# IMF MARIO Project
## Multi-Analytical Regional Input-Output Model

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# Abstract

Input-output tables provide essential data for understanding producer-consumer relationships within economies and their connections to environmental impacts ($CO_2$ emissions, pollutants, land use, natural resources), energy systems, employment, fiscal policy, income distribution, and trade in value added. The IMF is developing the Multi-Analytical Regional Input-Output model (MARIO) to serve as both a powerful analytical framework and a source of harmonized granular data for analyzing inter-economy relationships, environmental impacts, and economic and social development pathways. By linking domestic input-output tables into a consistent multi-regional structure, MARIO will improve data consistency within and across economies.

MARIO's development leverages existing data from global input-output initiatives, statistical offices, and international organizations, including official statistics from FIGARO (Full International and Global Accounts for Research in Input-Output Analysis) and source data collected by the IMF from member countries. This multi-source approach significantly reduces data gaps typically encountered in multi-regional input-output estimation.

The IMF's unique position—with global reach, extensive technical assistance programs, and partnerships with organizations including the OECD, Eurostat, UNECLAC, and the Asian Development Bank—enables MARIO to achieve comprehensive geographic coverage while enhancing cross-country data consistency. The model will cover 212 economies, encompassing 179 products and 145 industries for the time series 1990-2023. This granularity supports detailed analysis of emissions, environmental transitions, and international spillovers.
MARIO will be built incrementally, beginning with core economic data, then expanding to incorporate labor market and environmental dimensions. This phased approach ensures robust foundations while progressively enhancing the model's analytical capabilities for addressing strategic questions related to energy transitions, emissions pathways, and material flows.

# Introduction

Input-output tables represent a unique source of information to understand the sale and purchase relationships between producers and consumers within an economy and their interconnections, among others, with:

a) **Environment:** emissions of CO2 and other pollutants, energy supply and use,, land use, natural resources, energy transition pathways.
b) **Employment:** including dimensions related to gender, age, income groups, qualifications, green jobs and decent work.
c) **Tax gaps**: fiscal policy analysis and revenue assessment.
d) **Income distribution**: distributional impacts of economic activities.
e) **Global Value Chains (GVCs) and Trade in Value Added (TiVA):** understanding production fragmentation and value creation across borders.

Over the past decade, several initiatives have produced global MRIOs. The main ones include Eurostat's FIGARO (Remond-Tiedrez and Rueda-Cantuche, 2019; Eurostat, 2021), the OECD Inter-Country Input-Output Tables (ICIO) (OECD, 2021), the University of Groningen World Input-Output Database (WIOD) (Timmer et al., 2015 and 2016), the IDE-JETRO's international input-output tables (Meng, Zhang & Inomata, 2013), the University of Sydney EORA (Lenzen et al., 2012 and 2013) and GLORIA (Lenzen et al., 2017 and 2022), the EXIOBASE (Bjelle et al., 2019; Stadler et al., 2018 and 2021), the University of Purdue GTAP-MRIO (Carrico et al, 2020), the Asian Development Bank ADB-MRIO (Asian Development Bank, 2022), the ECLAC MRIO (ECLAC, 2020), and the EMERGING (Huo et al., 2022).

Despite the availability of these MRIOs, internal IMF discussions revealed that the existing databases do not fully meet IMF needs in terms of coverage of economies and time series, commodity and industry details, timeliness, flexibility of use, modeling, and analytical capabilities. Traditional surveillance and policy formulation including energy and natural resources, the IMF requires extending domestic input-output tables to a Multi-Regional Input-Output (MRIO) model. MARIO will provide a powerful analytical tool and source of harmonized granular data for IMF Departments, member economies, academia, and research institutes to better understand inter-relationships between economies; role in global value chains; implications of production, consumption, and investment activities for transition policies; and economic and social development pathways. MARIO would also help to improve data and conceptual consistency across individual economies' input-output tables and support the development or improvement of Supply-Use Tables (SUTs) for those economies with limited experience in using the SUT framework for GDP estimation using the production approach.

Developing MARIO presents significant challenges. Data availability remains limited and standardizing and harmonizing concepts, classifications, and estimates across countries into a single statistical framework requires substantial efforts. Many countries do not produce SUTs or IOTs requiring the modeling of tables using macroeconomic aggregates combined with structures of tables from countries with a similar economic profile. Although SUTs are frequently prepared for benchmarking purposes, they are not always disseminated. In addition, IOTs availability remains limited due to the conceptual complexities or and data confidentiality. The IMF's has a unique opportunity to leverage the extensive technical assistance program, which results infrequent interactions with national statistical offices to support the strengthening of the national statistical system including production of SUTs and IOTs. Collecting official data from countries supports the compilation of estimates using modeling techniques as well as extrapolation or interpolation of the tables for missing years.

Harmonization of the domestic SUTs/IOTs requires significant work. Table presentations and classifications used vary significantly across countries as supply or use of specific products and industries depends on the relevance for each economy. While the System of National Accounts prescribes agreed definitions, classifications and accounting rules for the SUTs and IOTs, statistical offices apply different breakdowns for margins, taxes, or cost insurance freight/free-on-board adjustment, among other differences. These variations require time-consuming harmonization tasks which cannot always be automated.

To fulfill the needs for granular data on MRIO, the IMF is close to completing the first phase of the project on the compilation of the Multi-Analytical Regional Input-Output (MARIO) database, focusing on economic data. The new database builds on existing data from global input-output initiatives, statistical offices; and international organizations, including official source data collected by the IMF from its member countries. The IMF's early, and sometimes exclusive, access to a broader set of official statistics will help fill data gaps MRIOs estimation.

The following section presents an overview of the proposed methodology for MARIO's estimation, followed by a discussion of its structure and the main Global MRIOs which will serve as data sources for its estimation. The last section offers concluding remarks.

# Estimation Methodology

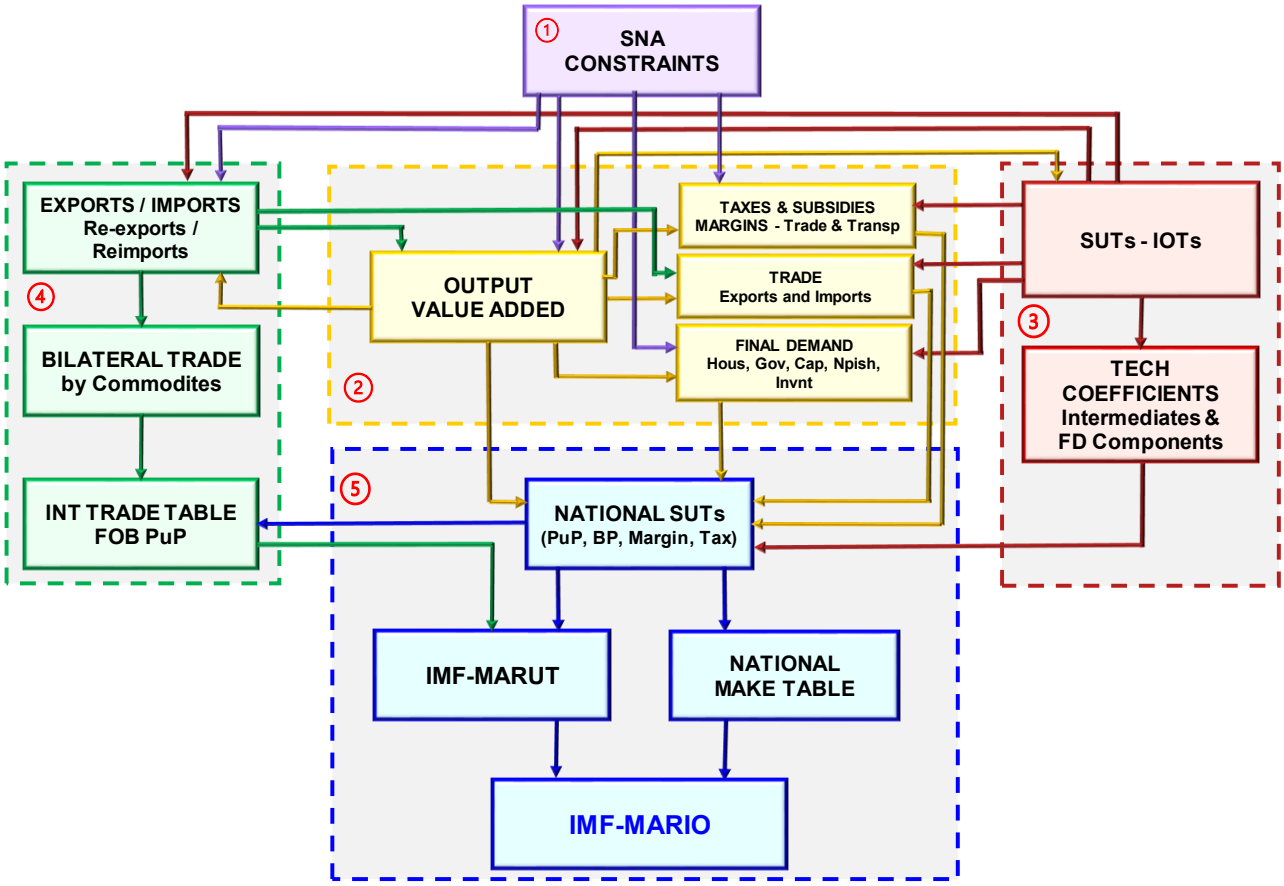
Given the complexity of estimation, the methodological solution proposed allows flexibility, and speed, by breaking down the MARIO's estimation process into 5 major blocks, as show in Figure 1.

1. SNA constraints for the economy
2. Output, value added, tax, subsidies, and final demand components broken down by products and industries
3. Technical coefficients for intermediate consumption and final demand
4. International trade
5. Estimation of the IMF-MARIO components based on data from the 4 previous blocks

Despite the blocks interdependence, the work is organized in such a way to allow data gathering and processing within each block to proceed in parallel.

An overview of the estimation process in each block is presented in the following subsections.

Figure 1. Estimation methodology of IMF-MARIO




Source: Authors elaboration

## Block 1 – SNA Constraints

SNA constraints are the base forthe estimation.  They are fundamental to ensuring consistency in the final system. The estimation of these constraints is mainly based on aggregated data from the United Nations National Accounts Statistics, IMF, Eurostat, World Bank, OECD, and National Statistical Offices. Examples of SNA constraints include internationally agreed GDP estimates by country, and  household consumption.. Due to data vintages and adjustments made to meet various requirements, full alignment of these constraints among participating international organizations may be difficult to achieve, but best efforts will be made to minimize such differences.

To assure consistency in the estimation, all countries' SNA constraints are expressed on a calendar-year basis, requiring adjustments for those countries whose national account refer to fiscal year. This approach enables MARIO to incorporate the latest national accounts updates and maintain a contemporary database.

## Block 2 – Output, value added, tax, subsidies, and final demand components

This block estimates output, value added, taxes, subsidies and final demand components at the product and industry levels. It ensures broader consistency of the estimated National Supply and Use Tables, the valuation process of going from purchasers' to basic price, and the structure of the final demand components.

Estimation of this block's components interacts with estimation of exports to ensure that exports are consistent with the output being produced. Interaction with output and value added estimation helps harmonization of countries SUTs. Countries SUTs values are used in the estimation of this block's variables.

Results from this block will be used as constraints for national SUTs, IMF-MARUT and IMF-MARIO.

## Block 3 – Technical coefficients for intermediate consumption and final demand

This block harmonizes countries' SUTs according to the products and industries definitions required for the estimation of MARIO. This block fills gaps for years where countries' SUTs have no data. This includes estimation of SUTs for countries which don't produce them. Coefficients from countries with similar economic profiles are used for the estimation. Metadata inform users about the data sources used to compile MARIO, including non-official sources.

The result is technical coefficients matrices to be used to estimate harmonized national SUTs in Block 5.

## Block 4 – International trade table

Using SNA constraints and the information from the countries' SUTs will be possible to estimate the total exports and imports, FOB at purchasers' prices, by product, excluding reexports and reimports.

Based on bilateral trade information from various sources– particularly the UN Comtrade[1], OECD-WTO Balanced Trade in Services (BaTIS)[2], the OECD Balanced International Merchandise Trade dataset (BIMTS)[3], the OECD Bilateral Trade in Goods by End-Use database (BTiGE))[4], and BACI[5] - a matrix of bilateral trade among countries is estimated for each product. This information is combined with BTiGE data and national SUTs estimated in Block 5, to produce the International Trade Table containing bilateral trade by end user of exports, i.e., if exports are allocated to intermediate use for further processing or to final demand components as final goods.

[1] https://comtradeplus.un.org/
[2] https://www.oecd.org/en/data/datasets/oecd-balanced-trade-statistics.html
[3] https://www.oecd.org/en/data/datasets/oecd-balanced-trade-statistics.html
[4] https://www.oecd.org/en/data/datasets/bilateral-trade-in-goods-by-industry-and-end-use-category.html
[5] http://www.cepii.fr/CEPII/en/bdd_modele/bdd_modele_item.asp?id=37

## Block 5 – IMF-MARIO

This first task performed in block 5 is to estimate harmonized national Supply Tables with valuation, Use Tables at purchasers' and basic prices, and the auxiliary tables on margins, taxes, and subsidies—based on information from blocks 2 and 3.

The second task is to estimate the Multi-Analytical Regional Use Table (MARUT) based on information from the harmonized national Use Tables and the International Trade Table estimated in Block 4. As explained in the next section, the estimation process, is designed to ensure that the results: a) for EU countries are, as much as possible, the same as the ones presented in Eurostat's FIGARO; b) for non-EU OECD countries, are in concordance with OECD's ICIO; c) for the Asian economies are in concordance with the ADB-MRIO; and d) for the Latin America economies are in concordance with the ECLAC-MRIO.

The final task in the estimation process is to obtain the IMF-MARIO - industry by industry symmetric square tables- using information from the national Supply Tables and IMF-MARUT. This is done by applying the assumption of fixed product sales structure, Eurostat model D (Eurostat, 2008, pp. 347-357), where the share of each industry in the sale of a given product is kept constant[6].

## MARIO Final Outputs

The resulting MARIO database will consist of harmonized national supply and use tables, and global multi-regional use tables and input-output tables.

Figures 2 to 5 show, in a schematic way, the structure of the tables which will constitute MARIO's database and refers to the national economy:

1. Supply table for the economy (Figure 2)
2. Use table in purchasers' prices – economy (Figure 3)
3. Use table at basic prices – economy (Figure 4)
4. Imports table – economy (Figure 5)
5. Wholesale and retail trade and repair services of motor vehicles – economy (Figure 5)
6. Trade margin wholesale trade, except motor vehicles – economy (Figure 5)
7. Trade margin retail trade, except motor vehicles – economy (Figure 5)
8. Transport margin land – economy (Figure 5)
9. Transport margin water – economy (Figure 5)
10. Transport margin air – economy (Figure 5)
11. Tax on products – economy (Figure 5)
12. Subsidies on products – economy (Figure 5)
13. Duty and tax on imports – economy (Figure 5)

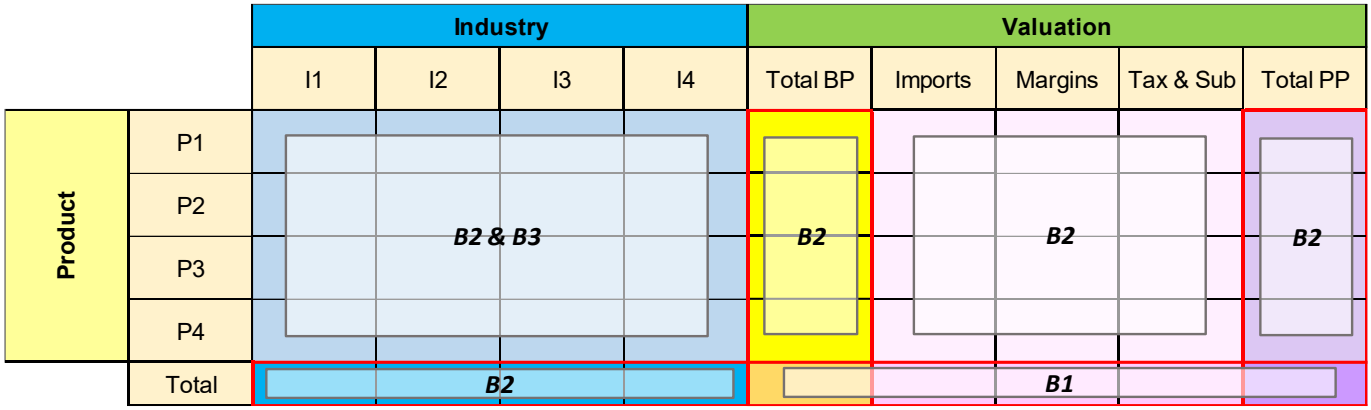
[6] See also Miller and Blair (2022), chapter 5, who refers to this estimation as being "industry-based" technology, industry by industry approach.

Figures 6 and 7 by its turn show the global systems:

1. IMF-MARUT at basic prices (Figure 6)
2. IMF-MARIO at basic prices (Figure 7)

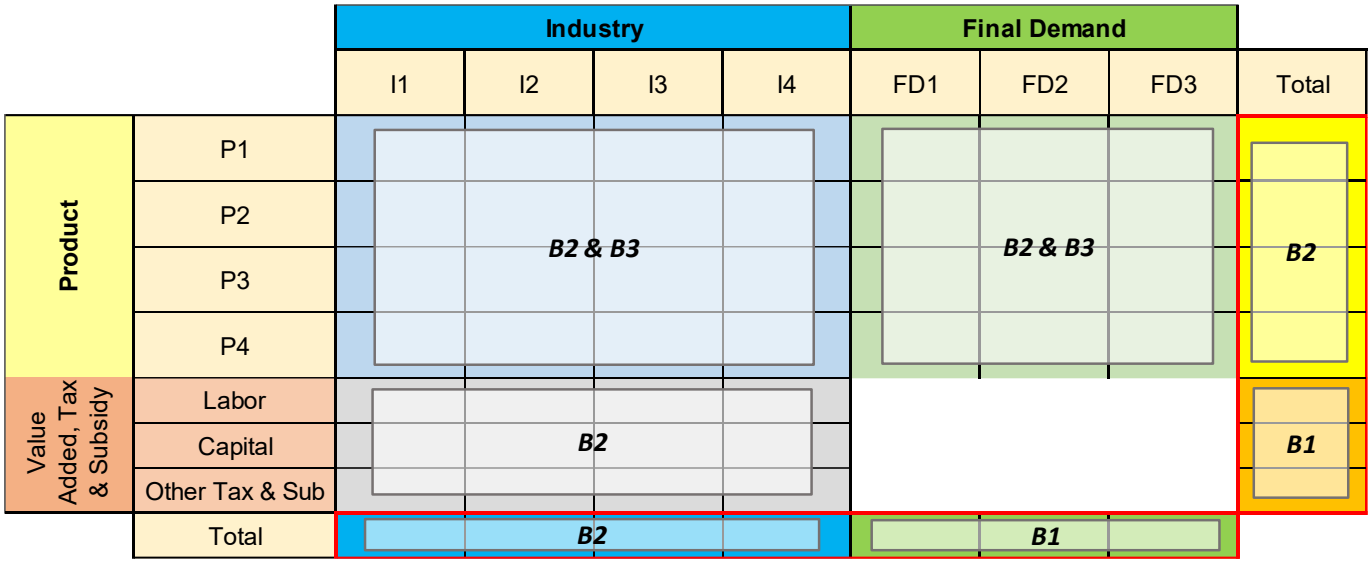
In each one of these Tables, the cells are highlighted with rectangles showing the block numbers. In the case of Figure 2, the Supply Table, has: a) the row of totals for the valuation columns are estimated in Block 1 (B1); b) the columns of the valuation, values by product, are estimated in Block 2 (B2); c) the row of total output, by industry are estimated in Block 2 (B2); and d) the make matrix which shows the amount of products produced by each industry, is estimated based on information from Blocks 2 and 3 (B2 & B3). For Figures 3 to 7, the same logic used for Figure 2 applies to show in which block was the data estimated.

Figure 2. Supply table for the economy



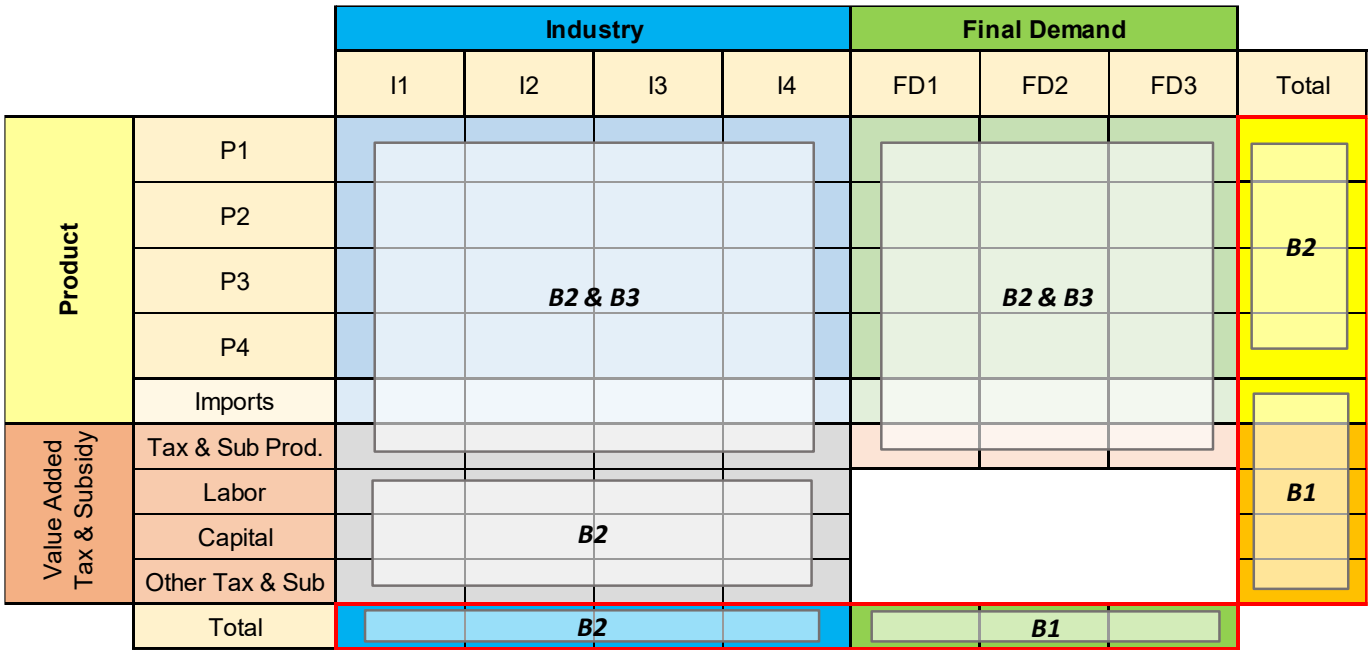

Source: Authors elaboration

Figure 3. Use table in purchasers' prices for the economy



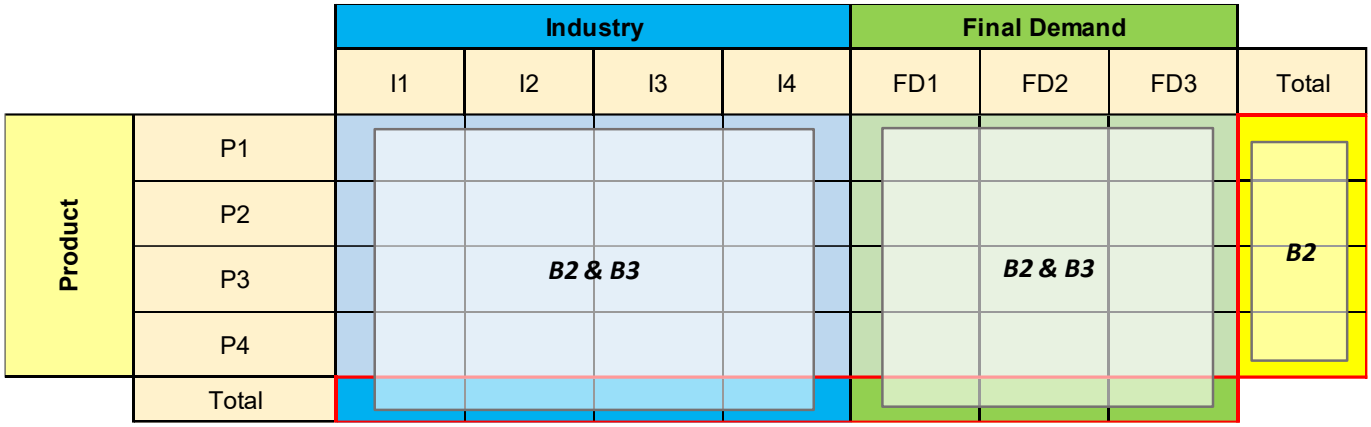

Source: Authors elaboration

Figure 4. Use table at basic prices for the economy




Source: Authors elaboration

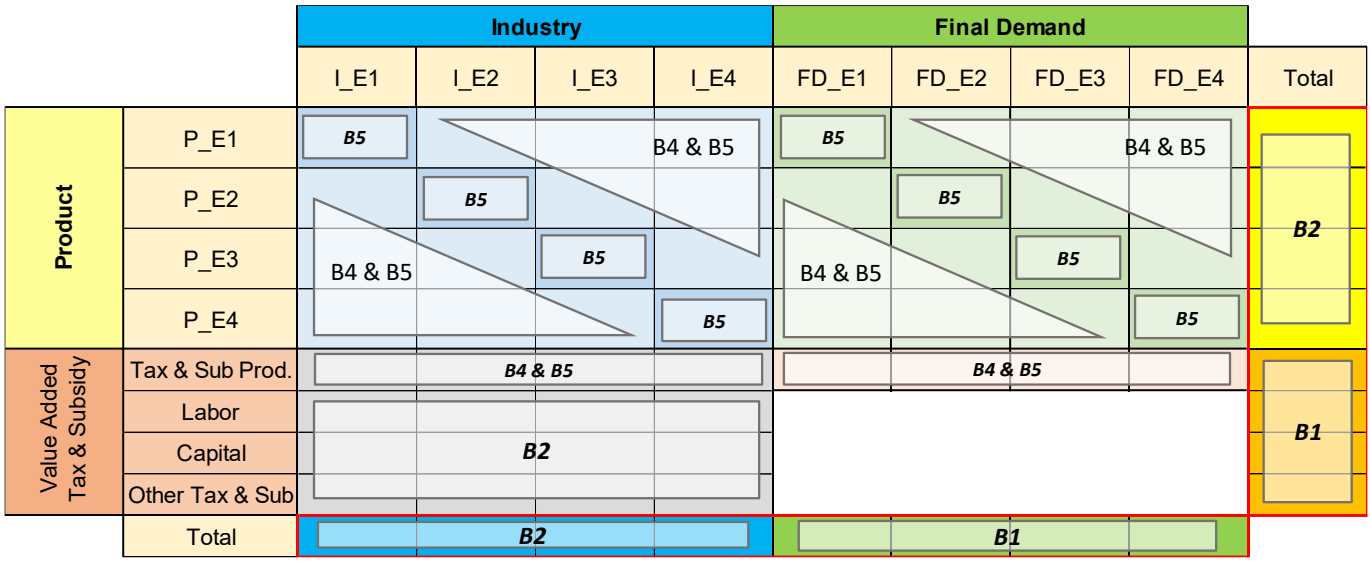
Figure 5. Import, margin, tax and subsidy tables for the economy




Source: Authors elaboration

In figure 6, the diagonal B5 shows the intermediate consumption of domestically produced inputs while the off diagonal shows the use of imported products. These tables are transformed by deducting net taxes on products and margins to derive basic price estimates.

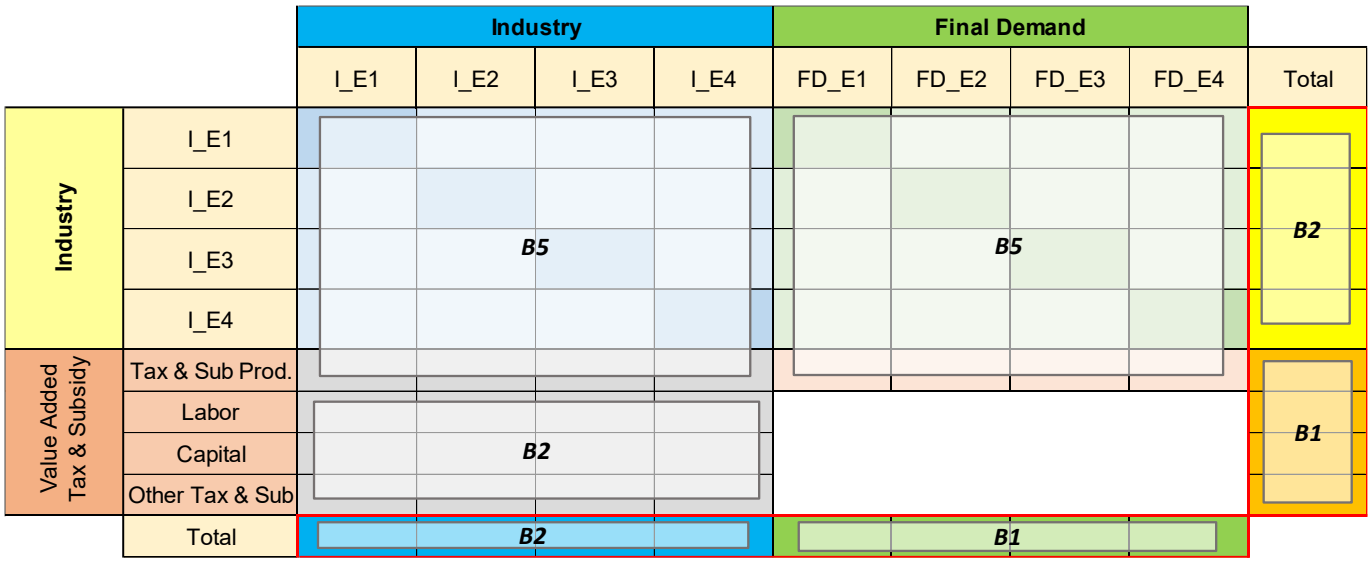
Figure 6. IMF Multi-Analytical Regional Use Table (IMF-MARUT) at basic prices




Source: Authors elaboration

In the final tables, Figure 7, products are allocated by industries to derive symmetric square tables, industry by industry, which are necessary for analytical purposes such as the derivation of the Leontief inverse.

Figure 7. IMF Multi-Analytical Regional Input-Output Table (IMF-MARIO) at basic prices




Source: Authors elaboration

# MARIO's Dimensions

An important step in the estimation process is the definition of countries, products, and industries that will be considered in the MARIO model. These choices will impact the estimation, the results, and the future use of the model. While it is possible to change the number of components of these 3 key variables, experience shows that changing their definition usually is highly demanding in time and resources.

Usually, a good strategy is to adopt granular definitions of countries, products, and industries at the start of the estimation process, and then work with aggregated versions of the underlying database. Working with a granular version has several advantages: the estimation system will be ready to work with granular data when such data becomes available, and the results obtained from the aggregated versions of the underlying system tend to be more consistent than the estimation based on a less granular version of data. The use of granular data also provides flexibility to examine additional products and industries that may become more important over time.

Following these premises, the proposed list of countries considers all IMF member countries, select territories, key non-member economies, and the rest of the world (aggregation of the remaining economies). Through its large technical assistance program[7] the IMF has frequent interactions with compilers of SUTs and IOTs. This is a unique opportunity to access data and metadata on SUTs/IOTs and contribute to methodological improvements. The IMF has collected 25 SUTs from national statistical offices either through direct data requests or downloads from published official statistics. In the future the IMF plans to strengthen its data collection program to support MARIO.

The choice of industries and products is based on data availability and the expected future use of the MARIO to study questions related to economic structural analysis, trade, social and distributional aspects as well as environmental, emissions, energy, and natural resources issues, which are crucial for the future of our lives and economies.

Annexes I to III present, respectively, the preliminary list of 212 economies, 145 industries, and 179 products which is being considered in MARIO's estimation.

Another important aspect of the estimation process is the definition of components that will be shown for taxes, subsidies, and value added (Tables 1 and 2), final demand (Table 3 and 4), and valuation from purchaser's prices to basic prices (Table 5). Table 1 shows taxes, subsidies and value added components on national SUTs at basic prices, MARUT and MARIO, Table 2 shows taxes, subsidies and value added components on national SUTs at purchasers' prices, while Table 3 shows final demand components on national SUTs, and Table 4 shows final demand components on MARUT and MARIO.

[7] The IMF has 15 regional capacity development centers delivering national accounts technical assistance missions and training. These are supplemented by assistance from the IMF's headquarters, totaling more than 250 missions per year.

Table 1. Taxes, subsides and value added components on national SUTs at basic prices, MARUT and MARIO

| No | Code | Component |
|---|---|---|
| 1 | D21_31 | Taxes less subsidies on products |
| 2 | D1 | Compensation of employees |
| 3 | B2G_B3G | Gross operating surplus and mixed income |
| 4 | D29_D39 | Other taxes less subsidies on production |

Table 2. Taxes, subsidies and value added components on national SUTs at purchasers' prices

| No | Code | Component |
|---|---|---|
| 1 | D1 | Compensation of employees |
| 2 | B2G_B3G | Gross operating surplus and mixed income |
| 3 | D29_D39 | Other taxes less subsidies on production |

Table 3. Final demand components on national SUTs

| No | Code | Component |
|---|---|---|
| 1 | P31S14 | Household final consumption expenditure |
| 2 | P31S15 | NPISH final consumption expenditure |
| 3 | P3S13 | Government final consumption expenditure |
| 4 | P51 | Gross fixed capita formation |
| 5 | P52_53 | Changes In inventories and acquisitions less disposals of valuables |
| 6 | P33 | Final consumption expenditure of resident households abroad |
| 7 | P34 | Final consumption expenditure of non-resident households on the territory |
| 8 | P6 | Exports |

Table 4. Final demand components on MARUT and MARIO

| No | Code | Component |
|---|---|---|
| 1 | P31S14 | Household final consumption expenditure |
| 2 | P31S15 | NPISH final consumption expenditure |
| 3 | P3S13 | Government final consumption expenditure |
| 4 | P51 | Gross fixed capita formation |
| 5 | P52_53 | Changes In inventories and acquisitions less disposals of valuables |
| 6 | P33 | Final consumption expenditure of resident households abroad |

Table 5. Valuation components on national SUTs

| No | Code | Component |
|---|---|---|
| 1 | P1 | Output at basic prices |
| 2 | P7 | Imports |
| 3 | TSBP | Total supply at basic prices |
| 4 | M46 | Trade margin wholesale trade - economy |
| 5 | M47 | Trade margin retail trade - economy |
| 6 | M49 | Transport margin land - economy |
| 7 | M50 | Transport margin water - economy |
| 8 | M51 | Transport margin air - economy |
| 9 | TAX | Tax on products - economy |
| 10 | SUB | Subsidies on products - economy |
| 11 | TSPP | Total supply at purchasers' prices |

# Global MRIOs as Data Sources

Since the 2010's, different initiatives were conducted to estimate world MRIOs. These include the OECD-ICIO, WIOD, IDE-JETRO, EORA, GLORIA, FIGARO, EXIOBASE, GTAP-MRIO, ADB-MRIO, ECLAC-MRIO, and EMERGING. Some of these MRIO databases use information from earlier databases in their estimation: ADB-MRIO uses information from WIOD, GLORIA uses information from EORA and OECD-ICIO, FIGARO uses information from OECD-ICIO, the OECD-ICIO uses information from ADB-MRIO, ECLAC-MRIO uses information from ADB-MRIO and OECD-ICIO, EMERGING uses information from ADB-MRIO and OECD-ICIO. Different databases thus share data to improve estimation and decrease costs and time; this process may lead to better convergence of results from these different databases in the future.

Following this trend in the estimation of MRIOs and considering data quality, publicly available information, optimization of time and resources, the estimation of MARIO draws on information from selected MRIOs. As detailed in Table 4, the databases selected are FIGARO, OECD-ICIO, GLORIA, EXIOBASE, ADB-MRIO, and ECLAC-MRIO. Some of these databases show different levels of details according to the version and the years selected, which is the case for EXIOBASE, ADB-MRIO, and ECLAC-MRIO.

These databases will be used as inputs into the different blocks defined above by splitting these MRIOs to make the initial database that can be updated as new or better information becomes available. The goal is to build a system that can be constantly updated as new data and revisions become available, and that can be used to nowcast and forecast MARIO.

The databases estimated by international organizations – FIGARO, ICIO, ADB-MRIO, ECLAC-MRIO – will also play a special role in the final balancing of MARIO. Specifically, MARIO estimation will respect FIGARO information for European Union (EU) countries, which will be used as constraints in MARIO's estimation; the same will be true for the non-EU OECD countries shown in the OECD-ICIO, for the Asian non-OECD countries shown in the ADB-MRIO, and for the Latin America non-OECD countries shown in the ECLAC-MRIO.

Table 6. Main Global MRIO Databases, publicly available data

| Database | Release | Years | Economies | SUT | I-O | Products | Industries |
|---|---|---|---|---|---|---|---|
| **FIGARO** | 2025 | 2010 to 2023 | 50 | X | X | 64 | 64 |
| **ICIO** | 2025 | 1995 to 2022 | 81 | | X | | 50 |
| **GLORIA** | 2024 | 1990 to 2028 | 164 | X | X | 120 | 120 |
| **EXIOBASE 3.8.2** | 2021 | 1995 to 2022 | 49 | X | X | 200 | 163 |
| **EXIOBASE 3rx** | 2019 | 1995 to 2015 | 214 | X | X | 200 | 163 |
| **ADB-MRIO-1** | 2025 | 2000, 2007-2024 | 63 | | X | | 35 |
| **ADB-MRIO-2** | 2025 | 2017-2024 | 73 | | X | | 35 |
| **ECLAC-ADB-1** | 2020 | 2007, 2011, 2017 | 73 | | X | | 20 |
| **ECLAC-ADB-2** | 2020 | 2011 | 73 | | X | | 38 |
| **ECLAC-ADB-3** | 2020 | 2011 | 79 | | X | | 25 |
| **ECLAC-ADB-4** | 2020 | 2011 | 79 | | X | | 18 |
| **ECLAC-LAC** | 2020 | 2014 | 55 | | X | | 40 |

Sources: Eurostat (2025), OECD (2025), Industrial Ecology Virtual Laboratory (2024), EXIOBASE (2021), Asian Development Bank (2025), ECLAC (2020).

# Way Forward

The proposed framework for MARIO's estimation is expected to be flexible enough to: a) replace initial databases used in the estimation process with better databases or source data as they become available; b) add new databases; c) nowcast and forecast estimates based on IMF macroeconomic projections; and d) obtain yearly and quarterly estimates. Initial results are expected by the end of 2025.

MARIO's estimation will also benefit from the recently formed group of International Organizations - OECD, European Commission / Eurostat, IMF, UN-ECLAC, and ADB – whose goal is to reduce the differences found in results obtained by the different databases. To achieve this, the group will share data, methodologies, and information to improve the estimations made by each of these institutions.

, MARIO allows for estimation flexibility, provides sufficient granularity, addresses coverage gaps by country, year, industry, and products details  in existing MRIOs.  At the same time, it will improve estimates, taking s advantage of the IMF ability to collect and improve official SUTs. Furthermore, MARIO will be a powerful analytical tool enabling many applications for estimating harmonized multidimensional indicators to measure impacts of public and private policies on the economy, the environment, employment by gender, as well as social distributional effects.  It will consider implications of these policies on not only on national economies, but also on the countries' trading partners by incorporating interdependencies between economies involved in the global supply chain.

# Annex I. Economies

| Number | Economy | Code | IMF |
|---|---|---|---|
| 1 | Afghanistan | AFG | √ |
| 2 | Albania | ALB | √ |
| 3 | Algeria | DZA | √ |
| 4 | Andorra | AND | √ |
| 5 | Angola | AGO | √ |
| 6 | Antigua and Barbuda | ATG | √ |
| 7 | Argentina | ARG | √ |
| 8 | Armenia | ARM | √ |
| 9 | Australia | AUS | √ |
| 10 | Austria | AUT | √ |
| 11 | Azerbaijan | AZE | √ |
| 12 | The Bahamas | BHS | √ |
| 13 | Bahrain | BHR | √ |
| 14 | Bangladesh | BGD | √ |
| 15 | Barbados | BRB | √ |
| 16 | Belarus | BLR | √ |
| 17 | Belgium | BEL | √ |
| 18 | Belize | BLZ | √ |
| 19 | Benin | BEN | √ |
| 20 | Bhutan | BTN | √ |
| 21 | Bolivia | BOL | √ |
| 22 | Bosnia and Herzegovina | BIH | √ |
| 23 | Botswana | BWA | √ |
| 24 | Brazil | BRA | √ |
| 25 | Brunei Darussalam | BRN | √ |
| 26 | Bulgaria | BGR | √ |
| 27 | Burkina Faso | BFA | √ |
| 28 | Burundi | BDI | √ |
| 29 | Cabo Verde | CPV | √ |
| 30 | Cambodia | KHM | √ |
| 31 | Cameroon | CMR | √ |
| 32 | Canada | CAN | √ |
| 33 | Central African Republic | CAF | √ |
| 34 | Chad | TCD | √ |
| 35 | Chile | CHL | √ |
| 36 | China | CHN | √ |
| 37 | Colombia | COL | √ |
| 38 | Comoros | COM | √ |
| 39 | Democratic Republic of the Congo | COD | √ |
| 40 | Republic of Congo | COG | √ |
| 41 | Costa Rica | CRI | √ |
| 42 | Côte d'Ivoire | CIV | √ |
| 43 | Croatia | HRV | √ |
| 44 | Cyprus | CYP | √ |
| 45 | Czech Republic | CZE | √ |
| 46 | Denmark | DNK | √ |
| 47 | Djibouti | DJI | √ |
| 48 | Dominica | DMA | √ |
| 49 | Dominican Republic | DOM | √ |
| 50 | Ecuador | ECU | √ |
| 51 | Egypt | EGY | √ |
| 52 | El Salvador | SLV | √ |
| 53 | Equatorial Guinea | GNQ | √ |
| 54 | Eritrea | ERI | √ |

Continue …

Annex I continued

| Number | Economy | Code | IMF |
|---|---|---|---|
| 55 | Estonia | EST | √ |
| 56 | Eswatini | SWZ | √ |
| 57 | Ethiopia | ETH | √ |
| 58 | Fiji | FJI | √ |
| 59 | Finland | FIN | √ |
| 60 | France | FRA | √ |
| 61 | Gabon | GAB | √ |
| 62 | The Gambia | GMB | √ |
| 63 | Georgia | GEO | √ |
| 64 | Germany | DEU | √ |
| 65 | Ghana | GHA | √ |
| 66 | Greece | GRC | √ |
| 67 | Grenada | GRD | √ |
| 68 | Guatemala | GTM | √ |
| 69 | Guinea | GIN | √ |
| 70 | Guinea-Bissau | GNB | √ |
| 71 | Guyana | GUY | √ |
| 72 | Haiti | HTI | √ |
| 73 | Honduras | HND | √ |
| 74 | Hungary | HUN | √ |
| 75 | Iceland | ISL | √ |
| 76 | India | IND | √ |
| 77 | Indonesia | IDN | √ |
| 78 | Iran | IRN | √ |
| 79 | Iraq | IRQ | √ |
| 80 | Ireland | IRL | √ |
| 81 | Israel | ISR | √ |
| 82 | Italy | ITA | √ |
| 83 | Jamaica | JAM | √ |
| 84 | Japan | JPN | √ |
| 85 | Jordan | JOR | √ |
| 86 | Kazakhstan | KAZ | √ |
| 87 | Kenya | KEN | √ |
| 88 | Kiribati | KIR | √ |
| 89 | Korea | KOR | √ |
| 90 | Kosovo | KOS | √ |
| 91 | Kuwait | KWT | √ |
| 92 | Kyrgyz Republic | KGZ | √ |
| 93 | Lao P.D.R. | LAO | √ |
| 94 | Latvia | LVA | √ |
| 95 | Lebanon | LBN | √ |
| 96 | Lesotho | LSO | √ |
| 97 | Liberia | LBR | √ |
| 98 | Libya | LBY | √ |
| 99 | Lithuania | LTU | √ |
| 100 | Luxembourg | LUX | √ |
| 101 | Madagascar | MDG | √ |
| 102 | Malawi | MWI | √ |
| 103 | Malaysia | MYS | √ |
| 104 | Maldives | MDV | √ |
| 105 | Mali | MLI | √ |
| 106 | Malta | MLT | √ |
| 107 | Marshall Islands | MHL | √ |
| 108 | Mauritania | MRT | √ |
| 109 | Mauritius | MUS | √ |
| 110 | Mexico | MEX | √ |

Continue …

Annex I continued

| Number | Economy | Code | IMF |
|---|---|---|---|
| 111 | Micronesia | FSM | √ |
| 112 | Moldova | MDA | √ |
| 113 | Mongolia | MNG | √ |
| 114 | Montenegro | MNE | √ |
| 115 | Morocco | MAR | √ |
| 116 | Mozambique | MOZ | √ |
| 117 | Myanmar | MMR | √ |
| 118 | Namibia | NAM | √ |
| 119 | Nauru | NRU | √ |
| 120 | Nepal | NPL | √ |
| 121 | The Netherlands | NLD | √ |
| 122 | New Zealand | NZL | √ |
| 123 | Nicaragua | NIC | √ |
| 124 | Niger | NER | √ |
| 125 | Nigeria | NGA | √ |
| 126 | North Macedonia | MKD | √ |
| 127 | Norway | NOR | √ |
| 128 | Oman | OMN | √ |
| 129 | Pakistan | PAK | √ |
| 130 | Palau | PLW | √ |
| 131 | Panama | PAN | √ |
| 132 | Papua New Guinea | PNG | √ |
| 133 | Paraguay | PRY | √ |
| 134 | Peru | PER | √ |
| 135 | Philippines | PHL | √ |
| 136 | Poland | POL | √ |
| 137 | Portugal | PRT | √ |
| 138 | Qatar | QAT | √ |
| 139 | Romania | ROU | √ |
| 140 | Russian Federation | RUS | √ |
| 141 | Rwanda | RWA | √ |
| 142 | Samoa | WSM | √ |
| 143 | San Marino | SMR | √ |
| 144 | São Tomé and Príncipe | STP | √ |
| 145 | Saudi Arabia | SAU | √ |
| 146 | Senegal | SEN | √ |
| 147 | Serbia | SRB | √ |
| 148 | Seychelles | SYC | √ |
| 149 | Sierra Leone | SLE | √ |
| 150 | Singapore | SGP | √ |
| 151 | Slovak Republic | SVK | √ |
| 152 | Slovenia | SVN | √ |
| 153 | Solomon Islands | SLB | √ |
| 154 | Somalia | SOM | √ |
| 155 | South Africa | ZAF | √ |
| 156 | South Sudan | SSD | √ |
| 157 | Spain | ESP | √ |
| 158 | Sri Lanka | LKA | √ |
| 159 | St. Kitts and Nevis | KNA | √ |
| 160 | St. Lucia | LCA | √ |
| 161 | St. Vincent and the Grenadines | VCT | √ |
| 162 | Sudan | SDN | √ |
| 163 | Suriname | SUR | √ |
| 164 | Sweden | SWE | √ |
| 165 | Switzerland | CHE | √ |

Continue …

Annex I continued

| Number | Economy | Code | IMF |
|---|---|---|---|
| 166 | Syria | SYR | √ |
| 166 | Syria | SYR | √ |
| 167 | Tajikistan | TJK | √ |
| 168 | Tanzania | TZA | √ |
| 169 | Thailand | THA | √ |
| 170 | Timor-Leste | TLS | √ |
| 171 | Togo | TGO | √ |
| 172 | Tonga | TON | √ |
| 173 | Trinidad and Tobago | TTO | √ |
| 174 | Tunisia | TUN | √ |
| 175 | Türkiye | TUR | √ |
| 176 | Turkmenistan | TKM | √ |
| 177 | Tuvalu | TUV | √ |
| 178 | Uganda | UGA | √ |
| 179 | Ukraine | UKR | √ |
| 180 | United Arab Emirates | ARE | √ |
| 181 | United Kingdom | GBR | √ |
| 182 | United States | USA | √ |
| 183 | Uruguay | URY | √ |
| 184 | Uzbekistan | UZB | √ |
| 185 | Vanuatu | VUT | √ |
| 186 | Venezuela | VEN | √ |
| 187 | Vietnam | VNM | √ |
| 188 | Yemen | YEM | √ |
| 189 | Zambia | ZMB | √ |
| 190 | Zimbabwe | ZWE | √ |
| 191 | Hong Kong SAR | HKG | § |
| 192 | Macao SAR | MAC | § |
| 193 | Greenland | GRL | § |
| 194 | French Polynesia | PYF | § |
| 195 | New Caledonia | NCL | § |
| 196 | Aruba | ABW | § |
| 197 | Curaçao | CUW | § |
| 198 | Sint Maarten | SXM | § |
| 199 | Anguilla | AIA | § |
| 200 | Bermuda | BMU | § |
| 201 | Cayman Islands | CYM | § |
| 202 | Montserrat | MSR | § |
| 203 | Turks and Caicos Islands | TCA | § |
| 204 | British Virgin Islands | VGB | § |
| 205 | Puerto Rico | PRI | § |
| 206 | Cuba | CUB | ‡ |
| 207 | Cook Islands | COK | ‡ |
| 208 | Liechtenstein | LIE | ‡ |
| 209 | Monaco | MCO | ‡ |
| 210 | Democratic People's Republic of Korea | PRK | ‡ |
| 211 | Taiwan Province of China | TWN | ‡ |
| 212 | West Bank and Gaza | WBG | ‡ |

| Note: | |
|---|---|
| √ | IMF member country |
| § | IMF member country territory |
| ‡ | Non-IMF member country |

# Annex II. Industries

| No. | Code | Industry | ISIC 4 | Name |
|---|---|---|---|---|
| 1 | I01.a | Growing of rice | A | Agriculture, forestry and fishing |
| 2 | I01.b | Growing of cereals (except rice), leguminous crops and oil seeds | | |
| 3 | I01.c | Sugar cane and sugar beet production | | |
| 4 | I01.d | Other crops production | | |
| 5 | I01.e | Cattle and sheep production | | |
| 6 | I01.x | Crop, animal production, hunting nec and support activities | | |
| 7 | I02.a | Silviculture | | |
| 8 | I02.x | Extraction and gathering of forest products, other forestry activities, support services | | |
| 9 | I03 | Fishing and aquaculture | | |
| 10 | I05 | Mining of coal and lignite | B | Mining and quarrying |
| 11 | I06.a | Extraction of crude petroleum | | |
| 12 | I06.b | Extraction of natural gas | | |
| 13 | I07.a | Mining of uranium and thorium ores | | |
| 14 | I07.b | Mining of iron ores | | |
| 15 | I07.c | Mining of copper ores and concentrates | | |
| 16 | I07.d | Mining of nickel ores and concentrates | | |
| 17 | I07.e | Mining of aluminum ores and concentrates | | |
| 18 | I07.f | Mining of precious metal ores and concentrates | | |
| 19 | I07.g | Mining of lead, zinc and tin ores and concentrates | | |
| 20 | I07.h | Mining of lithium | | |
| 21 | I07.i | Mining of cobalt | | |
| 22 | I07.j | Mining of manganese | | |
| 23 | I07.k | Mining of other critical metal minerals nec | | |
| 24 | I07.x | Mining of metals nec | | |
| 25 | I08.a | Quarrying of stone, sand and clay | | |
| 26 | I08.b | Mining of graphite | | |
| 27 | I08.c | Mining of other critical non-metallic minerals nec | | |
| 28 | I08.x | Mining and quarrying nec | | |
| 29 | I09 | Mining support service activities | | |
| 30 | I10.a | Manufacture of vegetable and animal oils and fats | C | Manufacturing |
| 31 | I10.x | Manufacture of food products nec | | |
| 32 | I11 | Manufacture of beverages | | |
| 33 | I12 | Manufacture of tobacco products | | |
| 34 | I13 | Manufacture of textiles | | |
| 35 | I14 | Manufacture of wearing apparel | | |
| 36 | I15 | Manufacture of leather and related products | | |
| 37 | I16 | Manufacture of wood and of products of wood and cork, etc. | | |
| 38 | I17 | Manufacture of paper and paper products | | |
| 39 | I18 | Printing and reproduction of recorded media | | |
| 40 | I19.a | Manufacture of coke oven products | | |
| 41 | I19.b | Manufacture of refined petroleum products | | |
| 42 | I20.a | Manufacture of fuel elements for nuclear reactors | | |
| 43 | I20.b | Manufacture of basic plastics | | |
| 44 | I20.c | Manufacture of nitrogenous fertilizers | | |
| 45 | I20.d | Manufacture of non-nitrogenous and mixed fertilizers | | |
| 46 | I20.e | Manufacture of biofuels | | |
| 47 | I20.f | Manufacture of hydrogen, green | | |
| 48 | I20.g | Manufacture of hydrogen, non-green | | |
| 49 | I20.x | Manufacture of other chemical products nec | | |
| 50 | I21 | Manufacture of basic pharmaceutical products and preparations | | |
| 51 | I22 | Manufacture of rubber and plastics products | | |

Continue …

Annex II continued

| No. | Code | Industry | ISIC 4 | Name |
|---|---|---|---|---|
| 52 | I23.a | Manufacture of glass and glass products | C | Manufacturing |
| 53 | I23.b | Manufacture of clay building materials | | |
| 54 | I23.c | Manufacture of cement, lime and plaster | | |
| 55 | I23.d | Manufacture of graphite | | |
| 56 | I23.e | Manufacture of other critical non-metallic minerals nec | | |
| 57 | I23.x | Manufacture of other non-metallic mineral products nec | | |
| 58 | I24.a | Manufacture of iron and steel - Electric Arc Furnace (EAF) | | |
| 59 | I24.b | Manufacture of iron and steel - Basic Oxygen Furnace (BOF) | | |
| 60 | I24.c | Manufacture of copper | | |
| 61 | I24.d | Manufacture of nickel | | |
| 62 | I24.e | Manufacture of aluminum | | |
| 63 | I24.f | Manufacture of precious metal | | |
| 64 | I24.g | Manufacture of lead, zinc and tin | | |
| 65 | I24.h | Manufacture of lithium | | |
| 66 | I24.i | Manufacture of cobalt | | |
| 67 | I24.j | Manufacture of manganese | | |
| 68 | I24.k | Manufacture of other critical basic metals nec | | |
| 69 | I24.x | Manufacture of basic metals nec | | |
| 70 | I25 | Manufacture of fabricated metal products, except machry & equipment | | |
| 71 | I26.a | Manufacture of semiconductors | | |
| 72 | I26.b | Manufacture of solar panels | | |
| 73 | I26.x | Manufacture of computer, electronic and optical products nec | | |
| 74 | I27.a | Manufacture of batteries and accumulators | | |
| 75 | I27.x | Manufacture of electrical equipment nec | | |
| 76 | I28.a | Manufacture of wind turbines | | |
| 77 | I28.x | Manufacture of machinery and equipment nec | | |
| 78 | I29.a | Manufacture of electric vehicles | | |
| 79 | I29.b | Manufacture of hybrid electric vehicles | | |
| 80 | I29.x | Manufacture of internal combustion engine vehicles and other nec | | |
| 81 | I30 | Manufacture of other transport equipment | | |
| 82 | I31T32 | Manufacture of furniture, other manufacturing | | |
| 83 | I33 | Repair and installation of machinery and equipment | | |
| 84 | I35.a | Production of electricity by coal | D | Electricity, gas, steam and air conditioning supply |
| 85 | I35.b | Production of electricity by gas | | |
| 86 | I35.c | Production of electricity by nuclear | | |
| 87 | I35.d | Production of electricity by hydro | | |
| 88 | I35.e | Production of electricity by wind | | |
| 89 | I35.f | Production of electricity by petroleum and other oil derivatives | | |
| 90 | I35.g | Production of electricity by biomass and waste | | |
| 91 | I35.h | Production of electricity by solar photovoltaic | | |
| 92 | I35.i | Production of electricity by solar thermal | | |
| 93 | I35.j | Production of electricity by tide, wave, ocean | | |
| 94 | I35.k | Production of electricity by Geothermal | | |
| 95 | I35.l | Production of electricity nec | | |
| 96 | I35.m | Transmission and distribution of electricity | | |
| 97 | I35.n | Manufacture of gas; distribution of gaseous fuels through mains | | |
| 98 | I35.x | Other activities on electricity, gas,Steam and air conditioning supply nec | | |
| 99 | I36 | Water collection, treatment and supply | E | Water supply, sewerage, waste management and remediation activities |
| 100 | I37 | Sewerage | | |
| 101 | I38.a | Recycling of waste | | |
| 102 | I38.b | Incineration of waste | | |
| 103 | I38.x | Waste collection, treatment and disposal, and recovery activities nec | | |
| 104 | I39 | Remediation activities and other waste management services | | |

Continue …

Annex II continued

| No. | | Code | Industry | ISIC 4 | Name |
|---|---|---|---|---|---|
| 105 | I41T43 | Construction | | F | Construction |
| 106 | I46 | Wholesale trade | | G | Wholesale and retail trade, repair of motor vehicles and motorcycles |
| 107 | I47 | Retail trade | | | |
| 108 | I49.a | Land transport, passengers | | H | Transportation and storage |
| 109 | I49.b | Land and pipelines transport, freight | | | |
| 110 | I50.a | Water transport, passengers | | | |
| 111 | I50.b | Water transport, freight | | | |
| 112 | I51.a | Air transport, passengers | | | |
| 113 | I51.b | Air transport, freight | | | |
| 114 | I52 | Warehousing and support activities for transportation | | | |
| 115 | I53 | Postal and courier activities | | | |
| 116 | I55 | Accommodation | | I | Accommodation and food service activities |
| 117 | I56 | Food and beverage service activities | | | |
| 118 | I58 | Publishing activities | | J | Information and communication |
| 119 | I59T60 | Audiovisual and broadcasting activities | | | |
| 120 | I61 | Telecommunications | | | |
| 121 | I62T63 | IT and other information services | | | |
| 122 | I64 | Financial service activities, except insurance and pension funding | | K | Financial and insurance activities |
| 123 | I65 | Insurance, reinsurance and pension funding, except compulsory S.S. | | | |
| 124 | I66 | Activities auxiliary to financial service and insurance activities | | | |
| 125 | I68.a | Imputed rents of owner-occupied dwellings | | L | Real estate activities |
| 126 | I68.b | Real estate activities excluding imputed rents | | | |
| 127 | I69T70 | Legal, accounting, head offices, management consultancy activities | | M | Professional, scientific and technical activities |
| 128 | I71 | Architectural and engineering activities, technical testing & analysis | | | |
| 129 | I72 | Scientific research and development | | | |
| 130 | I73 | Advertising and market research | | | |
| 131 | I74T75 | Other professional, scientific and tech. activities, veterinary activ. | | | |
| 132 | I77 | Rental and leasing activities | | N | Administrative and support service activities |
| 133 | I78 | Employment activities | | | |
| 134 | I79 | Travel agency, tour operator, reservation service & related activities | | | |
| 135 | I80T82 | Security, services to buildings and other business support activities | | | |
| 136 | I84 | Public administration and defense, compulsory social security | | O | Public administration and defense, compulsory social security |
| 137 | I85 | Education | | P | Education |
| 138 | I86 | Human health activities | | Q | Human health and social work activities |
| 139 | I87T88 | Residential care and social work activities | | | |
| 140 | I90T92 | Arts, cultural activities, gambling and betting activities | | R | Arts, entertainment and recreation |
| 141 | I93 | Sports activities and amusement and recreation activities | | | |
| 142 | I94 | Activities of membership organizations | | S | Other service activities |
| 143 | I95 | Repair and maintenance of computers, personal and household goods, and motor vehicles and motorcycles | | | |
| 144 | I96 | Other personal service activities | | | |
| 145 | I97T98 | Act. of HH as employers, undif. G&S-prod. activities of HH for own use | | T | Act. of HH as employers, undif. G&S-prod. activities of HH for own use |

# Annex III. Products

| No | Code | Product | ISIC 4 | Name |
|---|---|---|---|---|
| 1 | P01.a | Growing of rice | A | Agriculture, forestry, and fishing |
| 2 | P01.b | Growing of cereals (except rice), leguminous crops and oil seeds | | |
| 3 | P01.c | Sugar cane and sugar beet | | |
| 4 | P01.d | Other crops | | |
| 5 | P01.e | Cattle and sheep | | |
| 6 | P01.x | Crop, animal production, hunting nec and support activities | | |
| 7 | P02.a | Silviculture products | | |
| 8 | P02.x | Extraction and gathering of forest products, other foresty products, support services | | |
| 9 | P03 | Fishing products and aquaculture | | |
| 10 | P05.a | Anthracite | B | Mining and quarrying |
| 11 | P05.b | Coking coal | | |
| 12 | P05.c | Other bituminous coal | | |
| 13 | P05.d | Sub-bituminous coal | | |
| 14 | P05.e | Lignite | | |
| 15 | P05.f | Peat | | |
| 16 | P05.x | Other coal products nec | | |
| 17 | P06.a | Crude petroleum | | |
| 18 | P06.b | Natural gas | | |
| 19 | P07.a | Uranium and thorium ores | | |
| 20 | P07.b | Iron ores | | |
| 21 | P07.c | Copper ores and concentrates | | |
| 22 | P07.d | Nickel ores and concentrates | | |
| 23 | P07.e | Aluminum ores and concentrates | | |
| 24 | P07.f | Precious metal ores and concentrates | | |
| 25 | P07.g | Lead, zinc and tin ores and concentrates | | |
| 26 | P07.h | Lithium | | |
| 27 | P07.i | Cobalt | | |
| 28 | P07.j | Manganese | | |
| 29 | P07.k | Other critical metal minerals nec | | |
| 30 | P07.x | Other metals nec | | |
| 31 | P08.a | Stone, sand and clay | | |
| 32 | P08.b | Graphite | | |
| 33 | P08.c | Other critical non-metallic minerals nec | | |
| 34 | P08.x | Mining and quarrying nec | | |
| 35 | P09 | Mining support services | | |
| 36 | P10.a | Vegetable and animal oils and fats products | C | Manufacturing |
| 37 | P10.x | Food products nec | | |
| 38 | P11 | Beverages | | |
| 39 | P12 | Tobacco products | | |
| 40 | P13 | Textiles | | |
| 41 | P14 | Wearing apparel | | |
| 42 | P15 | Leather and related products | | |
| 43 | P16 | Wood & prod. of wood & cork, exc. furniture, of straw & plaiting mat. | | |
| 44 | P17 | Paper and paper products | | |
| 45 | P18 | Printing and recording services | | |
| 46 | P19.a.1 | Coke Oven Coke | | |
| 47 | P19.a.2 | Gas Coke | | |
| 48 | P19.a.3 | Coal Tar | | |
| 49 | P19.b.1 | Motor Gasoline | | |
| 50 | P19.b.2 | Aviation Gasoline | | |
| 51 | P19.b.3 | Gasoline Type Jet Fuel | | |

Continue …

Annex III continued

| No | Code | Product | ISIC 4 | Name |
|---|---|---|---|---|
| 52 | P19.b.4 | Kerosene Type Jet Fuel | C | Manufacturing |
| 53 | P19.b.5 | Kerosene | | |
| 54 | P19.b.6 | Gas/Diesel Oil | | |
| 55 | P19.b.7 | Heavy Fuel Oil | | |
| 56 | P19.b.8 | Refinery Gas | | |
| 57 | P19.b.9 | Liquefied Petroleum Gases (LPG) | | |
| 58 | P19.b.10 | Refinery Feedstocks | | |
| 59 | P19.b.11 | Ethane | | |
| 60 | P19.b.12 | Naphtha | | |
| 61 | P19.b.13 | White Spirit & SBP | | |
| 62 | P19.b.14 | Lubricants | | |
| 63 | P19.b.15 | Bitumen | | |
| 64 | P19.b.16 | Paraffin Waxes | | |
| 65 | P19.b.17 | Petroleum Coke | | |
| 66 | P19.b.x | Other Petroleum Products nec | | |
| 67 | P20.a | Nuclear fuel | | |
| 68 | P20.b | Plastics, basic | | |
| 69 | P20.c | Nitrogenous fertilizers | | |
| 70 | P20.d | Non-nitrogenous and mixed fertilizers | | |
| 71 | P20.e.1 | Charcoal | | |
| 72 | P20.e.2 | Additives/Blending Components | | |
| 73 | P20.e.3 | Biogasoline | | |
| 74 | P20.e.4 | Biodiesels | | |
| 75 | P20.e.x | Other Liquid Biofuels nec | | |
| 76 | P20.f | Hydrogen, green | | |
| 77 | P20.g | Hydrogen, non-green | | |
| 78 | P20.x | Other chemical products nec | | |
| 79 | P21 | Basic pharmaceutical products and pharmaceutical preparations | | |
| 80 | P22 | Rubber and plastics products | | |
| 81 | P23.a | Glass and glass products | | |
| 82 | P23.b | Clay building materials | | |
| 83 | P23.c | Cement, lime and plaster | | |
| 84 | P23.d | Graphite | | |
| 85 | P23.e | Other critical non-metallic minerals nec | | |
| 86 | P23.x | Other non-metallic mineral products nec | | |
| 87 | P24.a | Iron and steel - Electric Arc Furnace (EAF) | | |
| 88 | P24.b | Iron and steel - Basic Oxygen Furnace (BOF) | | |
| 89 | P24.c | Copper | | |
| 90 | P24.d | Nickel | | |
| 91 | P24.e | Aluminum | | |
| 92 | P24.f | Precious metal | | |
| 93 | P24.g | Lead, zinc and tin | | |
| 94 | P24.h | Lithium | | |
| 95 | P24.i | Cobalt | | |
| 96 | P24.j | Manganese | | |
| 97 | P24.k | Other criticall basic metals minerals nec | | |
| 98 | P24.x | Other basic metals nec | | |
| 99 | P25 | Fabricated metal products, except machinery and equipment | | |
| 100 | P26.a | Semiconductors | | |
| 101 | P26.b | Solar panels | | |

Continue …

Annex III continued

| No | Code | Product | ISIC 4 | Name |
|---|---|---|---|---|
| 102 | P26.x | Computer, electronic and optical products nec | C | Manufacturing |
| 103 | P27.a | Batteries and accumulators | | |
| 104 | P27.x | Electrical equipment nec | | |
| 105 | P28.a | Wind turbines | | |
| 106 | P28.x | Machinery and equipment nec | | |
| 107 | P29.a | Electric vehicles | | |
| 108 | P29.b | Hybrid electric vehicles | | |
| 109 | P29.x | Internal combustion engine vehicles and other nec | | |
| 110 | P30 | Other transport equipment | | |
| 111 | P31T32 | Furniture and other manufacturing | | |
| 112 | P33 | Repair and installation of machinery and equipment | | |
| 113 | P35.a | Electricity by coal | D | Electricity, gas, steam and air conditioning supply |
| 114 | P35.b | Electricity by gas | | |
| 115 | P35.c | Electricity by nuclear | | |
| 116 | P35.d | Electricity by hydro | | |
| 117 | P35.e | Electricity by wind | | |
| 118 | P35.f | Electricity by petroleum and other oil derivatives | | |
| 119 | P35.g | Electricity by biomass and waste | | |
| 120 | P35.h | Electricity by solar photovoltaic | | |
| 121 | P35.i | Electricity by solar thermal | | |
| 122 | P35.j | Electricity by tide, wave, ocean | | |
| 123 | P35.k | Electricity by Geothermal | | |
| 124 | P35.l | Electricity nec | | |
| 125 | P35.m | Transmission and distribution services of electricity | | |
| 126 | P35.n.1 | Coke oven gas | | |
| 127 | P35.n.2 | Blast Furnace Gas | | |
| 128 | P35.n.3 | Oxygen Steel Furnace Gas | | |
| 129 | P35.n.4 | Gas Works Gas | | |
| 130 | P35.n.5 | Biogas | | |
| 131 | P35.n.6 | Distribution services of gaseous fuels through mains | | |
| 132 | P35.x | Other electricity, gas, Steam and air conditioning supply nec | | |
| 133 | P36 | Natural water, water treatment and supply services | E | Water supply, sewerage, waste management and remediation activities |
| 134 | P37 | Sewerage | | |
| 135 | P38.a | Recycling of waste | | |
| 136 | P38.b | Incineration of waste | | |
| 137 | P38.x | Waste collection, treatment and disposal, and recovery nec | | |
| 138 | P39 | Remediation activities and other waste management services | | |
| 139 | P41T43 | Constructions and construction works | F | Construction |
| 140 | P46 | Wholesale trade services | G | Wholesale and retail trade, repair of motor vehicles and motorcycles |
| 141 | P47 | Retail trade services | | |
| 142 | P49.a | Land transport services, passengers | H | Transportation and storage |
| 143 | P49.b | Land and pipelines transport services, freight | | |
| 144 | P50.a | Water transport services, passengers | | |
| 145 | P50.b | Water transport services, freight | | |
| 146 | P51.a | Air transport services, passengers | | |
| 147 | P51.b | Air transport services, freight | | |
| 148 | P52 | Warehousing and support services for transportation | | |
| 149 | P53 | Postal and courier services | | |
| 150 | P55 | Accommodation services | I | Accommodation and food service activities |
| 151 | P56 | Food and beverage serving services | | |

Continue …

Annex III continued

| No | Code | Product | ISIC 4 | Name |
|---|---|---|---|---|
| 152 | P58 | Publishing services | J | Information and communication |
| 153 | P59T60 | Audiovisual and broadcasting services | | |
| 154 | P61 | Telecommunications services | | |
| 155 | P62T63 | Computer programming, consultancy and related serv., Information serv. | | |
| 156 | P64 | Financial services, except insurance and pension funding | K | Financial and insurance activities |
| 157 | P65 | Insurance, reinsurance & pension funding services, exc. compulsory S.S. | | |
| 158 | P66 | Services auxiliary to financial services and insurance services | | |
| 159 | P68.a | Imputed rents of owner-occupied dwellings | L | Real estate activities |
| 160 | P68.b | Real estate activities excluding imputed rents | | |
| 161 | P69T70 | Legal, accounting, head offices services, management consultancy serv. | M | Professional, scientific and technical activities |
| 162 | P71 | Architectural, engineering, tech. testing and analysis services | | |
| 163 | P72 | Scientific research and development services | | |
| 164 | P73 | Advertising and market research services | | |
| 165 | P74T75 | Other professional, scientific, technical and veterinary services | | |
| 166 | P77 | Rental and leasing services | N | Administrative and support service activities |
| 167 | P78 | Employment services | | |
| 168 | P79 | Travel agency, tour operator & other reservation services & related | | |
| 169 | P80T82 | Security & investigation serv., serv. to buildings & other bus. Support | | |
| 170 | P84 | Public administration and defense services, compulsory S.S. services | O | Public administration and defense, compulsory social security |
| 171 | P85 | Education services | P | Education |
| 172 | P86 | Human health services | Q | Human health and social work activities |
| 173 | P87T88 | Residential care services, social work services without accommodation | | |
| 174 | P90T92 | Creative, arts, entmnt, library, museum, other cult. serv., gambling | R | Arts, entertainment and recreation |
| 175 | P93 | Sporting services and amusement and recreation services | | |
| 176 | P94 | Services furnished by membership organisations | S | Other service activities |
| 177 | P95 | Repair and maintenance of computers, personal and household goods, and motor vehicles and motorcycles | | |
| 178 | P96 | Other personal services | | |
| 179 | P97T98 | Services of HH as employers, undif. G&S prod. by HH for own use | T | Act. of HH as employers, undif. G&S-prod. activities of HH for own use |

# References


Asian Development Bank (2022). *Economic Insights from Input–Output Tables for Asia and the Pacific*. DOI: http://dx.doi.org/10.22617/TCS220300-2.

Bjelle, E.L., K. Stadler, and R. (2019). *EXIOBASE 3rx (1.0) [Data set]*. Zenodo. https://doi.org/10.5281/zenodo.2654460.

Carrico, C., E. Corong, and D. van der Mensbrugghe (2020). "The GTAP version 10A Multi-Region Input Output (MRIO) Data Base". *GTAP Memorandum 34*. Center for Global Trade Analysis, Purdue University.

ECLAC (2020). *Economic Insights from Input–Output Tables for Asia and The Pacific*. https://www.cepal.org/en/events/global-input-output-tables-tools-analysis-integration-latin-america-world.

Eurostat (2008) *Eurostat Manual of Supply, Use and Input-Output Tables*. KS-RA-07-013-EN-N. https://ec.europa.eu/eurostat/documents/3859598/5902113/KS-RA-07-013-EN.PDF/b0b3d71e-3930-4442-94be-70b36cea9b39.

Eurostat (2021). *FIGARO Methodology*. https://ec.europa.eu/eurostat/documents/51957/12767369/Figaro-methodology.pdf/487255c9-903a-0cb7-f5e2-73f37e35f196?t=1620750704022.

Eurostat (2025). *Eurostat FIGARO*. https://ec.europa.eu/eurostat/web/esa-supply-use-input-tables/figaro.

EXIOBASE (2021). *EXIOBASE Database*. https://www.exiobase.eu/index.php.

Huo, J., P. Chen, K. Hubacek, H. Zheng, J. Meng, D. Guan (2022). "Full-scale, near real-time multi-regional input–output table for the global emerging economies (EMERGING)". *Journal of Industrial Ecology* 2022;26:1218–1232, https://doi.org/10.1111/jiec.13264.

Industrial Ecology Virtual Laboratory (2023). *GLORIA Database*. https://ielab.info/resources/gloria/about.

Lenzen, M., A. Geschke, M.D. Abd Rahman, Y. Xiao, J. Fry, R. Reyes, E. Dietzenbacher, S. Inomata, K. Kanemoto, B. Los, D. Moran, H. Schulte in den Bäumen, A. Tukker, T. Walmsley, T. Wiedmann, R. Wood and N. Yamano (2017). "The Global MRIO Lab charting the world economy". *Economic Systems Research* 29, 158-186.

Lenzen, M., A. Geschke, J. West, J. Fry, A. Malik, S. Giljum, L.M.i. Canals, P. Piñero, S. Lutter, T. Wiedmann, M. Li, M. Sevenster, J. Potočnik, I. Teixeira, M.V. Voore, K. Nansai and H. Schandl (2022). "Implementing the Material Footprint to measure progress towards SDGs 8 and 12". *Nature Sustainability*, 5, 157-166, https://doi.org/10.1038/s41893-021-00811-6.

Lenzen, M., K. Kanemoto, D. Moran, and A. Geschke (2012). "Mapping the structure of the world economy". *Environmental Science & Technology* 46(15) pp 8374–8381. DOI: 10.1021/es300171x. Supplementary Information.

Lenzen, M., D. Moran, K. Kanemoto, A. Geschke (2013). "Building EORA: A Global Multi-regional Input-Output Database at High Country and Sector Resolution". *Economic Systems Research*, 25:1, 20-49, DOI:10.1080/09535314.2013.769938

Meng, B., Y. Zhang, and S. Inomata (2013). "Compilation and Applications of IDE-JETRO's International Input–Output Tables", *Economic Systems Research*, 25:1, 122-142, DOI: 10.1080/09535314.2012.761597

Miller, R.E., and P.D. Blair (2022). *Input-output analysis: Foundations and extensions* (3rd ed.). Cambridge University Press.

OECD (2021), *OECD Inter-Country Input-Output Database*, http://oe.cd/icio

Remond-Tiedrez, I., and J. M.Rueda-Cantuche (ed.) (2019). *EU inter-country supply, use and input-output tables: Full international and global accounts for research in input-output analysis (FIGARO)*. Eurostat Statistical Working Papers. https://ec.europa.eu/eurostat/web/products-statistical-working-papers/-/ks-tc-19-002.

Stadler, K. et al. (2018) “EXIOBASE 3: Developing a Time Series of Detailed Environmentally Extended Multi-Regional Input-Output Tables”. *Journal of Industrial Ecology* 22, 502-515, doi:10.1111/jiec.12715 (2018).

Stadler, K. et al. (2021). *EXIOBASE 3 (3.8.2) [Data set]*. Zenodo. https://doi.org/10.5281/zenodo.5589597.

Timmer, M.P., E. Dietzenbacher, B. Los, R. Stehrer, and G.J. de Vries (2015), "An Illustrated User Guide to the World Input–Output Database: the Case of Global Automotive Production", *Review of International Economics*., 23: 575–605

Timmer, M.P., B. Los, R. Stehrer, and G.J. de Vries, G. J. (2016), "An Anatomy of the Global Trade Slowdown based on the WIOD 2016 Release", *GGDC research memorandum number 162*, University of Groningen