



FIGARO 2022 edition – Towards a global view of National Accounts Main Aggregates

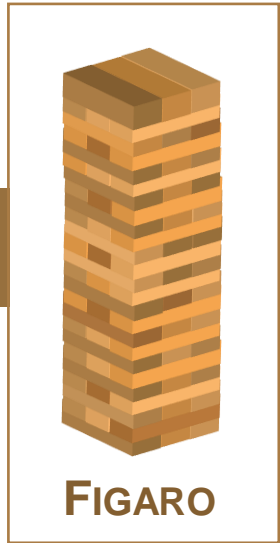
UNECE Special session on supply, use and input-output tables
3-5 October 2022, Geneva

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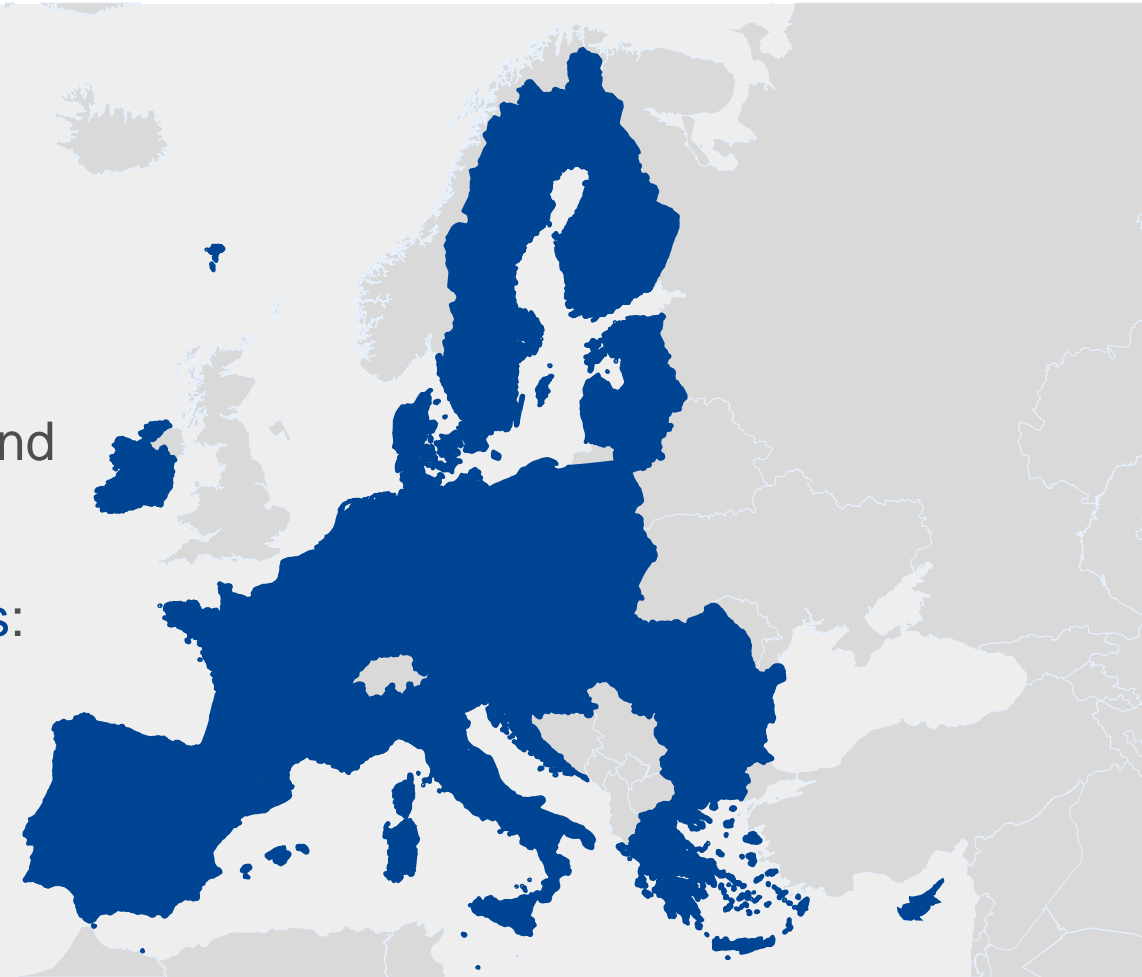
Content



- FIGARO 2022 edition – EU inter-country supply, use and input-output tables
- Towards a global NAMA
- Outlook

FIGARO – 2022 edition (1/3)

- FIGARO - ‘**F**ull **I**nternational and **G**lobal **A**ccounts for **R**esearch in input-**O**utput analysis’
- Inter-country Supply, Use and Input-Output tables (FIGARO tables)
- Result of a long-term collaboration between Eurostat and the European Commission’s Joint Research Centre
- Since 2021, FIGARO has become EU Official Statistics: benchmarked to the latest official macroeconomic aggregates (T - 2 years)
- Years 2010-2020 (csv, excel + new matrix format)



FIGARO – 2022 edition (2/3)



27 EU Member States +
NO, CH

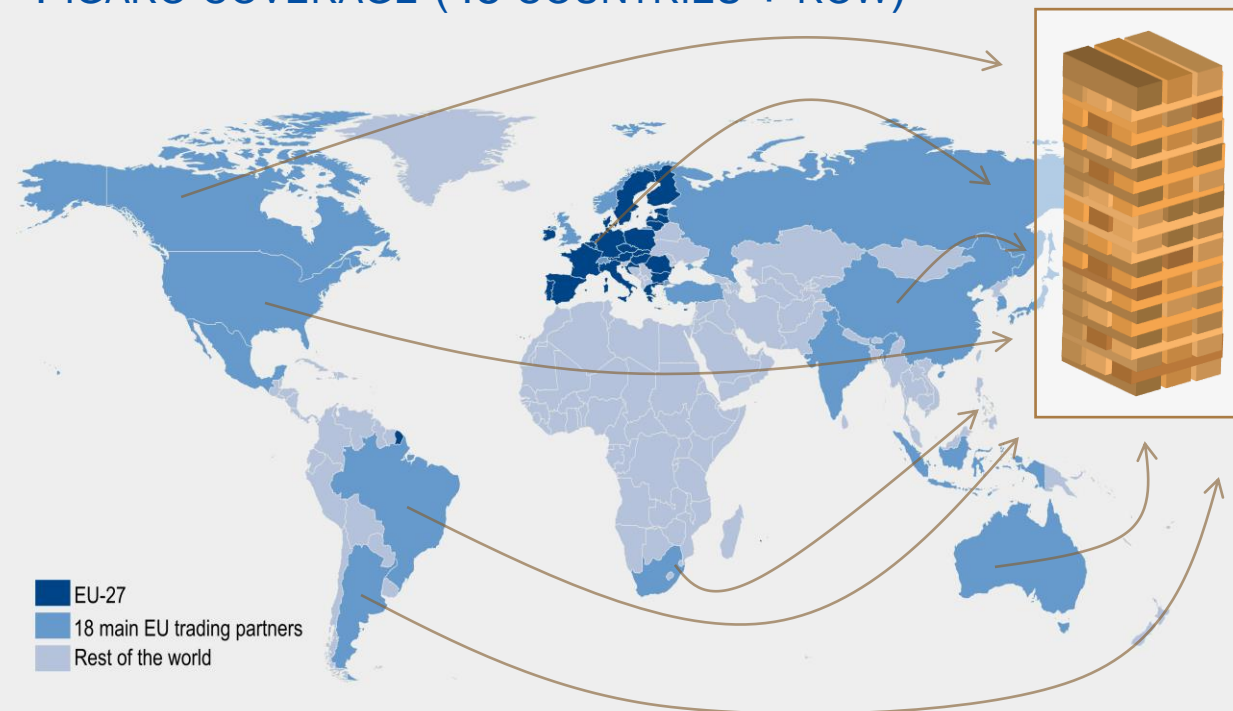
NACE Rev. 2 A*21 → A*64

16 main
trading partners

Rest of the world
(ROW)

=

FIGARO COVERAGE (45 COUNTRIES + ROW)



FIGARO applications

- ### Share of employment in each Member State supported by EU exports

The chart displays the percentage of the population in various professions across EU countries. The y-axis represents the percentage (%), ranging from 0 to 25. The x-axis lists the EU countries and the EU average. The bars are colored blue. An illustration of various professions is shown above the bars.

Country	Percentage (%)
EU	14.5
Luxembourg	23.5
Ireland	23.3
Bulgaria	21.0
Malta	20.7
Latvia	18.8
Cyprus	16.8
Netherlands	16.6
Lithuania	16.5
Czechia	16.5
Germany	16.4
Belgium	15.8
Slovenia	15.7
Hungary	15.5
Slovakia	15.4
Sweden	15.2
Estonia	15.1
Denmark	14.7
Poland	14.6
Italy	13.5
Finland	13.3
Romania	12.9
Austria	12.7
France	12.5
Spain	11.6
Portugal	11.4
Greece	9.8
Croatia	9.2



Towards a global NAMA (1/9)



- **Why a global NAMA?**
- Consistent picture of global economy at a given point in time
- Constraints – vintages, balancing world trade as a reference
- Higher granularity, less accuracy
- Measure the economy of the world in an input-output framework

—→ **Let's zoom in on the global economy...**

Towards a global NAMA (2/9)



- Gross Domestic Product - GDP (ESTAT, UN, NSI), Population, Employment

Towards a global NAMA (2/9)



- **GDP (ESTAT, UN, NSI), Population, Employment**
- **GDP** = Final consumption expenditure (P3) + Gross capital formation (P5) + Exports (Goods+Services) – Imports (Goods+Services)

Towards a global NAMA (2/9)



***Adjustments to
match total GDP**



- GDP (ESTAT, UN, NSI), Population, Employment
- $GDP = P3^* + P5^* + (P61^* + P62^*) - (P71^* - P72^*)$
- World Trade Balance + World GDP (205 countries)

Towards a global NAMA (2/9)



- **GDP (ESTAT, UN, NSI), Population, Employment**
- **$GDP = P3^* + P5^* + (P61^* + P62^*) - (P71^* - P72^*)$**
- **World Trade Balance + World GDP (205 countries)**
- From GDP, Taxes less subsidies on production (D21X31) and Output (P1), derive Gross value added (B1G) and Intermediate consumption (P2)

Towards a global NAMA (2/9)



- GDP (ESTAT, UN, NSI), Population, Employment
- $GDP = P3^* + P5^* + (P61^* + P62^*) - (P71^* - P72^*)$
- World Trade Balance + World GDP (205 countries)
- From GDP, D21X31 and P1, derive B1G, P2
- From GDP, derive Compensation of employees (D1), Other taxes less subsidies on production (D29X39), Gross operating surplus and mixed income (B2A3G)

Towards a global NAMA (2/9)



- GDP (ESTAT, UN, NSI), Population, Employment
- $GDP = P3^* + P5^* + (P61^* + P62^*) - (P71^* - P72^*)$
- World Trade Balance + World GDP (205 countries)
- From GDP, D21X31 and P1, derive B1G, P2
- From B1G, derive D1, D29X39, B2A3G
- A64 break down: Output, Intermediate consumption, Gross value added, Compensation of employees, Other taxes less subsidies on production, Gross operating surplus and mixed income

Towards a global NAMA (2/9)



**SUTs are ultimate granularity
in terms of National Accounts**



- GDP (ESTAT, UN, NSI), Population, Employment
- $GDP = P3^* + P5^* + (P61^* + P62^*) - (P71^* - P72^*)$
- World Trade Balance + World GDP (205 countries)
- From GDP, D21X31 and P1, derive B1G, P2
- From B1G, derive D1, D29X39, B2A3G
- A64 break down: P1, P2, B1G, D1, D29X39, B2A3G
- Supply and use tables

Towards a global NAMA (2/9)



NEW

NEW

NEW

- GDP (ESTAT, UN, NSI), Population, Employment
- $GDP = P3^* + P5^* + (P61^* + P62^*) - (P71^* - P72^*)$
- **World Trade Balance + World GDP (205 countries)**
(External balance of goods and services = 0)
- From GDP, D21X31 and P1, derive B1G, P2
- From B1G, derive D1, D29X39, B2A3G
- A64 break down: P1, P2, B1G, D1, D29X39, B2A3G
- Supply and Use Tables (SUT) – **45 countries (T1500, T1600, T1610, T1611, T1612, T1620, T1630)**
- **‘SUT-RAS’ methodology paper**

Towards a global NAMA (3/9)

- **FIGARO covers** 205 economic areas
 - ~ 99.1% World population
 - ~ 99.8% World GDP

5 biggest countries not covered

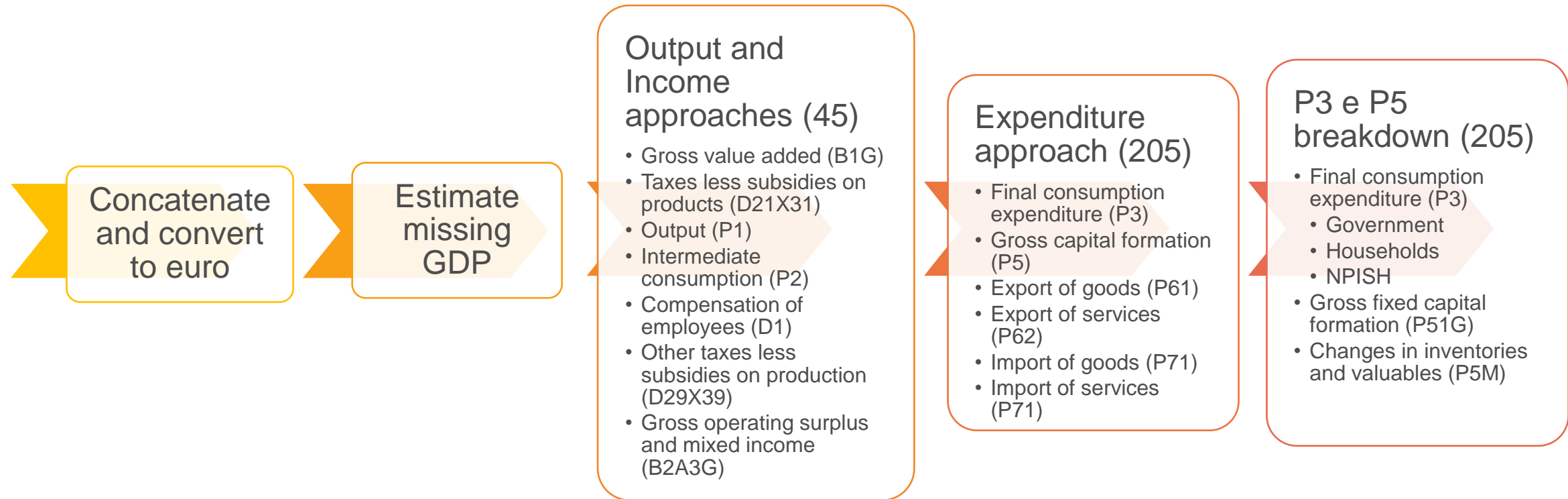
- North Korea, 26.0 M
- Syria, 19.4 M
- Somalia, 16.8 M
- Eritrea, 3.7 M
- Gabon, 2.3 M

...but, covering small but relevant economic areas in terms of international trade in services, e.g.

- Isle of Man
- Jersey
- Gibraltar

Towards a global NAMA (4/9)

FIGARO workflow



Towards a global NAMA (4/9)

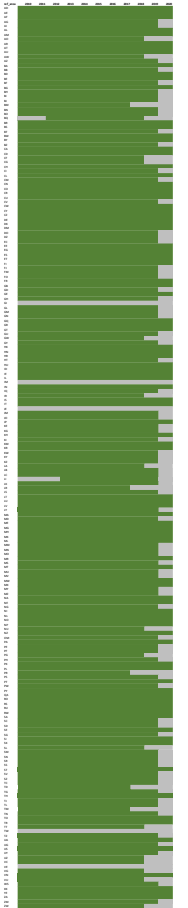
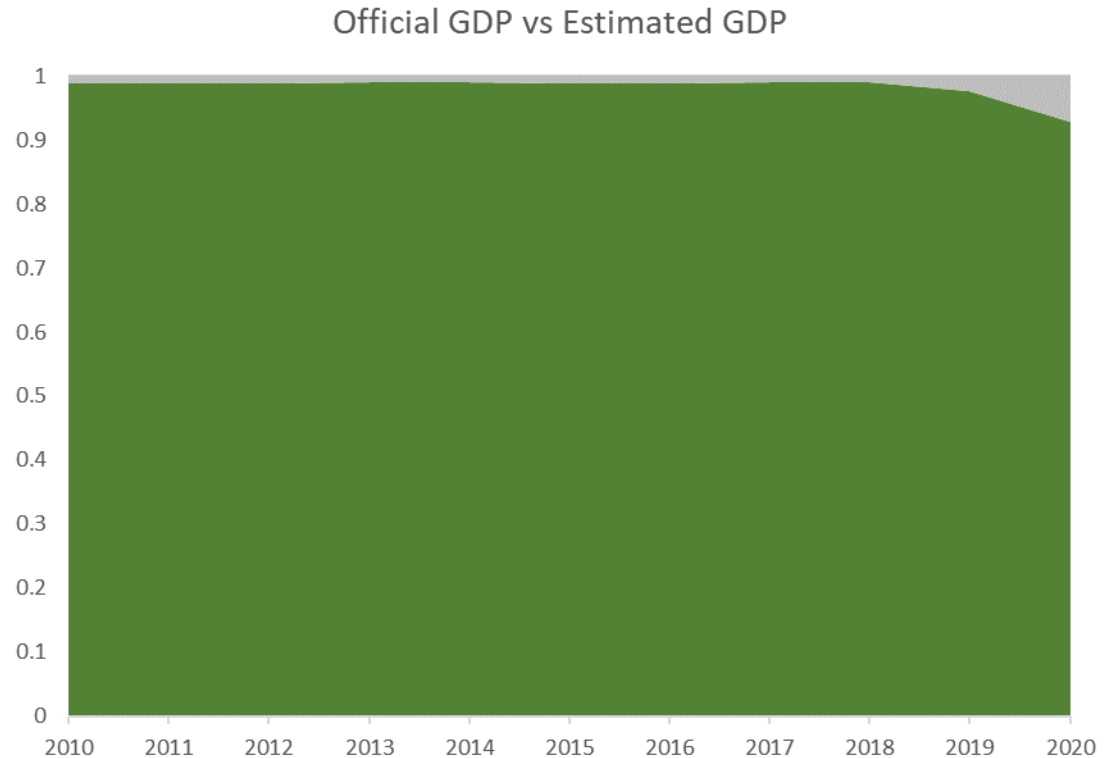
FIGARO workflow (cont.)



Towards a global NAMA (5/9)

Estimate missing GDP

- **Approach:** websites & most correlated economy in terms of diff log, apply same 'growth rate'
- **Coverage:**
 - 2010-2018: 99%
 - 2019: 98%
 - 2020: 93%



Towards a global NAMA (6/9)

Step-by-step estimation - A64 breakdown

- **Data availability:** available for most EU countries (some A21 breakdown)
- **Missing data:** SUT structures of previous years
- **Confidentiality:**
 - Activities flagged as confidential in NAMA or SUTs replaced by EU averages adjusted to countries' totals

Towards a global NAMA (7/9)

Step-by-step estimation - Direct purchases abroad (46)

- **Data availability:** available for most EU countries, some non-EU countries
- **Missing data:** similar economies approach calibrated with trade in services
- **Rest of the world:**
 - Geographical distribution of direct purchases abroad, proxy trade in services(*)
 - Preliminary estimates of 'rest of the world' direct purchases abroad
 - World balance of direct purchases abroad

Towards a global NAMA (8/9)

Rest of the world (FIGW1) estimate

- GRAS bilateral trade in goods totals to meet export/import of goods (P61/P71)
- GRAS bilateral trade in services totals to meet export/import of services (P62/P72)
- Trade within 160 countries set to zero
- Aggregate 160 countries into one economic entity: FIGW1
- **Result:** NAMA estimates for 46 economies, full consistency of three GDP approaches, A64 activity break down, world trade balanced, direct purchases abroad world balanced

Towards a global NAMA (9/9)

On the use of NAMA in FIGARO

- For 46 economies, SUTs are jointly adjusted to NAMA:
 - T1500, T1611, T1612, T1620, T1630
- IC-use table: 46 use tables of domestic inputs (IC) + bilateral trade + direct purchases abroad + gross value added components
- **IC-use is the world NAMA in an integrated framework**
 - Balancing: only trade is changed, NA remains fixed
 - Significant balancing improvements: 10'

Outlook - Towards a 'global NAMA' (?)

- It is important to have a global view of the economy where exports equal imports and direct purchases abroad are balanced
- **FIGARO tables** contribute to this aspiration
- Questions to be addressed:
 - Further integration of FIGARO in other global inter-country input-output tables initiatives (e.g. OECD, UN-ECLAC)
 - Timeliness
 - Coordination and distribution of work

Thank you

FIGARO data base: <https://ec.europa.eu/eurostat/web/esa-supply-use-input-tables/data/database>

Contact: ESTAT-IGA@ec.europa.eu



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FIGARO links

- [Eurostat website – ESA supply, use and input-output tables](#)
- [FIGARO database](#) (csv, excel)
- [FIGARO methodology](#)
- [FIGARO applications:](#)
 - Employment and value added supported by EU exports
 - CO₂ footprints
- Statistics Explained articles
 - [Employment content in EU exports](#)
 - [Value added content in EU exports](#)