}_{c,i}$ is the share of value added originating from all <u>foreign</u> service industries in total gross exports by industry i in country c and defined as:

$$\text{EXGR\_SERV\_FVASH}_{c,i} = \frac{\text{EXGR\_SERV\_FVA}_{c,i}}{\text{EXGR}_{c,i}} \times 100$$

where:

$$\text{EXGR\_SERV\_FVA}_{c,i} = \sum_{p} \sum_{j \in S} \widehat{V_{p,j}} \left(B_{p,c} \right)_{ji} \text{EXGR}_{c,p,i}$$

$\widehat{V_{c,j}}$ is the diagonal matrix $\widehat{V_c}$, with all entries corresponding to industry $i \neq j$ equal to zero and the element corresponding to $j \in S$ to the value added share of service industry j in country c. S is the set of service industry indices. $\left(B_{p,c} \right)_{ji}$ is the *ji-th* element of $B_{p,c}$.

5.g Domestic value added in imports

5.19 IMGR_DVA: Domestic value added embodied in gross imports, USD million

Indicator dimensions:
[Imp cou | Exp ind | Exp cou]

VA origin	Exports	Imports	Final Demand
country = c	Country (p)	Country (c)	
	Industry (i)		

Domestic value added content of gross imports reveals the value added generated in country c that returns to country c embodied in gross imports from industry i in partner country p.

$$IMGR\_DVA_{c,i,p} = \widehat{V}_c B_{c,i,p} IMGR_{c,i,p}$$

Where $IMGR_{c,i,p}$ is a K×K diagonal matrix with the imports of country c from the exporting industries of partner country p.

5.20 IMGR_DVASH: Domestic value added share of gross imports, percentage

Indicator dimensions:
[Imp cou | Exp ind | Exp cou]

VA origin	Exports	Imports	Final Demand
country = c	Country (p)	Country (c)	
	Industry (i)		

Domestic value added share of gross imports (IMGR_DVASH) is defined as the domestic value added embodied in gross imports (IMGR_DVA) by exporting industry i of exporting country p divided by total gross imports of exporting industry i of exporting country p, in %. It is a 'DVA intensity measure' and reflects how much domestic value-added is embodied per unit of total gross imports from exporting industry i of exporting country p:

$$IMGR\_DVASH_{c,i,p} = \frac{IMGR\_DVA_{c,i,p}}{\sum_p IMGR_{c,i,p}} \times 100$$

It can reveal the extent to which previously exported domestic value added returns to the domestic economy, via imports of both final and intermediate goods and services, after passing through regional or global production chains.

5.h Re-exported intermediate imports

5.21 REII: Re-exported intermediate imports, USD million

Indicator dimensions:
[Exp cou | Prod ind | World]

imports	Exports	Imports	Final Demand
	Country (c)		
∑intermediates	Industry (i)		

Imported products which are used as inputs into production processes and then exported again are referred to as re-exported intermediate products. This indicator is available by country and exporting industry.

$$\text{REII}_{c,i} = \sum_p A_{p,c}\, B_{c,c} \text{EXGR}_{c,i}$$

$A_{p,c}$ is a $K{\times}K$ off-diagonal block matrix of A giving country c imported intermediate products sourced from country p required to produce one unit of output.

$\text{EXGR}_{c,i}$ is a $K{\times}1$ vector, representing total exports of each industry i of country c to all other countries.

$A_{p,c} B_{c,c} \text{EXGR}_c$, is also a $K{\times}1$ vector and refers to intermediate goods and services absorbed in country c that originated from country p for total exports by country c.

$\text{REII}_{c,i}$ gives total intermediate goods and services absorbed by country c that originated from all foreign countries in industry i. It reveals the importance of intermediate imports in the production of goods and services for export and their role as a source for international competitiveness.

5.22 IMGRINT_REII: Re-exported intermediate imports, as a share of total intermediate imports, percentage

Indicator dimensions:
[Exp cou | Prod ind | World]

imports	Exports	Imports	Final Demand
	Country (c)		
∑intermediates	Industry (i)		

Re-exported intermediate imports by exporting industry as a share of intermediate imports shows how much of the imports are exported.

$$\text{IMGRINT\_REII}_{c,i} = \frac{\text{REII}_{c,i}}{\sum_p \text{IMGR\_INT}_{c,i,p}}$$

Where $\sum_p \text{IMGR\_INT}_{c,i,p}$ is total intermediate imports by country c from industry i in partner p.

This indicator reflects the share of intermediate imports from all partners' industry i that are used domestically by country c (both indirectly and directly) in producing goods and services for export, as a percentage of total intermediate imports (from industry i).

The indicator provides a measure of the importance of intermediate imports to produce goods and services for export and their role as a source of international competitiveness.

6 Indicators on the origins of value added in final demand

6.1 FFD_DVA: Domestic value added embodied in foreign final demand, USD million

Indicator dimensions:
[VA src cou | VA src ind | FD cou]

VA origin	Exports	Imports	Final Demand
Country (c)			Country (p) ≠ c
Industry (i)			

Domestic value added embodied in foreign final demand captures the value added that industries export both directly, through exports of final goods or services and, indirectly via exports of intermediates that reach foreign final consumers (households, government, business investment) through other countries. The measure reflects how domestic industries (upstream in a value-chain) are connected to consumers in other countries, even when no direct trade relationship exists. The indicator illustrates therefore the full impact of final demand in foreign markets on domestic output. It can be interpreted as 'exports of value added', and is defined as:

$$FFD\_DVA_{c,p} = \left(\widehat{\mathbf{V}}\,\mathbf{B}\,\mathbf{FD}\right)_{c,p}$$

Where $FFD\_DVA_{c,p}$ is a *K×1* vector. Matrix $\widehat{\mathbf{V}}\,\mathbf{B}\,\mathbf{FD}$ is of size *(KN×K)* and calculated from multiplying the three global matrices, $\widehat{\mathbf{V}}$, the diagonalized value added share of production PROD_VASH, **B** the global Leontief inverse and **FD** the global final demand matrix showing the demand of country p (in columns) for goods and services from industry i in country c (rows), and $\left(\widehat{\mathbf{V}}\,\mathbf{B}\,\mathbf{FD}\right)_{c,p}$ is the part of the matrix with *K* rows (one for each industry) corresponding to country *c* and column corresponding to country *p*. This is only available for $p \neq c$. FFD_DVA is available by value added country, value added industry, and partner country.

$FFD\_DVA_{c,p,i}$ is the *i-th* element of the *K×1* vector $FFD\_DVA_{c,p}$

$FFD\_DVA_{c,p,i}$ shows the value added originating from industry *i* in country/region *c* embodied in the final demand of country/region *p*.

For regions *c*, FFD_DVA excludes within-region final demand (e.g. for EU27, final demand in non-EU27 economies only).

6.2 FFD_DVApSH: Domestic value added embodied in foreign final demand, partner shares, percentage

Indicator dimensions:
[VA src cou | VA src ind | FD cou]

VA origin	Exports	Imports	Final Demand
Country (c)			Country (p) ≠ c
Industry (i)			

This indicator shows domestic value added generated by industry *i* in country *c* embodied in final demand of country *p* as a percentage of total domestic value added from industry *i* in foreign final demand:

$$\text{FFD\_DVApSH}_{c,i,p} = \frac{\text{FFD\_DVA}_{c,i,p}}{\sum_p \text{FFD\_DVA}_{c,i,p}} \times 100$$

FFD_DVApSH is available by country and industry origin of value added and final demand partner country.

It provides a value added perspective of domestic industries' relative connectedness with other countries and regions - independent of whether or not domestic (upstream) industries are direct exporters. Compare with EXGRpSH and EXGR_DVApSH

6.3 VALU_FFDDVA: Domestic value added embodied in foreign final demand as a share of total value added, percentage

Indicator dimensions:
[VA src cou | VA src ind | World]

VA origin	Exports	Imports	Final Demand
Country (c)			
Industry (i)			

VALU_FFDDVA$_{c,i}$ for industry *i* in country *c* is defined as domestic value added, from industry *i*, meeting foreign final demand, FFD_DVA$_{c,i}$, as a percentage of industry *i* value added:

$$\text{VALU\_FFDDVA}_{c,i} = \frac{\sum_p \text{FFD\_DVA}_{c,i,p}}{\text{VALU}_{c,i}} \times 100$$

This is available by country and industry origin of value added. It can be considered as a measure of an industry's reliance on foreign final demand.

6.4   DFD_FVA: Foreign value added embodied in domestic final demand, USD million

Indicator dimensions:
[FD cou | VA src ind | VA src cou]

VA origin	Exports	Imports	Final Demand
Country (p) ≠ c			Country (c)
Industry (i)			

Foreign value added embodied in domestic final demand reveals the amount of foreign value added present in final goods or services purchased by households, government, non-profit institutions serving households or, as investments. It is the 'import' equivalent of FFD_DVA and can show how industries abroad (upstream in a value-chain) are connected to consumers at home, even where no direct trade relationship exists. It can be interpreted as 'imports of value-added', in such a way:

$$DFD\_FVA_{p,c} = \left(\hat{V} \, B \, FD\right)_{p,c}$$

$DFD\_FVA_{p,c}$ is the part of matrix $\hat{V} \, B \, FD$ with rows corresponding to country p industries and column c of domestic consumption. This is only available for $p \neq c$.

$DFD\_FVA_{p,c,i}$ is the i-th element of the $K \times 1$ vector $DFD\_FVA_{p,c}$

$DFD\_FVA_{p,c,i}$ shows the value added originating from industry i in country/region p embodied in the final demand of country/region c.

For regions c, DFD_FVA excludes within-region origin of value added (e.g. for EU27, foreign value added is non-EU27 origin only).

6.5   DFD_FVApSH: Foreign value added embodied in domestic final demand, partner shares, percentage

Indicator dimensions:
[FD cou | VA src ind | VA src cou]

VA origin	Exports	Imports	Final Demand
Country (p) ≠ c			Country (c)
Industry (i)			

This indicator shows foreign value added generated by industry i in country p embodied in domestic final demand of country c as a percentage of total foreign value added from industry i in domestic final demand.

$$DFD\_FVApSH_{c,i,p} = \frac{DFD\_FVA_{c,i,p}}{\sum_{p} DFD\_FVA_{c,i,p}} \times 100$$

DFD_FVApSH is available by country and, partner country and industry origin of value added.

It provides a value added perspective of a domestic economy's relative connectedness to production in other countries and regions - independent of whether or not there are direct imports from foreign (upstream) industries. Compare with IMGRpSH.

6.6 BALVAFD: Value added embodied in final demand, balance, USD million

Indicator dimensions:
[VA src cou | VA src ind | FD cou]

VA origin	Exports	Imports	Final Demand
Country (c)			Country (p) ≠ c
Industry (i)			

The balance is calculated as the difference between domestic value added embodied in foreign final demand and foreign value added in domestic final demand by value added origin industry.

$$\text{BALVAFD}_{c,i,p} = \text{FFD\_DVA}_{c,i,p} - \text{DFD\_FVA}_{c,i,p}$$

For each country *c* the total value added trade balance, summed over all industries and for partner World is equal to the equivalent total gross trade balance (BALGR). However, at the partner and industry level, BALVAFD can reveal trading relationships not evident when looking at the trade balances in gross terms.

$\text{BALVAFD}_{c,i,p}$ shows country *c* value added trade balance with country *p* for industry (or product group) *i*.

6.7 FD_VA | CONS_VA | GFCF_VA: Value added embodied in final demand, consumption and GFCF, USD million

Indicators dimensions:
[FD cou | VA src ind | VA src cou]

VA origin	Exports	Imports	Final Demand
Country (p)			Country (c)
Industry (i)			Consumption

Value added (from industry i in country p) in final demand (FD), consumption (CONS) and gross fixed capital formation (GFCF) of country *c* are defined as the *K×1* vectors (representing the *K* industries).

$$\text{FD\_VA}_{p,c} = \left(\hat{V} \, B \, FD \right)_{p,c}$$

$$\text{CONS\_VA}_{p,c} = \left(\hat{V} \, B \, CONS \right)_{p,c}$$

$$\text{GFCF\_VA}_{p,c} = \left(\hat{V} \, B \, GFCF \right)_{p,c}$$

Here, the indicator includes domestic value added embodied in domestic demand, i.e. $c = p$ is possible.

Total consumption, CONS, covers household consumption, government expenditure and NPISHs. It excludes direct purchases abroad by residents and non–residents direct purchases on domestic territory (*non-res*). It is a subset of FD_VA.

Gross fixed capital formation (GFCF), covers the demand for investment goods and services, by businesses and government in country *c*. It does not include change in inventories (*invnt*). It is also a subset of FD_VA.

In such a way: *FD_VA = (CONS_VA + GFCF_VA) + (non-res + invnt)*

6.8 FD_VASH | CONS_VASH | GFCF_VASH: Value added shares in final demand, consumption and GFCF, percentage

Indicators dimensions:
[FD cou | VA src ind | VA src cou]

VA origin	Exports	Imports	Final Demand
Country (p)			Country (c)
Industry (i)			Consumption

These indicators look on the demand side of the countries, i.e., for the total domestic demand (final demand, consumption or GFCF) of a country c they show what is the share of the value added from source country p industry i in country c total value added consumed and which has its origin in industry i. They are defined as follows:

$$FD\_VASH_{p,c,i} = \frac{FD\_VA_{p,c,i}}{\sum_p FD\_VA_{p,c,i}} \times 100$$

$$CONS\_VASH_{p,c,i} = \frac{CONS\_VA_{p,c,i}}{\sum_p CONS\_VA_{p,c,i}} \times 100$$

$$GFCF\_VASH_{p,c,i} = \frac{GFCF\_VA_{p,c,i}}{\sum_p GFCF\_VA_{p,c,i}} \times 100$$

Total consumption, CONS, covers household consumption, government expenditure and NPISHs. It excludes direct purchases abroad by residents. It is a subset of FD_VA.

Gross fixed capital formation (GFCF), covers the demand for investment goods and services, by businesses and government in country c. It is also a subset of FD_VA.

7 Detailed indicators for gross exports, gross imports and final demand

7.1 EXGR_BSCI: Origin of value added in gross exports, USD million

VA origin	Exports	Imports	Final Demand
Country (p)	Country (c)		
Industry (h)	Industry (i)		

Indicators dimensions:
[VA src cou | VA src ind | Exp cou | Exp ind]

Origin of value added in gross exports provides estimates of total gross exports by exporting industry i in country c broken down by the value added generated by source industry h in country p:

$$\text{EXGR\_BSCI}_{p,h,c,i} = \left(\widehat{V}B\,\text{EXGR}_{c,i}\right)_{p,h}$$

Where $\text{EXGR}_{c,i}$ is a vector of size $KN \times 1$, with all entries being zero except the entry corresponding to exports by country c industry i. $\widehat{V}B\,\text{EXGR}_{c,i}$ is a vector of size $KN \times 1$ as well and $\left(\widehat{V}B\,\text{EXGR}_{c,i}\right)_{p,h}$ is the vector element corresponding to value adding in country p industry h.

This indicator reveals how the value of a country's gross exports of intermediate and final products is an accumulation of value generated by many industries in many countries.

Domestic value added origin is shown where source country $p=c$ and, for convenience, also represented by *source country = "DXD: Domestic"*.

From this indicator a range of gross exports-based measures can be derived including those in the main TiVA indicators database such as:

Total gross exports by industry, $\text{EXGR}_{c,i}$: set VA source country, $p = World$, source industry, $h = DTOTAL$;

Total domestic and foreign value added content of gross exports by industry, $\text{EXGR\_DVA}_{c,i}$ and $\text{EXGR\_FVA}_{c,i}$. For EXGR_DVA, set source country $p = DXD$ *"Domestic"*, VA source industry, $h = DTOTAL$;

Shares of EXGR_DVA and EXGR_FVA in relation to EXGR such as $\text{EXGR\_DVASH}_{c,i}$, $\text{EXGR\_TDVAIND}_{c,i}$, and the "GVC backward linkage" indicators $\text{EXGR\_FVASH}_{c,i}$ and $\text{EXGR\_TFVAIND}_{c,i}$;

"GVC forward linkage" indicators such as EXGR_DVAFXSH;

Service value added contents of gross exports $\text{EXGR\_SERV\_DVASH}_{c,i}$ and $\text{EXGR\_SERV\_FVASH}_{c,i}$. Set source industry, $h = D41T98$ (Total Services including Construction activities);

For regions, exports exclude intra-regional trade and, intra-regional value added flows are considered as domestic value added. For example, for exporting region EU27, exports are to non-EU27 economies and, source country "*DXD: domestic*" includes value added originating from Member States.

Note that the same value added originating from industry j in country p can be present in the gross exports of more than one country c (as embodied value added, from upstream production, may cross national borders many times). In general, therefore, these estimates should be viewed from the perspective of the exporting country c and exporting industry i.

However, for indicators of "GVC forward linkages" a source country p, source industry j perspective is required.

7.2 IMGR_BSCI: Origin of value added in gross imports, USD million

Indicators dimensions:
[Imp cou | VA src cou | Exp ind | Exp cou]

VA origin	Exports	Imports	Final Demand
Country (s)	Country (p)	Country (c)	
	Industry (i)		

Origin of value added in gross imports provides estimates of the value added in gross imports by country *c* of goods and services from industry *i* originating from partner country/region *p* broken down by value added originating from country/region *s*.

$$\text{IMGR\_BSCI}_{p,c,i,s} = \hat{V} B \, IMGR_{p,c}$$

Where $\text{IMGR}_{p,c}$ is a diagonal matrix of size *KN×KN*, with the gross imports of country *c* from the exporting industries of the partners' countries *p*.

In other words, the four dimensions link the imports of country *c* to the value added from source country *s* embodied in the exports of industry *i* in the exporting country *p* - thus revealing how the value of a country's gross imports of intermediate and final products from a particular partner is an accumulation of value generated by many countries.

From this indicator a range of gross imports-based measures can be derived including the following found in the main TiVA indicators database:

Total gross imports by industry, $\text{IMGR}_{c,i}$: set exporting country, *p = World* and source country, *s = World*.

Domestic value added content of gross imports by partner and industry, $\text{IMGR\_DVA}_{c,p,i}$: set source country *s = * importing country *c*.

Share of IMGR_DVA in relation to IMGR: $\text{IMGR\_DVASH}_{c,p,i}$

Note that the same value added originating from source country *s* can be present in the gross imports of more than one importing country *c* (as embodied value added, from upstream production, may cross national borders many times). In general, therefore, these estimates should be viewed from the perspective of an importing country *c*.

7.3   FDVA_BSCI: Origin of value added in final demand, USD million

Indicators dimensions:
[VA src cou | VA src ind | FD cou | FD ind]

VA origin	Exports	Imports	Final Demand
Country (c)			Country (p)
Industry (i)			Industry (h)

Origin of value added in final demand provides estimates of value added for final demand in country p for industry h final goods and services broken down by the value added generated by source industry i in VA source country c.

$$\text{FDVA\_BSCI}_{c,i,p,h} = \left(\widehat{V}B\ FD_{p,h}\right)_{c,i}$$

Where $FD_{p,h}$ is a vector of size $KN \times 1$, with all entries being zero except the entry corresponding to final demand for goods and services of industry h in country p. $\widehat{V}B\ FD_{p,h}$ is a vector of size $KN \times 1$ as well and $\left(\widehat{V}B\ FD_{p,h}\right)_{c,i}$ is the vector element corresponding to value added generate by industry i in country c.

In other words, it reveals how the value of final demand goods and services consumed within a country is an accumulation of value generated by many industries in many countries.

Domestic value added origin is shown where source country $p = c$ and, for convenience, also represented by source country = "*DXD: Domestic*".

From this indicator a range of final demand-based measures can be derived including those in the main TiVA indicators database such as Domestic value added embodied in foreign final demand, FFD_DVA and related partner shares FFD_DVApSH; and, Foreign value added embodied in domestic final demand, DFD_FVA and related partner shares DFD_FVApSH.

The diagram below, with two industries - ICT (ISIC Rev.4 Division 26) and "non-ICT" - illustrates how the data can provide new perspectives on the output of certain industries and related demand. The value added generated by a country's domestic ICT industry is present in final demand for both ICT and "non-ICT" products, both at home and abroad. Similarly, domestic final demand for ICT products includes value added generated by domestic and foreign ICT and "non-ICT" industries.

Demand for final products

Industry VA Origin		Domestic		Foreign		
		ICT	non-ICT	ICT	non-ICT	
Domestic	ICT					**Domestic ICT industry value added**
	non-ICT					Domestic non-ICT industry value added in global demand for ICT products
Foreign	ICT					Foreign ICT industry value added in domestic final demand
	non-ICT					Foreign non-ICT industry value added in domestic demand for ICT products

7.4 FD_EXGRINT_VA: Gross exports of intermediate products by origin of value added and final destination, USD million

Indicators dimensions:
[VA src cou | Exp cou | Exp ind | FD cou]

VA origin	Exports	Imports	Final Demand
Country (s)	Country (c)		Country (p)
	Industry (i)		
	Intermediates		

This indicator (FD_EXGRINT_VA) presents gross exports of intermediate products by industry i in country c, broken down by both the source country/region s origin of value added, and according to final demand destination country/region p.

$$FD\_EXGRINT\_VA_{s,c,i,p} = V_{s,j} * B_{s,j,c,i} * F_{c,i,p}$$

Where:

$$F = diag\{[\gamma \circ A * diag(B * FD)] * i\}$$

γ is a matrix with ones in the off main block diagonals and zeros in the main block diagonals, i.e., zeros for the block diagonal of the same country of origin and destination,

$\circ$ is the symbol for the Hadamard product, i.e., the element-wise multiplication

i is a vector of ones

This indicator is from the exporting countries point of view, i.e., it shows the value added from source country s embodied in the exports of intermediates by exporting country c which ends up in the final destination country p.

7.5 FD_EXGRFNL_VA: Gross exports of final products by origin of value added and final destination, USD million

Indicators dimensions:
[VA src cou | Exp cou | Exp ind | FD cou]

VA origin	Exports	Imports	Final Demand
Country (s)	Country (c)		Country (p)
	Industry (i)		
	Final goods		

This indicator (FD_EXGRFNL_VA) presents gross exports of final products by industry i in country c, broken down by both the source country/region s origin of value added and, according to final demand destination country/region p.

$$FD\_EXGRFNL\_VA_{s,c,i,p} = V_{s,j} * B_{s,j,c,i} * EXGR\_FNL_{c,i,p}$$

This indicator is from the exporting countries point of view, i.e., it shows the value added from source country s embodied in the exports of final goods by exporting country c which ends up in the final destination p.

7.6 FD_EXGR_VA: Gross exports by origin of value added and final destination, USD million

Indicators dimensions:
[VA src cou | Exp cou | Exp ind | FD cou]

VA origin	Exports	Imports	Final Demand
Country (s)	Country (c)		Country (p)
	Industry (i)		

This indicator (FD_EXGR_VA) presents gross exports of final and intermediate products by industry *i* in country *c*, broken down by both the source country/region s origin of value added and, according to final demand destination country/region *p*.

$$FD\_EXGR\_VA_{s,c,i,p} = FD\_EXGRINT\_VA_{s,c,i,p} + FD\_EXGRFNL\_VA_{s,c,i,p}$$

This indicator is from the exporting countries point of view, i.e., it shows the value added from source country *s* embodied in the exports of exporting country *c* which ends up in the final destination *p*.

Annex A. Dimensions of OECD TiVA database 2025 edition

The TiVA indicators are estimated for all years from 1995 to 2022; 80 economies and "*Rest of the World*" (Table A.1); 17 regions and country groups and total World (Table A.2); 50 unique industries (Table A.3) and 30 industry aggregates (Table A.4) within a hierarchy.

Important note concerning TiVA estimates for most recent years

The TiVA estimates for the most recent years should be interpreted with caution.

Harmonised national Supply and Use Tables (SUTs) and Input-Output Tables (IOTs) are key inputs in the construction of Inter-Country Input-Output (ICIO) tables from which TiVA indicators are calculated. Availability of official SUTs and IOTs is therefore a major determinant of inclusion in the published TiVA database. While a handful of countries (notably in Europe) had published SUTs for 2022 by the end of 2024, many countries publish SUTs with a time-lag of three to five years. Therefore, to construct ICIO tables for more recent years, the latest available harmonised SUTs are extrapolated using constraints from National Accounts (SNA) time series up to 2022 and further adjusted using Balance of Payments statistics and bilateral trade in goods and services, also up to 2022. An important implicit assumption is that the structures of countries' industry input and output in extrapolated SUTs are similar to the structures of the latest available SUTs. This is a reasonable assumption in the absence of global or regional economic shocks.

Table A.1. Country coverage

N.	Code	Country	N.	Code	Country
1	AUS	Australia	39	AGO	Angola
2	AUT	Austria	40	ARG	Argentina
3	BEL	Belgium	41	BGD	Bangladesh
4	CAN	Canada	42	BLR	Belarus
5	CHL	Chile	43	BRA	Brazil
6	COL	Colombia	44	BRN	Brunei Darussalam
7	CRI	Costa Rica	45	BGR	Bulgaria
8	CZE	Czechia	46	KHM	Cambodia
9	DNK	Denmark	47	CMR	Cameroon
10	EST	Estonia	48	CHN	China (People's Republic of)
11	FIN	Finland	49	CIV	Côte d'Ivoire
12	FRA	France	50	HRV	Croatia
13	DEU	Germany	51	CYP	Cyprus[2]
14	GRC	Greece	52	COD	Democratic Republic of Congo
15	HUN	Hungary	53	EGY	Egypt
16	ISL	Iceland	54	HKG	Hong Kong, China
17	IRL	Ireland	55	IND	India
18	ISR	Israel[1]	56	IDN	Indonesia
19	ITA	Italy	57	JOR	Jordan
20	JPN	Japan	58	KAZ	Kazakhstan
21	KOR	Korea	59	LAO	Lao (People's Democratic Rep.)
22	LVA	Latvia	60	MYS	Malaysia
23	LTU	Lithuania	61	MLT	Malta
24	LUX	Luxembourg	62	MAR	Morocco
25	MEX	Mexico	63	MMR	Myanmar
26	NLD	Netherlands	64	NGA	Nigeria
27	NZL	New Zealand	65	PAK	Pakistan
28	NOR	Norway	66	PER	Peru
29	POL	Poland	67	PHL	Philippines
30	PRT	Portugal	68	ROU	Romania
31	SVK	Slovakia	69	RUS	Russian Federation
32	SVN	Slovenia	70	STP	Saõ Tomé and Principe
33	ESP	Spain	71	SAU	Saudi Arabia
34	SWE	Sweden	72	SEN	Senegal
35	CHE	Switzerland	73	SGP	Singapore
36	TUR	Türkiye	74	ZAF	South Africa
37	GBR	United Kingdom	75	TWN	Chinese Taipei
38	USA	United States	76	THA	Thailand
			77	TUN	Tunisia
			78	UKR	Ukraine
			79	ARE	United Arab Emirates
			80	VNM	Viet Nam
			81	WXD	Rest of the World

OECD countries (as of September 2025)

Countries added in 2023 edition
Countries added in 2025 edition

Notes:

1. The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities or third party. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

2. Footnote by Türkiye: The information in this document with reference to "Cyprus" relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Türkiye recognizes the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Türkiye shall preserve its position concerning the "Cyprus issue". Footnote by all the European Union Member States of the OECD and the European Union: The Republic of Cyprus is recognised by all members of the United Nations with the exception of Türkiye. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

Table A.2. Regions and country groups

N.	Code[1]	Old code (TiVA 2021)	Region	Countries covered
1	OECD	OECD	OECD member countries	Countries 1 to 38
2	WXOECD	WXOECD	Non-OECD economies	Countries 39 to 81
3	APEC	APEC	Asia-Pacific Economic Cooperation[2]	AUS CAN CHL JPN KOR MEX NZL USA BRN CHN HKG IDN MYS PER PHL RUS SGP THA TWN VNM
4	ASEAN	ASEAN	Association of South East Asian Nations	BRN IDN KHM LAO MYS MMR PHL SGP THA VNM
5	S2	EASIA	Eastern Asia	JPN KOR CHN HKG TWN
6	EU27_2020	EU27_2020	European Union (27 countries)[3]	AUT BEL CZE DNK EST FIN FRA DEU GRC HUN IRL ITA LVA LTU LUX NLD POL PRT SVK SVN ESP SWE BGR CYP HRV MLT ROU
7	EU28	EU28	European Union (28 countries)[3]	AUT BEL CZE DNK EST FIN FRA DEU GRC HUN IRL ITA LVA LTU LUX NLD POL PRT SVK SVN ESP SWE GBR BGR CYP HRV MLT ROU
8	EU15	EU15	European Union (15 countries)[3]	AUT BEL DNK FIN FRA DEU GRC IRL ITA LUX NLD PRT ESP SWE GBR
9	EU28XEU15	EU13	EU28 excluding EU15[3]	CZE EST HUN LVA LTU POL SVK SVN BGR CYP HRV MLT ROU
10	EA19	EA19	Euro area (19 countries)	AUT BEL EST FIN FRA DEU GRC IRL ITA LVA LTU LUX NLD PRT SVK SVN ESP CYP MLT
11	G20	G20	G20	AUS CAN FRA DEU ITA JPN KOR MEX TUR GBR USA ARG BRA CHN IND IDN RUS SAU ZAF EU27[4]
			World divided into regions	
12	E	ZEUR	Europe	AUT BEL CZE DNK EST FIN FRA DEU GRC HUN ISL IRL ITA LVA LTU LUX NLD NOR POL PRT SVK SVN ESP SWE CHE GBR BLR BGR CYP HRV MLT ROU RUS UKR
13	S2_S8	ZASI	East and Southeastern Asia	JPN KOR BRN CHN HKG IDN KHM LAO MYS MMR PHL SGP THA TWN VNM
14	NAFTA	ZNAM	North American Free Trade Agreement	CAN MEX USA
15	A5_A7	ZSCA	Central and South America	CHL ARG BRA COL CRI PER
16	F	ZAFR	Africa	AGO CMR CIV COD EGY MAR NGA SEN STP ZAF TUN
17	W_O	ZOTH	Other regions	AUS ISR NZL TUR BGD IND JOR KAZ PAK SAU ARE WXD
18	W	WLD	World	
19	D	DXD	Domestic	Dummy partner used in the diagonal for some indicators.

OECD countries (as of September 2025)	Countries added in 2023	Countries added in 2025

1. New codes introduced in 2023, to align with OECD common standards consistent with OECD's Data Explorer online dissemination tool.

2. APEC excludes Papua New Guinea, a country not yet included in the TiVA database.

3. From 1 February 2020, after the departure of the United Kingdom, the European Union consists of 27 countries. The aggregates EU28 and EU15 include the United Kingdom and are retained for any analyses that may require this perspective. EU member states: https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:EU_enlargements.

4. Excludes France, Germany and Italy which are shown separately.

Table A.3. Industry coverage

N.	Code	Economic activity	ISIC Rev.4	ISIC Rev.4 Sections
1	A01	Crop and animal production, hunting and related service activities	01	A
2	A02	Forestry and logging	02	
3	A03	Fishing and aquaculture	03	
4	B05	Mining of coal and lignite	05	B
5	B06	Extraction of crude petroleum and natural gas	06	
6	B07	Mining of metal ores	07	
7	B08	Other mining and quarrying	08	
8	B09	Mining support service activities	09	
9	C10T12	Manufacture of food products; beverages and tobacco products	10, 11, 12	C
10	C13T15	Manufacture of textiles, wearing apparel, leather and related products	13, 14, 15	
11	C16	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	16	
12	C17_18	Manufacture of paper and paper products; printing and reproduction of recorded media	17, 18	
13	C19	Manufacture of coke and refined petroleum products	19	
14	C20	Manufacture of chemicals and chemical products	20	
15	C21	Manufacture of basic pharmaceutical products and pharmaceutical preparations	21	
16	C22	Manufacture of rubber and plastics products	22	
17	C23	Manufacture of other non-metallic mineral products	23	
18	C24A	Manufacture of basic iron and steel and of ferro-alloys; of tubes, pipes, hollow profiles, related fittings and other products of first processing of steel; casting of iron and steel	241, 2431	
19	C24B	Manufacture of basic precious and other non-ferrous metals; casting of light metals and other non-ferrous metals	242, 2432	
20	C25	Manufacture of fabricated metal products, except machinery and equipment	25	
21	C26	Manufacture of computer, electronic and optical products	26	
22	C27	Manufacture of electrical equipment	27	
23	C28	Manufacture of machinery and equipment n.e.c.	28	
24	C29	Manufacture of motor vehicles, trailers and semi-trailers	29	
25	C301	Building of ships and boats	301	
26	C302T309	Manufacture of Railroad equipment, aircrafts, military fighting vehicles and other transport equipment n.e.c	302, 303, 304.309	
27	C31T33	Manufacture of furniture; jewellery, musical instruments, toys, etc.; repair and installation of machinery and equipment	31, 32, 33	
28	D	Electricity, gas, steam and air conditioning supply	35	D
29	E	Water supply; sewerage, waste management and remediation activities	36, 37, 38, 39	E
30	F	Construction	41, 42, 43	F
31	G	Wholesale and retail trade; repair of motor vehicles and motorcycles	45, 46, 47	G
32	H49	Land transport and transport via pipelines	49	H
33	H50	Water transport	50	
34	H51	Air transport	51	
35	H52	Warehousing and support activities for transportation	52	
36	H53	Postal and courier activities	53	
37	I	Accommodation and food service activities	55, 56	I
38	J58T60	Publishing, motion picture, video, television programme production; sound recording, programming and broadcasting activities	58, 59, 60	J
39	J61	Telecommunications	61	
40	J62_63	Computer programming, consultancy, and information service activities	62, 63	
41	K	Financial and insurance activities	64, 65, 66	K
42	L	Real estate activities	68	L
43	M	Professional, scientific and technical activities	69 to 75	M
44	N	Administrative and support services	77 to 82	N
45	O	Public administration and defence; compulsory social security	84	O
46	P	Education	85	P
47	Q	Human health and social work activities	86, 87, 88	Q
48	R	Arts, entertainment and recreation	90, 91, 92, 93	R
49	S	Other service activities	94,95, 96	S
50	T	Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use	97, 98	T

Table A.4. Industry aggregates

Code	Economic activity aggregate	ISIC Rev. 4 Divisions
A	Agriculture, forestry and fishing	01, 02, 03
A01T02	Crop and animal production, hunting and related service activities; Forestry and logging	01, 02
B	Mining and quarrying	05 to 09
B05T06	Mining and extraction of energy producing products	05,06
B07T08	Mining and quarrying of non-energy producing products	07,08
C	Manufacturing	10 to 33
C16T18	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials; manufacture of paper and paper products; printing and reproduction of recorded media	16 to 18
C19T23	Manufacture of chemicals and non-metallic mineral products	19 to 23
C20_21	Manufacture of chemicals and pharmaceuticals	20, 21
C24_25	Manufacture of basic metals and fabricated metal products, except machinery and equipment	24, 25
C24	Manufacture of basic metals	24
C26_27	Manufacture of computer, electronic and optical products; manufacture of electrical equipment	26, 27
C29_30	Manufacture of motor vehicles, trailers, semi-trailers and of other transport equipment	29, 30
C30	Manufacture of other transport equipment	30
D_E	Electricity, gas, steam and air conditioning supply; Water supply; sewerage, waste management and remediation activities	35 to 39
GTN	Services of the business economy - sections G to N	45 to 82
GTI	Wholesale and retail trade; repair of motor vehicles and motorcycles; transportation and storage; accommodation and food service activities	45 to 56
H	Transportation and storage	49 to 53
J	Information and communication	58 to 63
M_N	Professional, scientific and technical activities; administrative and support service activities	69 to 82
OTT	Public administration, defence, education, human health and social work activities	84 to 98
OTQ	Public administration and defence; compulsory social security	84 to 88
RTT	Arts, entertainment and recreation; Other service activities; Activities of households as employers	90 to 98
R_S	Arts, entertainment and recreation; Other service activities	90 to 96
BTE	Industry (Mining, Manufactures and Utilities)	05 to 39
GTT	Total Services (excl. construction)	45 to 98
JTN	Information, Finance, Real Estate and other business services	58 to 82
FTT	Total Services (incl. construction)	41 to 98
INFO	Information industries	26, 58 to 63
_T	TOTAL	01 to 98