Explanatory note:

Export of Value Added Database

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# 1 Introduction

The relevance of services to competitiveness hinges in part on the strength of economy- wide linkages. The Export of Value Added (EVA) database illustrates the strength of such linkages. It provides data on how value added structures and services linkages to trade have evolved over time. Thanks to repeated updating of the GTAP dataset, we have data for both cross border linkages in recent years, and how these have changed since the early 1990s. This serves as the basis for the database, which builds on Christen, Francois, and Hoekman (2012) and Francois, Manchin, and Tomberger (2012). We work with a panel of global input-output data (a set of global social accounting matrices spanning intermittent years from 1992 to 2011) that covers not only key OECD economies, but also a range of developing countries as well.

# 2 Source data

We work with multiple versions of the GTAP database, benchmarked to 1992, 1995, 1997, 2001, 2004, 2007 and 2011. It represents a form of social accounting data – a variation on the social accounting matrix or SAM – where incomes or receipts are shown in the rows of the SAM while expenditures or outlays are shown in the columns.

The basic structure of the GTAP dataset is well documented (see McDougall 2001, and McDougall et al 2005).The GTAP website also provides extensive documentation on the underlying data structure, its sources, the GTAP model structure for each release (www.gtap.org). It is produced by a consortium that includes the World Bank, US International Trade Commission, World Trade Organization, OECD, UNCTAD, UNFAO and a number of universities and research institutes. It represents a massive combined effort to produce a shared public good – a database of national input-output tables, organized as social accounting data and linked to each other through trade and investment flows. The project itself, based as Purdue University, has been a massive undertaking. (Hertel 2012). It stands as a critical, open source input to applied policy modeling ranking from climate change to regional trade agreements and food security. Over time, the dataset has grown to include more countries and more sectors.

The GTAP database has been continuously updated and extended to new countries and sectors over each new release. However, in order to maintain backward compatibility, in our technical paper Francois, J., Manchin, M. and P. Tomberger (2013) we start with the 1992 structure of regions and sectors, and carry this forward in aggregation of more recent iterations of the dataset. This implies that we work with fewer countries and sectors than what is currently available in the dataset; nevertheless, we can maintain consistency. This structure is detailed in Table 1 below providing a list of regions and sectors included in the dataset. Nevertheless, in the dataset, we include for each year all the available new regions (see the list of countries and the corresponding income groups in Annex III. List of countries with corresponding country group for each year).

Table 1 Regions and sectors

|  |  |  |  |
| --- | --- | --- | --- |
|  | *Regions* |  | *Sectors* |
| aus | Australia | aff | Agr, Forestry, Fisheries |
| nzl | New Zealand | pfd | Processed Foods |
| jpn | Japan | egy | Energy Extraction |
| kor | Korea | omn | Minerals nec |
| idn | Indonesia | b t | Beverages and Tobacco Products |
| mys | Malaysia | tex | Textiles |
| phl | Philippines | wap | Wearing Apparel |
| sgp | Singapore | lea | Leather Products |
| tha | Thailand | lum | Wood Products |
| chn | China | ppp | Paper Products, Publishing |
| hkg | Hong Kong | crp | Chemical, Rubber, Plastic Products |
| twn | Taiwan | nmm | Mineral Products nec |
| ind | India | i s | Ferrous Metals |
| ras | Rest of South Asia | nfm | Metals nec |
| can | Canada | fmp | Metal Products |
| usa | United States | trn | Transport Equipment |
| mex | Mexico | mac | Machinery and Equipment nec |
| cam | Central America, Caribbean | omf | Manufactures nec |
| arg | Argentina | egw | Electricity, Gas, Water |
| bra | Brazil | cns | Construction |
| chl | Chile | t t | Trade and Transport Services |
| rsm | Rest of South America | osp | Other Private Services |
| e12 | European Community 12 | osg | PubAdmin/Defence/Health/Educat |
| ec3 eea fsu mea  ssa row | Austria, Finland, Sweden new EU12 Members  Former Soviet Union  Rest of Middle East  Rest of Sub-Saharan Africa Rest of World | dwe | Dwellings |

# 3 Methodology

The structure of the data provides a comprehensive and consistent record of national income accounting relationships between different sectors and regions. It is based on a fundamental, general equilibrium principle of economics – every income (receipt) has a corresponding expenditure (outlay). The strength of this framework is that it provides a comprehensive record of the interrelationships of an economy, including intermediate and final demand linkages. For our purposes, it offers the advantage of linking consumption and external trade patterns explicitly to the inter-industry structure of intermediate demand. This allows for a fuller analysis than is possible when working strictly with input-output tables.

This complex structure of the dataset allows us to obtain the value added content of final output and exports including both direct and indirect value added. In order to obtain these, we first need to calculate intermediate multiplier matrixes which will be then used to multiply exports and final outputs to obtain the corresponding value added shares. The first matrix which is calculated, is the widely used Leontief matrix (M) which measures the inputs contained in a unit of final output. This M matrix contains both direct and indirect inputs. Next, we need to calculate a matrix which has the value added shares of total output (which will be matrix ). Using these two matrixes as multipliers one can obtain the value added shares of exports and final outputs. This is explained in what follows more formally.

We begin by denoting a representation of intermediate and final demands as follows:

Y=Z—AZ (1)

In equation (1), the term Y denotes a final demand vector, Z denotes a gross output vector, and A denotes a matrix of intermediate use coefficients. Equation (1) therefore defines final output with respect to intermediate input requirements. With some manipulation we arrive at the Leontief inverse matrix, also known as the multiplier matrix M.

Z=(I—A)−1 Y=MY (2)

The multiplier matrix M measures the inputs contained in a unit of final output. In particular, if we assign the sector indexes i, j to the A and M matrices, then a repre­sentative element of the M matrix  gives the direct and indirect inputs (and thus the sector i receipts) linked to each unit (for example each dollar) of sector j receipts in the data.[[1]](#footnote-1) This implies real production activities measured by value of output. For our purposes, it provides a means to trace, through these income flows, the flow of gross activity and value added from intermediate to final goods and services, ostensibly across borders as well as sectors. Because linkages will vary by industry, each industry will be characterized by different multipliers. To focus on value added, we note first that in terms of gross output values Z, some share of this involves value added within each sector. We define as the diagonal matrix indexed over i,j with diagonal elements equal to the value added shares of output Z. We then use M to provide a breakdown of the flow of value added across activities in the form of the matrix V.

V= M (3)

Similar to the Leontief inverse matrix itself, the V matrix identifies the inputs of value added in each sector related to a unit of final demand. If we multiply V by the diagonal matrix whose non-zero elements are the vector of final outputs, the matrix yields a breakdown of economy-wide value added (the primary component of Gross National Product on a source basis). Similarly, if we multiply V by the diagonal matrix  whose non-zero elements are the national export vector, we can recover the value added content of exports X (both direct and indirect).

G=V  (4)

H=V (5)

The G matrix and the H matrix give us the set of linkages, both direct and indirect, between value added across sectors.

# 4 Example

We provide an example for Italy in 2007 in Table 2 below.[[2]](#footnote-2)2 In the table, we have aggregated Italy into 10 broad sectors. Column A provides the allocation of value added across sectors. Column B then provides the shares of each of the 10 sectors in gross exports by Italy in 2007. From the table, commercial services accounted for 44 percent of value added, but 17 percent of exports. Column C then provides shares for value of exports on a value added basis. In the case of commercial services, this includes not only value added contained in direct exports of commercial services, but also value added contained in commercial services used in the production of other goods and services (like motor vehicles and processed foods and beverages) for export. On this basis, the relative importance of commercial services in exports is close to the importance for the overall domestic economy. Column D provides an alternative view, based on the upstream domestic value added contained in exports. On this basis, we see for example that machinery accounted for 27 percent of the value added contained in Italian exports in 2007. This follows from not only labor and capital in the sector, but also the primary inputs employed in other sectors that provided inputs to the machinery sector, including services.

In order to better explain forward and backward linkages and the construction of Table 2, the matrixes used for constructing this table need to be discussed. The values in Table 2 are themselves based on the G matrix and the H matrix as defined above. These give us the set of linkages, both direct and indirect, between value added across sectors. These underlying matrices are provided for Italy in Table 3 and Table 4 below. These are based on aggregation of the EVA database to 10 sectors as indicated in the tables. Starting with Table 3, we can see that 43.89 percent of value added was located in various commercial or market service activities (including for example financial services and ICT services). This follows from reading the sum of row S9. Reading the values in row S9 provides the value added in this sector, broken down into the various sectors where these activities fed, ultimately, into final demand. For example, 2.87 percent of market services value added went into other machinery (S6). Thus summing up all the value added of market services (S9) going into the different sectors gives us the total value added of this sector. This is what we call as forward linkage, counting the value added of a given sector which went into other sectors. In other words, the value added in final demand based on forward linkages for the commercial services sector (S9) is 43.89 percent.

At the same time, much of this actually served as intermediate inputs, so that in terms of final demand for commercial services, this accounted for a lower, 33.88 percent of value added (the last row in Table 3 for column S9). Reading the column totals gives us the backward linkages for a given sector. Thus the value added in final demand based on backward linkages for the commercial services (S9) is 33.88 percent. This way of calculating value added takes into account all the value added from other sectors which went into this given sector.

Basically, on a cost basis, 10 percent of value added of the economy as a whole involves commercial services used as intermediate inputs by other sectors (the difference between the row and column totals for S9 in the table). If we focus on other machinery, in terms of sales for final consumption (again the last entry in the Table for column S6) roughly 10.67 percent of total value added goes into output in this sector. However, only 7.07 percent of economy wide value added (or about two-thirds of the total) involves value added in the sector itself (last entry of row for S6). The rest involved inputs from other sectors. Again, using market or commercial services as an example, it accounts for roughly 26.9 percent of total value added costs in the other machinery sector (as 2.87 is 26.9 percent of 10.67).

Table 2 Detailed Value Added Composition

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | *value added total economy* | *gross exports share of total value* | *value added in exports: forward linkages* | *value added in exports: backward linkages* |
|  | A | B | C | D |
| primary sectors | 2.86 | 4.19 | 4.39 | 2.45 |
| processed foods, beverages | 2.99 | 4.58 | 3.36 | 4.92 |
| textiles and clothing | 3.22 | 10.19 | 6.67 | 10.59 |
| chemicals, petrochemicals | 4.35 | 13.49 | 9.68 | 12.76 |
| motor vehicles | 1.19 | 9.21 | 2.91 | 8.07 |
| machinery | 7.07 | 26.75 | 15.83 | 27.09 |
| other manufacturing | 6.12 | 13.31 | 13.34 | 13.19 |
| utilities, construction | 9.75 | 0.70 | 4.70 | 0.79 |
| commercial services | 43.89 | 16.95 | 37.54 | 19.33 |
| public services | 18.55 | 0.64 | 1.58 | 0.83 |
| **total** | 100 | 100 | 100 | 100 |

source: calculated from attached database.

We next turn to the export structure of Italy on a value added basis. From Table 4, market services account for 37.54 percent of Italy’s exports, in terms of the activity content of trade (last row entry of S9). In other words, value added content of exports of market services based on forward linkages was 37.54 percent. However, if we focus on the value added contained in exports on a sector basis (for example how much value added was embodied in steel exports), we see that manufacturing is where Italy’s exports are concentrated. For example, motor vehicles and machinery account for 35.16 percent (last entries of columns S5 and S6). Like the results for total final demand in Table 3, in terms of exports, 26.9 percent of total value added costs for other machinery exports follow from inputs of market services (S6 entry for row S9 and column total for S6).

Table 3 Value Added Content of Final Demand G', Italy % share in 2007

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | supply sectors | | | | | | | | | | |
| demand sectors | S1 | S2 | S3 | S4 | S5 | S6 | S7 | S8 | S9 | S10 | Total |
| S1 primary production | 0.77 | 0.71 | 0.16 | 0.10 | 0.03 | 0.13 | 0.07 | 0.16 | 0.64 | 0.09 | 2.86 |
| S2 processed foods | 0.03 | 2.05 | 0.11 | 0.05 | 0.02 | 0.07 | 0.02 | 0.05 | 0.51 | 0.08 | 2.99 |
| S3 textiles clothing | 0.00 | 0.02 | 2.74 | 0.03 | 0.05 | 0.07 | 0.03 | 0.04 | 0.19 | 0.05 | 3.22 |
| S4 chemicals petrochems | 0.01 | 0.13 | 0.15 | 2.01 | 0.15 | 0.36 | 0.13 | 0.72 | 0.43 | 0.26 | 4.35 |
| S5 autos | 0.00 | 0.01 | 0.01 | 0.01 | 0.97 | 0.03 | 0.01 | 0.02 | 0.10 | 0.06 | 1.19 |
| S6 other machinery | 0.00 | 0.06 | 0.07 | 0.09 | 0.22 | 5.42 | 0.13 | 0.35 | 0.50 | 0.23 | 7.07 |
| S7 other manufacturing | 0.01 | 0.15 | 0.12 | 0.17 | 0.42 | 1.27 | 2.04 | 0.84 | 0.82 | 0.29 | 6.12 |
| S8 utilities construction | 0.00 | 0.17 | 0.15 | 0.24 | 0.11 | 0.36 | 0.23 | 7.12 | 0.97 | 0.40 | 9.75 |
| S9 market services | 0.06 | 1.10 | 1.23 | 0.93 | 0.89 | 2.87 | 0.96 | 3.06 | 29.40 | 3.39 | 43.89 |
| S10 public services | 0.00 | 0.04 | 0.04 | 0.04 | 0.03 | 0.10 | 0.03 | 0.12 | 0.32 | 17.83 | 18.55 |
| Total | 0.88 | 4.43 | 4.80 | 3.66 | 2.89 | 10.67 | 3.63 | 12.47 | 33.88 | 22.68 | 100 |

source: calculated from attached database.

Table 4 Value Added Content of Exports H', Italy % share in 2007

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | supply sectors | | | | | | | | | | |
| demand sectors | S1 | S2 | S3 | S4 | S5 | S6 | S7 | S8 | S9 | S10 | Total |
| S1 primary production | 1.77 | 0.77 | 0.38 | 0.36 | 0.10 | 0.32 | 0.28 | 0.01 | 0.40 | 0.00 | 4.39 |
| S2 processed foods | 0.05 | 2.26 | 0.26 | 0.16 | 0.05 | 0.16 | 0.08 | 0.00 | 0.32 | 0.00 | 3.36 |
| S3 textiles, clothing | 0.01 | 0.02 | 6.04 | 0.11 | 0.13 | 0.15 | 0.09 | 0.00 | 0.12 | 0.00 | 6.67 |
| S4 chemicals, petrochems | 0.05 | 0.15 | 0.36 | 7.01 | 0.41 | 0.91 | 0.48 | 0.04 | 0.26 | 0.01 | 9.68 |
| S5 autos | 0.00 | 0.01 | 0.01 | 0.02 | 2.70 | 0.07 | 0.02 | 0.00 | 0.06 | 0.00 | 2.91 |
| S6 other machinery | 0.03 | 0.07 | 0.16 | 0.31 | 0.62 | 13.81 | 0.51 | 0.02 | 0.31 | 0.01 | 15.83 |
| S7 other manufacturing | 0.03 | 0.17 | 0.27 | 0.59 | 1.17 | 3.19 | 7.36 | 0.05 | 0.50 | 0.01 | 13.34 |
| S8 utilities, construction | 0.19 | 0.20 | 0.34 | 0.83 | 0.31 | 0.91 | 0.84 | 0.47 | 0.59 | 0.01 | 4.70 |
| S9 market services | 0.30 | 1.23 | 2.67 | 3.25 | 2.49 | 7.30 | 3.42 | 0.18 | 16.58 | 0.12 | 37.54 |
| S10 public services | 0.02 | 0.04 | 0.08 | 0.13 | 0.09 | 0.26 | 0.10 | 0.01 | 0.19 | 0.65 | 1.58 |
| Total | 2.45 | 4.92 | 10.59 | 12.76 | 8.07 | 27.09 | 13.19 | 0.79 | 19.33 | 0.83 | 100 |

source calculated from attached database.

# 5 References

Christen, E,. J. Francois and B. Hoekman (2012),”CGE Modeling of Market Access in Services,” in P.B. Dixon and D.W. Jorgenson eds Handbook of Computable General Equilibrium Modeling Elsevier (forthcoming).

Francois, J., Manchin, M. and P. Tomberger (2013), ”Services Linkages and the Value Added Content of Trade,” working paper, Johannes Kepler University Linz.

Hertel, T. (2012), ”The Global Trade Analysis Project,” in P.B. Dixon and D.W. Jor­genson eds Handbook of Computable General Equilibrium Modeling Elsevier (forth­coming).

McDougall, R., ed. (2001). The GTAP database – version 5, Global Trade Analysis Center: Purdue University.

McDougall, RA and J. Hagemejer, ”Services Trade Data,” in Dimaranan, B.V, and R.A. McDougall (editors), 2005, Global Trade, Assistance, and Production: The GTAP 6 Data Base, Center for Global Trade Analysis, Purdue University.

# Annex I. Reference for the variables and files used in the Export of Value Added Database

The purpose of this annex is to serve as a reference of all the variables and filse used in the value added.

**List of variables**

**Sector\_GMatrix:**

This matrix contains the total domestic value added based on linkages. Depending whether rows or columns are considered its sum corresponds to forward (row) or backward (colunn) linkages. Thus reading a row for a given sector (sector presented on the y-axis) provides information about how much this sector went into each sector (on the x-axis) as inputs. The matrix corresponds to matrix G as described in the explanatory note and in Francois, Manchin, and Tomberger (2012).

**DomVAshare:**

This vector denotes the domestic share of value added of gross value of output per sector. The diagonal matrix as described in the explanatory note and Francois/Manchin/Tomberger (2012), contains those shares on its diagonal.

**GXshare:**

Denotes the share of each sector in total exports per country based on the gross value of exports. See also Table 3 of Francois, Manchin, and Tomberger (2012).

**DXshare:**

Denotes the share of each sector’s exports of total exports per country based on direct value added, ignoring linkages. See also Table 4 of Francois, Manchin, and Tomberger (2012).

**VXsharefwd:**

Denotes the total value added in exports based on forward linkages per sector and country. This vector corresponds to the row-sums of matrix H in the explanatory notes. See also Table 5 of Francois, Manchin, and Tomberger (2012).

**VXsharebwd:**

Denotes the total value added in exports based on backward linkages. It is obtained by taking the column-sums of matrix H. See also Table 6 of Francois, Manchin, and Tomberger (2012).

**RCAstandard:**

This variable is a standard relative comparative advantage index for each of the sectors. See also Table 10 of Francois, Manchin, and Tomberger (2012).

**RelIntfwd:**

This is the relative intensity index for forward linkages. It is calculated similar to the RCA index, but based on value added forward linkages, given the relative intensity of each sector. See also Tables 13, 15, 17 and 19 of Francois, Manchin, and Tomberger (2012).

**RelIntbwd:**

This is the relative intensity index for backward linkages. It is calculated similar to the RCA index, but based on value added backward linkages,

**List of Files**

All files used for the database are available in standard MS Excel format (\*.xlsx), but also as comma-separated value files (\*.csv) and as STATA files (\*.dta).

**services\_VAtrade\_1992\_2011 (.xlsx, .dta, .csv):**

This file contains all the variables for all the sectors and regions available for the years 1992, 1995, 2001, 2004 and 2007.

**services\_VAtrade\_small\_1992\_2011 (.xlsx, .dta, .csv):**

This file contains a reduced version of the presented database. It offers all the variables for all countries and the whole temporal coverage, except the total domestic value added based on linkages (“G-Matrix”). The sector coverage is reduced to the service sectors egw, cns, t\_t, osp and osg.

**services\_VAtrade\_inc\_groups\_1992\_2011 (.xlsx, .dta, .csv):**

This file contains all the variables for income groups instead of single countries for all sectors and the years 1992, 1995, 2001, 2004 and 2007.

**services\_VAtrade\_inc\_groups\_small\_1992\_2011 (.xlsx, .dta, .csv):**

This file includes all the variables for income groups for the whole temporal coverage, except the total domestic value added based on linkages (“G-Matrix”). Furthermore the sector coverage is reduced to the service sectors egw, cns, t\_t, osp and osg.

**services\_VAtrade\_regions\_2004\_20011 (.xlsx, .dta, .csv):**

This file contains all the variables for geographic regions. Also the temporal coverage was reduced to the years 2004, 2007 and 2011.

**services\_VAtrade\_regions\_small\_2004\_2011 (.xlsx, .dta, .csv):**

This file contains all the variables except the total domestic value added based on linkages (“G-Matrix”) for geographic regions. Also sector coverage was reduced to the service sectors egw, cns, t\_t, osp and osg.

**References**

Francois, J., Manchin, M. and P. Tomberger (2012), ”Services Linkages and the Value Added Content of Trade,” working paper, Johannes Kepler University Linz.

# Annex II. Concordance between sectors in the data and ISIC rev. 3.

|  |  |  |  |
| --- | --- | --- | --- |
| **isicrev3** | **Isic Rev. 3. description** | **GTAP sectors** | **GTAP description** |
| 111 | Growing of cereals and other crops n.e.c. | primaryagr | Paddy rice |
| 1531 | Manufacture of grain mill products | primaryagr | Paddy rice |
| 111 | Growing of cereals and other crops n.e.c. | primaryagr | Wheat |
| 111 | Growing of cereals and other crops n.e.c. | primaryagr | Cereal grains nec |
| 111 | Growing of cereals and other crops n.e.c. | primaryagr | Vegetables, fruit, nuts |
| 112 | Growing of vegetables, horticultural specialties and nursery products | primaryagr | Vegetables, fruit, nuts |
| 113 | Growing of fruit, nuts, beverage and spice crops | primaryagr | Vegetables, fruit, nuts |
| 1513 | Processing and preserving of fruit and vegetables | primaryagr | Vegetables, fruit, nuts |
| 111 | Growing of cereals and other crops n.e.c. | primaryagr | Oil seeds |
| 111 | Growing of cereals and other crops n.e.c. | primaryagr | Sugar cane, sugar beet |
| 111 | Growing of cereals and other crops n.e.c. | primaryagr | Plant-based fibers |
| 112 | Growing of vegetables, horticultural specialties and nursery products | primaryagr | Crops nec |
| 113 | Growing of fruit, nuts, beverage and spice crops | primaryagr | Crops nec |
| 111 | Growing of cereals and other crops n.e.c. | primaryagr | Crops nec |
| 1533 | Manufacture of prepared animal feeds | primaryagr | Crops nec |
| 121 | Farming of cattle, sheep, goats, horses, asses, mules and hinnies; dairy farming | primaryagr | Bovine cattle, sheep and goats, horses |
| 122 | Other animal farming; production of animal products n.e.c. | primaryagr | Animal products nec |
| 1511 | Production, processing and preserving of meat and meat products | primaryagr | Animal products nec |
| 121 | Farming of cattle, sheep, goats, horses, asses, mules and hinnies; dairy farming | primaryagr | Raw Milk |
| 122 | Other animal farming; production of animal products n.e.c. | primaryagr | Wool, silk-worm cocoons |
| 1511 | Production, processing and preserving of meat and meat products | primaryagr | Wool, silk-worm cocoons |
| 121 | Farming of cattle, sheep, goats, horses, asses, mules and hinnies; dairy farming | primaryagr | Wool, silk-worm cocoons |
| 200 | Forestry, logging and related service activities | otherprim | Forestry |
| 500 | Fishing, operation of fish hatcheries and fish farms; service activities incidental to fishing | otherprim | Fishing |
| 1020 | Mining and agglomeration of lignite | energy | Coal |
| 1030 | Extraction and agglomeration of peat | energy | Coal |
| 1010 | Mining and agglomeration of hard coal | energy | Coal |
| 1110 | Extraction of crude petroleum and natural gas | energy | Petroleum Production |
| 1110 | Extraction of crude petroleum and natural gas | energy | Natural Gas Production |
| 1320 | Mining of non-ferrous metal ores, except uranium and thorium ores | otherprim | Minerals nec |
| 1421 | Mining of chemical and fertilizer minerals | otherprim | Minerals nec |
| 1200 | Mining of uranium and thorium ores | otherprim | Minerals nec |
| 2411 | Manufacture of basic chemicals, except fertilizers and nitrogen compounds | otherprim | Minerals nec |
| 1429 | Other mining and quarrying n.e.c. | otherprim | Minerals nec |
| 1310 | Mining of iron ores | otherprim | Minerals nec |
| 1110 | Extraction of crude petroleum and natural gas | otherprim | Minerals nec |
| 1422 | Extraction of salt | otherprim | Minerals nec |
| 1410 | Quarrying of stone, sand and clay | otherprim | Minerals nec |
| 1511 | Production, processing and preserving of meat and meat products | procfoods | Bovine meat products |
| 1711 | Preparation and spinning of textile fibres; weaving of textiles | procfoods | Meat products nec |
| 1514 | Manufacture of vegetable and animal oils and fats | procfoods | Meat products nec |
| 1511 | Production, processing and preserving of meat and meat products | procfoods | Meat products nec |
| 1532 | Manufacture of starches and starch products | procfoods | Vegetable oils and fats |
| 1514 | Manufacture of vegetable and animal oils and fats | procfoods | Vegetable oils and fats |
| 1520 | Manufacture of dairy products | procfoods | Dairy products |
| 1531 | Manufacture of grain mill products | procfoods | Processed rice |
| 1542 | Manufacture of sugar | procfoods | Sugar |
| 1533 | Manufacture of prepared animal feeds | procfoods | Food products nec |
| 1543 | Manufacture of cocoa, chocolate and sugar confectionery | procfoods | Food products nec |
| 1541 | Manufacture of bakery products | procfoods | Food products nec |
| 1531 | Manufacture of grain mill products | procfoods | Food products nec |
| 1513 | Processing and preserving of fruit and vegetables | procfoods | Food products nec |
| 140 | Agricultural and animal husbandry service activities, except veterinary activities | procfoods | Food products nec |
| 1532 | Manufacture of starches and starch products | procfoods | Food products nec |
| 1544 | Manufacture of macaroni, noodles, couscous and similar farinaceous products | procfoods | Food products nec |
| 1549 | Manufacture of other food products n.e.c. | procfoods | Food products nec |
| 1512 | Processing and preserving of fish and fish products | procfoods | Food products nec |
| 1552 | Manufacture of wines | bevtobacco | Beverages and tobacco products |
| 4100 | Collection, purification and distribution of water | bevtobacco | Beverages and tobacco products |
| 1600 | Manufacture of tobacco products | bevtobacco | Beverages and tobacco products |
| 1551 | Distilling, rectifying and blending of spirits; ethyl alcohol production from fermented materials | bevtobacco | Beverages and tobacco products |
| 1553 | Manufacture of malt liquors and malt | bevtobacco | Beverages and tobacco products |
| 1554 | Manufacture of soft drinks; production of mineral waters | bevtobacco | Beverages and tobacco products |
| 1721 | Manufacture of made-up textile articles, except apparel | textiles | Textiles |
| 1730 | Manufacture of knitted and crocheted fabrics and articles | textiles | Textiles |
| 1729 | Manufacture of other textiles n.e.c. | textiles | Textiles |
| 1723 | Manufacture of cordage, rope, twine and netting | textiles | Textiles |
| 2519 | Manufacture of other rubber products | textiles | Textiles |
| 1711 | Preparation and spinning of textile fibres; weaving of textiles | textiles | Textiles |
| 2430 | Manufacture of man-made fibres | textiles | Textiles |
| 1722 | Manufacture of carpets and rugs | textiles | Textiles |
| 1820 | Dressing and dyeing of fur; manufacture of articles of fur | clothing | Wearing apparel |
| 1810 | Manufacture of wearing apparel, except fur apparel | clothing | Wearing apparel |
| 1920 | Manufacture of footwear | leather | Leather products |
| 1912 | Manufacture of luggage, handbags and the like, saddlery and harness | leather | Leather products |
| 1911 | Tanning and dressing of leather | leather | Leather products |
| 2022 | Manufacture of builders' carpentry and joinery | lumber | Wood products |
| 2021 | Manufacture of veneer sheets; manufacture of plywood, laminboard, particle board and other panels and boards | lumber | Wood products |
| 2029 | Manufacture of other products of wood; manufacture of articles of cork, straw and plaiting materials | lumber | Wood products |
| 2023 | Manufacture of wooden containers | lumber | Wood products |
| 3610 | Manufacture of furniture | lumber | Wood products |
| 2010 | Sawmilling and planing of wood | lumber | Wood products |
| 2219 | Other publishing | paperpub | Paper products, publishing |
| 7421 | Architectural and engineering activities and related technical consultancy | paperpub | Paper products, publishing |
| 2211 | Publishing of books, brochures, musical books and other publications | paperpub | Paper products, publishing |
| 2101 | Manufacture of pulp, paper and paperboard | paperpub | Paper products, publishing |
| 2222 | Service activities related to printing | paperpub | Paper products, publishing |
| 2212 | Publishing of newspapers, journals and periodicals | paperpub | Paper products, publishing |
| 2102 | Manufacture of corrugated paper and paperboard and of containers of paper and paperboard | paperpub | Paper products, publishing |
| 2221 | Printing | paperpub | Paper products, publishing |
| 2109 | Manufacture of other articles of paper and paperboard | paperpub | Paper products, publishing |
| 2310 | Manufacture of coke oven products | energy | Petroleum, coal products |
| 2320 | Manufacture of refined petroleum products | energy | Petroleum, coal products |
| 2520 | Manufacture of plastics products | chemicals | Chemical, rubber, plastic products |
| 2519 | Manufacture of other rubber products | chemicals | Chemical, rubber, plastic products |
| 2413 | Manufacture of plastics in primary forms and of synthetic rubber | chemicals | Chemical, rubber, plastic products |
| 2421 | Manufacture of pesticides and other agro-chemical products | chemicals | Chemical, rubber, plastic products |
| 2424 | Manufacture of soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations | chemicals | Chemical, rubber, plastic products |
| 2422 | Manufacture of paints, varnishes and similar coatings, printing ink and mastics | chemicals | Chemical, rubber, plastic products |
| 2511 | Manufacture of rubber tyres and tubes; retreading and rebuilding of rubber tyres | chemicals | Chemical, rubber, plastic products |
| 4010 | Production, collection and distribution of electricity | chemicals | Chemical, rubber, plastic products |
| 2429 | Manufacture of other chemical products n.e.c. | chemicals | Chemical, rubber, plastic products |
| 111 | Growing of cereals and other crops n.e.c. | chemicals | Chemical, rubber, plastic products |
| 2411 | Manufacture of basic chemicals, except fertilizers and nitrogen compounds | chemicals | Chemical, rubber, plastic products |
| 2330 | Processing of nuclear fuel | chemicals | Chemical, rubber, plastic products |
| 2423 | Manufacture of pharmaceuticals, medicinal chemicals and botanical products | chemicals | Chemical, rubber, plastic products |
| 3210 | Manufacture of electronic valves and tubes and other electronic components | chemicals | Chemical, rubber, plastic products |
| 2412 | Manufacture of fertilizers and nitrogen compounds | chemicals | Chemical, rubber, plastic products |
| 2693 | Manufacture of structural non-refractory clay and ceramic products | nonmetmin | Mineral products nec |
| 2691 | Manufacture of non-structural non-refractory ceramic ware | nonmetmin | Mineral products nec |
| 2694 | Manufacture of cement, lime and plaster | nonmetmin | Mineral products nec |
| 2692 | Manufacture of refractory ceramic products | nonmetmin | Mineral products nec |
| 2699 | Manufacture of other non-metallic mineral products n.e.c. | nonmetmin | Mineral products nec |
| 2695 | Manufacture of articles of concrete, cement and plaster | nonmetmin | Mineral products nec |
| 2696 | Cutting, shaping and finishing of stone | nonmetmin | Mineral products nec |
| 1711 | Preparation and spinning of textile fibres; weaving of textiles | nonmetmin | Mineral products nec |
| 2610 | Manufacture of glass and glass products | nonmetmin | Mineral products nec |
| 2710 | Manufacture of basic iron and steel | metals | Ferrous metals |
| 2720 | Manufacture of basic precious and non-ferrous metals | metals | Metals nec |
| 1429 | Other mining and quarrying n.e.c. | fabmetals | Metal products |
| 2812 | Manufacture of tanks, reservoirs and containers of metal | fabmetals | Metal products |
| 2811 | Manufacture of structural metal products | fabmetals | Metal products |
| 2813 | Manufacture of steam generators, except central heating hot water boilers | fabmetals | Metal products |
| 2899 | Manufacture of other fabricated metal products n.e.c. | fabmetals | Metal products |
| 2893 | Manufacture of cutlery, hand tools and general hardware | fabmetals | Metal products |
| 3430 | Manufacture of parts and accessories for motor vehicles and their engines | transpequip | Motor vehicles and parts |
| 3410 | Manufacture of motor vehicles | transpequip | Motor vehicles and parts |
| 3420 | Manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers | transpequip | Motor vehicles and parts |
| 3520 | Manufacture of railway and tramway locomotives and rolling stock | transpequip | Transport equipment nec |
| 3599 | Manufacture of other transport equipment n.e.c. | transpequip | Transport equipment nec |
| 3591 | Manufacture of motorcycles | transpequip | Transport equipment nec |
| 3592 | Manufacture of bicycles and invalid carriages | transpequip | Transport equipment nec |
| 3530 | Manufacture of aircraft and spacecraft | transpequip | Transport equipment nec |
| 3512 | Building and repairing of pleasure and sporting boats | transpequip | Transport equipment nec |
| 3511 | Building and repairing of ships | transpequip | Transport equipment nec |
| 3230 | Manufacture of television and radio receivers, sound or video recording or reproducing apparatus, and associated goods | machinery | Electronic equipment |
| 3220 | Manufacture of television and radio transmitters and apparatus for line telephony and line telegraphy | machinery | Electronic equipment |
| 3000 | Manufacture of office, accounting and computing machinery | machinery | Electronic equipment |
| 3210 | Manufacture of electronic valves and tubes and other electronic components | machinery | Electronic equipment |
| 3150 | Manufacture of electric lamps and lighting equipment | machinery | Machinery and equipment nec |
| 3140 | Manufacture of accumulators, primary cells and primary batteries | machinery | Machinery and equipment nec |
| 2927 | Manufacture of weapons and ammunition | machinery | Machinery and equipment nec |
| 2915 | Manufacture of lifting and handling equipment | machinery | Machinery and equipment nec |
| 3110 | Manufacture of electric motors, generators and transformers | machinery | Machinery and equipment nec |
| 2919 | Manufacture of other general purpose machinery | machinery | Machinery and equipment nec |
| 3120 | Manufacture of electricity distribution and control apparatus | machinery | Machinery and equipment nec |
| 3320 | Manufacture of optical instruments and photographic equipment | machinery | Machinery and equipment nec |
| 2924 | Manufacture of machinery for mining, quarrying and construction | machinery | Machinery and equipment nec |
| 3190 | Manufacture of other electrical equipment n.e.c. | machinery | Machinery and equipment nec |
| 3313 | Manufacture of industrial process control equipment | machinery | Machinery and equipment nec |
| 3330 | Manufacture of watches and clocks | machinery | Machinery and equipment nec |
| 2913 | Manufacture of bearings, gears, gearing and driving elements | machinery | Machinery and equipment nec |
| 3130 | Manufacture of insulated wire and cable | machinery | Machinery and equipment nec |
| 3210 | Manufacture of electronic valves and tubes and other electronic components | machinery | Machinery and equipment nec |
| 2921 | Manufacture of agricultural and forestry machinery | machinery | Machinery and equipment nec |
| 3311 | Manufacture of medical and surgical equipment and orthopaedic appliances | machinery | Machinery and equipment nec |
| 2922 | Manufacture of machine-tools | machinery | Machinery and equipment nec |
| 2926 | Manufacture of machinery for textile, apparel and leather production | machinery | Machinery and equipment nec |
| 2912 | Manufacture of pumps, compressors, taps and valves | machinery | Machinery and equipment nec |
| 2925 | Manufacture of machinery for food, beverage and tobacco processing | machinery | Machinery and equipment nec |
| 2923 | Manufacture of machinery for metallurgy | machinery | Machinery and equipment nec |
| 2929 | Manufacture of other special purpose machinery | machinery | Machinery and equipment nec |
| 2914 | Manufacture of ovens, furnaces and furnace burners | machinery | Machinery and equipment nec |
| 2213 | Publishing of recorded media | machinery | Machinery and equipment nec |
| 3312 | Manufacture of instruments and appliances for measuring, checking, testing, navigating and other purposes, except industrial process control equipment | machinery | Machinery and equipment nec |
| 2911 | Manufacture of engines and turbines, except aircraft, vehicle and cycle engines | machinery | Machinery and equipment nec |
| 2930 | Manufacture of domestic appliances n.e.c. | machinery | Machinery and equipment nec |
| 9214 | Dramatic arts, music and other arts activities | machinery | Machinery and equipment nec |
| 1721 | Manufacture of made-up textile articles, except apparel | othermanuf | Manufactures nec |
| 3692 | Manufacture of musical instruments | othermanuf | Manufactures nec |
| 3691 | Manufacture of jewellery and related articles | othermanuf | Manufactures nec |
| 9302 | Hairdressing and other beauty treatment | othermanuf | Manufactures nec |
| 3610 | Manufacture of furniture | othermanuf | Manufactures nec |
| 9214 | Dramatic arts, music and other arts activities | othermanuf | Manufactures nec |
| 7494 | Photographic activities | othermanuf | Manufactures nec |
| 3699 | Other manufacturing n.e.c. | othermanuf | Manufactures nec |
| 9211 | Motion picture and video production and distribution | othermanuf | Manufactures nec |
| 3693 | Manufacture of sports goods | othermanuf | Manufactures nec |
| 3694 | Manufacture of games and toys | othermanuf | Manufactures nec |
| 4010 | Production, collection and distribution of electricity | energy | Electricity |
| 4020 | Manufacture of gas; distribution of gaseous fuels through mains | energy | Gas manufacture, distribution |
| n.a. |  | water |  |
| n.a. |  | construction |  |
| n.a. |  | distribution |  |
| n.a. |  | transport |  |
| n.a. |  | transport |  |
| n.a. |  | transport |  |
| n.a. |  | communcation |  |
| n.a. |  | finance |  |
| n.a. |  | insurance |  |
| n.a. |  | obsict |  |
| n.a. |  | oconsumer |  |
| n.a. |  | oservices |  |
| n.a. |  | oservices |  |

# Annex III. List of countries with corresponding country group for each year

|  |  |  |  |
| --- | --- | --- | --- |
| **iso3** | **Country names** | **Income group** | **year** |
| aus | Australia | higinc | 2011 |
| nzl | New Zealand | higinc | 2011 |
| xoc | Rest of Oceania | - | 2011 |
| chn | China | lominc | 2011 |
| hkg | Hong Kong | higinc | 2011 |
| jpn | Japan | higinc | 2011 |
| kor | Korea | higinc | 2011 |
| mng | Mongolia | lominc | 2011 |
| twn | Taiwan | higinc | 2011 |
| xea | Rest of East Asia | lominc | 2011 |
| brn | Brunei Darassalam | higinc | 2011 |
| khm | Cambodia | lowinc | 2011 |
| idn | Indonesia | lominc | 2011 |
| lao | Lao People's Democratic Republ | lominc | 2011 |
| mys | Malaysia | upminc | 2011 |
| phl | Philippines | lominc | 2011 |
| sgp | Singapore | higinc | 2011 |
| tha | Thailand | lominc | 2011 |
| vnm | Viet Nam | lowinc | 2011 |
| xse | Rest of Southeast Asia | - | 2011 |
| bgd | Bangladesh | lowinc | 2011 |
| ind | India | lominc | 2011 |
| npl | Nepal | lowinc | 2011 |
| pak | Pakistan | lowinc | 2011 |
| lka | Sri Lanka | lominc | 2011 |
| xsa | Rest of South Asia | - | 2011 |
| can | Canada | higinc | 2011 |
| usa | United States of America | higinc | 2011 |
| mex | Mexico | upminc | 2011 |
| xna | Rest of North America | higinc | 2011 |
| arg | Argentina | upminc | 2011 |
| bol | Bolivia | lominc | 2011 |
| bra | Brazil | upminc | 2011 |
| chl | Chile | upminc | 2011 |
| col | Colombia | upminc | 2011 |
| ecu | Ecuador | upminc | 2011 |
| pry | Paraguay | lominc | 2011 |
| per | Peru | upminc | 2011 |
| ury | Uruguay | upminc | 2011 |
| ven | Venezuela | upminc | 2011 |
| xsm | Rest of South America | - | 2011 |
| cri | Costa Rica | upminc | 2011 |
| gtm | Guatemala | lominc | 2011 |
| hnd | Honduras | lominc | 2011 |
| nic | Nicaragua | lominc | 2011 |
| pan | Panama | upminc | 2011 |
| slv | El Salvador | lominc | 2011 |
| xca | Rest of Central America | lominc | 2011 |
| dom | Dominican Republic | upminc | 2011 |
| jam | Jamaica | upminc | 2011 |
| pri | Puerto Rico | higinc | 2011 |
| tto | Trinidad and Tobago | higinc | 2011 |
| xcb | Caribbean | - | 2011 |
| aut | Austria | higinc | 2011 |
| bel | Belgium | higinc | 2011 |
| cyp | Cyprus | higinc | 2011 |
| cze | Czech Republic | higinc | 2011 |
| dnk | Denmark | higinc | 2011 |
| est | Estonia | higinc | 2011 |
| fin | Finland | higinc | 2011 |
| fra | France | higinc | 2011 |
| deu | Germany | higinc | 2011 |
| grc | Greece | higinc | 2011 |
| hun | Hungary | higinc | 2011 |
| irl | Ireland | higinc | 2011 |
| ita | Italy | higinc | 2011 |
| lva | Latvia | upminc | 2011 |
| ltu | Lithuania | upminc | 2011 |
| lux | Luxembourg | higinc | 2011 |
| mlt | Malta | higinc | 2011 |
| nld | Netherlands | higinc | 2011 |
| pol | Poland | higinc | 2011 |
| prt | Portugal | higinc | 2011 |
| svk | Slovakia | higinc | 2011 |
| svn | Slovenia | higinc | 2011 |
| esp | Spain | higinc | 2011 |
| swe | Sweden | higinc | 2011 |
| gbr | United Kingdom | higinc | 2011 |
| che | Switzerland | higinc | 2011 |
| nor | Norway | higinc | 2011 |
| xef | Rest of EFTA | higinc | 2011 |
| alb | Albania | lowinc | 2011 |
| bgr | Bulgaria | upminc | 2011 |
| blr | Belarus | upminc | 2011 |
| hrv | Croatia | upminc | 2011 |
| rou | Romania | upminc | 2011 |
| rus | Russian Federation | upminc | 2011 |
| ukr | Ukraine | lominc | 2011 |
| xee | Rest of Eastern Europe | lominc | 2011 |
| xer | Rest of Europe | - | 2011 |
| kaz | Kazakhstan | upminc | 2011 |
| kgz | Kyrgyztan | lowinc | 2011 |
| xsu | Rest of Former Soviet Union | - | 2011 |
| arm | Armenia | lominc | 2011 |
| aze | Azerbaijan | upminc | 2011 |
| geo | Georgia | lominc | 2011 |
| bhr | Bahrain | higinc | 2011 |
| irn | Iran Islamic Republic of | lominc | 2011 |
| isr | Israel | higinc | 2011 |
| jor | Jordhan | upminc | 2011 |
| kwt | Kuwait | higinc | 2011 |
| omn | Oman | higinc | 2011 |
| qat | Qatar | higinc | 2011 |
| sau | Saudi Arabia | higinc | 2011 |
| tur | Turkey | upminc | 2011 |
| are | United Arab Emirates | higinc | 2011 |
| xws | Rest of Western Asia | - | 2011 |
| egy | Egypt | lominc | 2011 |
| mar | Morocco | lominc | 2011 |
| tun | Tunisia | lominc | 2011 |
| xnf | Rest of North Africa | lominc | 2011 |
| ben | Benin | lowinc | 2011 |
| bfa | Burkina Faso | lowinc | 2011 |
| cmr | Cameroon | lominc | 2011 |
| civ | Cote d'Ivoire | lowinc | 2011 |
| gha | Ghana | lowinc | 2011 |
| gin | Guinea | lowinc | 2011 |
| nga | Nigeria | lowinc | 2011 |
| sen | Senegal | lowinc | 2011 |
| tgo | Togo | lowinc | 2011 |
| xwf | Rest of Western Africa | lowinc | 2011 |
| xcf | Central Africa | - | 2011 |
| xac | South Central Africa | - | 2011 |
| eth | Ethiopia | lowinc | 2011 |
| ken | Kenya | lowinc | 2011 |
| mdg | Madagascar | lowinc | 2011 |
| mwi | Malawi | lowinc | 2011 |
| mus | Mauritius | lowinc | 2011 |
| moz | Mozambique | lowinc | 2011 |
| rwa | Rwanda | lowinc | 2011 |
| tza | Tanzania | lowinc | 2011 |
| uga | Uganda | lowinc | 2011 |
| zmb | Zambia | lowinc | 2011 |
| zwe | Zimbabwe | lowinc | 2011 |
| xec | Rest of Eastern Africa | - | 2011 |
| bwa | Botswana | upminc | 2011 |
| nam | Namibia | lowinc | 2011 |
| zaf | South Africa | upminc | 2011 |
| xsc | Rest of South African Customs | lominc | 2011 |
| xtw | Rest of the World | - | 2011 |
| aus | Australia | high income | 2007 |
| nzl | New Zealand | high income | 2007 |
| xoc | Rest of Oceania | - | 2007 |
| chn | China | lower middle income | 2007 |
| hkg | Hong Kong | high income | 2007 |
| jpn | Japan | high income | 2007 |
| kor | Korea | high income | 2007 |
| mng | Mongolia | lower middle income | 2007 |
| twn | Taiwan | high income | 2007 |
| xea | Rest of East Asia | lower middle income | 2007 |
| khm | Cambodia | low income | 2007 |
| idn | Indonesia | lower middle income | 2007 |
| lao | Lao People's Democratic Republ | lower middle income | 2007 |
| mys | Malaysia | upper middle income | 2007 |
| phl | Philippines | lower middle income | 2007 |
| sgp | Singapore | high income | 2007 |
| tha | Thailand | lower middle income | 2007 |
| vnm | Viet Nam | low income | 2007 |
| xse | Rest of Southeast Asia | - | 2007 |
| bgd | Bangladesh | low income | 2007 |
| ind | India | lower middle income | 2007 |
| npl | Nepal | low income | 2007 |
| pak | Pakistan | low income | 2007 |
| lka | Sri Lanka | lower middle income | 2007 |
| xsa | Rest of South Asia | - | 2007 |
| can | Canada | high income | 2007 |
| usa | United States of America | high income | 2007 |
| mex | Mexico | upper middle income | 2007 |
| xna | Rest of North America | high income | 2007 |
| arg | Argentina | upper middle income | 2007 |
| bol | Bolivia | lower middle income | 2007 |
| bra | Brazil | upper middle income | 2007 |
| chl | Chile | upper middle income | 2007 |
| col | Colombia | upper middle income | 2007 |
| ecu | Ecuador | upper middle income | 2007 |
| pry | Paraguay | lower middle income | 2007 |
| per | Peru | upper middle income | 2007 |
| ury | Uruguay | upper middle income | 2007 |
| ven | Venezuela | upper middle income | 2007 |
| xsm | Rest of South America | - | 2007 |
| cri | Costa Rica | upper middle income | 2007 |
| gtm | Guatemala | lower middle income | 2007 |
| hnd | Honduras | lower middle income | 2007 |
| nic | Nicaragua | lower middle income | 2007 |
| pan | Panama | upper middle income | 2007 |
| slv | El Salvador | lower middle income | 2007 |
| xca | Rest of Central America | lower middle income | 2007 |
| xcb | Caribbean | - | 2007 |
| aut | Austria | high income | 2007 |
| bel | Belgium | high income | 2007 |
| cyp | Cyprus | high income | 2007 |
| cze | Czech Republic | high income | 2007 |
| dnk | Denmark | high income | 2007 |
| est | Estonia | high income | 2007 |
| fin | Finland | high income | 2007 |
| fra | France | high income | 2007 |
| deu | Germany | high income | 2007 |
| grc | Greece | high income | 2007 |
| hun | Hungary | high income | 2007 |
| irl | Ireland | high income | 2007 |
| ita | Italy | high income | 2007 |
| lva | Latvia | upper middle income | 2007 |
| ltu | Lithuania | upper middle income | 2007 |
| lux | Luxembourg | high income | 2007 |
| mlt | Malta | high income | 2007 |
| nld | Netherlands | high income | 2007 |
| pol | Poland | high income | 2007 |
| prt | Portugal | high income | 2007 |
| svk | Slovakia | high income | 2007 |
| svn | Slovenia | high income | 2007 |
| esp | Spain | high income | 2007 |
| swe | Sweden | high income | 2007 |
| gbr | United Kingdom | high income | 2007 |
| che | Switzerland | high income | 2007 |
| nor | Norway | high income | 2007 |
| xef | Rest of EFTA | high income | 2007 |
| alb | Albania | low income | 2007 |
| bgr | Bulgaria | upper middle income | 2007 |
| blr | Belarus | upper middle income | 2007 |
| hrv | Croatia | upper middle income | 2007 |
| rou | Romania | upper middle income | 2007 |
| rus | Russian Federation | upper middle income | 2007 |
| ukr | Ukraine | lower middle income | 2007 |
| xee | Rest of Eastern Europe | lower middle income | 2007 |
| xer | Rest of Europe | - | 2007 |
| kaz | Kazakhstan | upper middle income | 2007 |
| kgz | Kyrgyztan | low income | 2007 |
| xsu | Rest of Former Soviet Union | - | 2007 |
| arm | Armenia | lower middle income | 2007 |
| aze | Azerbaijan | upper middle income | 2007 |
| geo | Georgia | lower middle income | 2007 |
| bhr | Bahrain | high income | 2007 |
| irn | Iran Islamic Republic of | lower middle income | 2007 |
| isr | Israel | high income | 2007 |
| kwt | Kuwait | high income | 2007 |
| omn | Oman | high income | 2007 |
| qat | Qatar | high income | 2007 |
| sau | Saudi Arabia | high income | 2007 |
| tur | Turkey | upper middle income | 2007 |
| are | United Arab Emirates | high income | 2007 |
| xws | Rest of Western Asia | - | 2007 |
| egy | Egypt | lower middle income | 2007 |
| mar | Morocco | lower middle income | 2007 |
| tun | Tunisia | lower middle income | 2007 |
| xnf | Rest of North Africa | lower middle income | 2007 |
| cmr | Cameroon | lower middle income | 2007 |
| civ | Cote d'Ivoire | low income | 2007 |
| gha | Ghana | low income | 2007 |
| nga | Nigeria | low income | 2007 |
| sen | Senegal | low income | 2007 |
| xwf | Rest of Western Africa | low income | 2007 |
| xcf | Central Africa | - | 2007 |
| xac | South Central Africa | - | 2007 |
| eth | Ethiopia | low income | 2007 |
| ken | Kenya | low income | 2007 |
| mdg | Madagascar | low income | 2007 |
| mwi | Malawi | low income | 2007 |
| mus | Mauritius | low income | 2007 |
| moz | Mozambique | low income | 2007 |
| tza | Tanzania | low income | 2007 |
| uga | Uganda | low income | 2007 |
| zmb | Zambia | low income | 2007 |
| zwe | Zimbabwe | low income | 2007 |
| xec | Rest of Eastern Africa | - | 2007 |
| bwa | Botswana | upper middle income | 2007 |
| nam | Namibia | low income | 2007 |
| zaf | South Africa | upper middle income | 2007 |
| xsc | Rest of South African Customs | lower middle income | 2007 |
| xtw | Rest of the World | - | 2007 |
| aus | Australia | high income | 2004 |
| nzl | New Zealand | high income | 2004 |
| xoc | Rest of Oceania | - | 2004 |
| chn | China | lower middle income | 2004 |
| hkg | Hong Kong | high income | 2004 |
| jpn | Japan | high income | 2004 |
| kor | Korea | high income | 2004 |
| mng | Mongolia | low income | 2004 |
| twn | Taiwan | high income | 2004 |
| xea | Rest of East Asia | lower middle income | 2004 |
| khm | Cambodia | lower middle income | 2004 |
| idn | Indonesia | lower middle income | 2004 |
| lao | Lao People's Democrati | lower middle income | 2004 |
| mys | Malaysia | upper middle income | 2004 |
| phl | Philippines | lower middle income | 2004 |
| sgp | Singapore | high income | 2004 |
| tha | Thailand | lower middle income | 2004 |
| vnm | Viet Nam | low income | 2004 |
| xse | Rest of Southeast Asia | - | 2004 |
| bgd | Bangladesh | low income | 2004 |
| ind | India | low income | 2004 |
| npl | Nepal | low income | 2004 |
| pak | Pakistan | low income | 2004 |
| lka | Sri Lanka | lower middle income | 2004 |
| xsa | Rest of South Asia | - | 2004 |
| can | Canada | high income | 2004 |
| usa | United States of Ameri | high income | 2004 |
| mex | Mexico | upper middle income | 2004 |
| xna | Rest of North America | high income | 2004 |
| arg | Argentina | upper middle income | 2004 |
| bol | Bolivia | lower middle income | 2004 |
| bra | Brazil | upper middle income | 2004 |
| chl | Chile | upper middle income | 2004 |
| col | Colombia | upper middle income | 2004 |
| ecu | Ecuador | lower middle income | 2004 |
| pry | Paraguay | lower middle income | 2004 |
| per | Peru | lower middle income | 2004 |
| ury | Uruguay | upper middle income | 2004 |
| ven | Venezuela | upper middle income | 2004 |
| xsm | Rest of South America | - | 2004 |
| cri | Costa Rica | upper middle income | 2004 |
| gtm | Guatemala | lower middle income | 2004 |
| hnd | Honduras | lower middle income | 2004 |
| nic | Nicaragua | lower middle income | 2004 |
| pan | Panama | upper middle income | 2004 |
| slv | El Salvador | lower middle income | 2004 |
| xca | Rest of Central Americ | lower middle income | 2004 |
| xcb | Caribbean | - | 2004 |
| aut | Austria | high income | 2004 |
| bel | Belgium | high income | 2004 |
| cyp | Cyprus | high income | 2004 |
| cze | Czech Republic | high income | 2004 |
| dnk | Denmark | high income | 2004 |
| est | Estonia | high income | 2004 |
| fin | Finland | high income | 2004 |
| fra | France | high income | 2004 |
| deu | Germany | high income | 2004 |
| grc | Greece | high income | 2004 |
| hun | Hungary | high income | 2004 |
| irl | Ireland | high income | 2004 |
| ita | Italy | high income | 2004 |
| lva | Latvia | upper middle income | 2004 |
| ltu | Lithuania | upper middle income | 2004 |
| lux | Luxembourg | high income | 2004 |
| mlt | Malta | high income | 2004 |
| nld | Netherlands | high income | 2004 |
| pol | Poland | high income | 2004 |
| prt | Portugal | high income | 2004 |
| svk | Slovakia | high income | 2004 |
| svn | Slovenia | high income | 2004 |
| esp | Spain | high income | 2004 |
| swe | Sweden | high income | 2004 |
| gbr | United Kingdom | high income | 2004 |
| che | Switzerland | high income | 2004 |
| nor | Norway | high income | 2004 |
| xef | Rest of EFTA | high income | 2004 |
| alb | Albania | upper middle income | 2004 |
| bgr | Bulgaria | upper middle income | 2004 |
| blr | Belarus | low income | 2004 |
| hrv | Croatia | upper middle income | 2004 |
| rou | Romania | upper middle income | 2004 |
| rus | Russian Federation | upper middle income | 2004 |
| ukr | Ukraine | lower middle income | 2004 |
| xee | Rest of Eastern Europe | lower middle income | 2004 |
| xer | Rest of Europe | - | 2004 |
| kaz | Kazakhstan | upper middle income | 2004 |
| kgz | Kyrgyztan | low income | 2004 |
| xsu | Rest of Former Soviet | - | 2004 |
| arm | Armenia | lower middle income | 2004 |
| aze | Azerbaijan | lower middle income | 2004 |
| geo | Georgia | lower middle income | 2004 |
| bhr | Bahrain | high income | 2004 |
| irn | Iran Islamic Republic | lower middle income | 2004 |
| isr | Israel | high income | 2004 |
| kwt | Kuwait | high income | 2004 |
| omn | Oman | high income | 2004 |
| qat | Qatar | high income | 2004 |
| sau | Saudi Arabia | high income | 2004 |
| tur | Turkey | upper middle income | 2004 |
| are | United Arab Emirates | high income | 2004 |
| xws | Rest of Western Asia | - | 2004 |
| egy | Egypt | lower middle income | 2004 |
| mar | Morocco | lower middle income | 2004 |
| tun | Tunisia | lower middle income | 2004 |
| xnf | Rest of North Africa | lower middle income | 2004 |
| cmr | Cameroon | low income | 2004 |
| civ | Cote d'Ivoire | low income | 2004 |
| gha | Ghana | low income | 2004 |
| nga | Nigeria | low income | 2004 |
| sen | Senegal | low income | 2004 |
| xwf | Rest of Western Africa | low income | 2004 |
| xcf | Central Africa | - | 2004 |
| xac | South Central Africa | - | 2004 |
| eth | Ethiopia | low income | 2004 |
| ken | Kenya | low income | 2004 |
| mdg | Madagascar | low income | 2004 |
| mwi | Malawi | low income | 2004 |
| mus | Mauritius | low income | 2004 |
| moz | Mozambique | low income | 2004 |
| tza | Tanzania | low income | 2004 |
| uga | Uganda | low income | 2004 |
| zmb | Zambia | lower middle income | 2004 |
| zwe | Zimbabwe | low income | 2004 |
| xec | Rest of Eastern Africa | - | 2004 |
| bwa | Botswana | upper middle income | 2004 |
| nam | Namibia | lower middle income | 2004 |
| zaf | South Africa | upper middle income | 2004 |
| xsc | Rest of South African | lower middle income | 2004 |
| xtw | Rest of the World | - | 2004 |
| AUS | Australia | high income | 2001 |
| NZL | New Zealand | high income | 2001 |
| XOC | Rest of Oceania | - | 2001 |
| CHN | China | low income | 2001 |
| HKG | Hong Kong | high income | 2001 |
| JPN | Japan | high income | 2001 |
| KOR | Korea | high income | 2001 |
| TWN | Taiwan | high income | 2001 |
| XEA | Rest of East Asia | lower middle income | 2001 |
| IDN | Indonesia | low income | 2001 |
| MYS | Malaysia | upper middle income | 2001 |
| PHL | Philippines | lower middle income | 2001 |
| SGP | Singapore | high income | 2001 |
| THA | Thailand | lower middle income | 2001 |
| VNM | Vietnam | low income | 2001 |
| XSE | Rest of Southeast Asia | low income | 2001 |
| BGD | Bangladesh | low income | 2001 |
| IND | India | low income | 2001 |
| PAK | Pakistan | low income | 2001 |
| LKA | Sri Lanka | lower middle income | 2001 |
| XSA | Rest of South Asia | low income | 2001 |
| CAN | Canada | high income | 2001 |
| USA | United States | high income | 2001 |
| MEX | Mexico | upper middle income | 2001 |
| XNA | Rest of North America | high income | 2001 |
| BOL | Bolivia | lower middle income | 2001 |
| COL | Colombia | lower middle income | 2001 |
| ECU | Ecuador | lower middle income | 2001 |
| PER | Peru | lower middle income | 2001 |
| VEN | Venezuela | upper middle income | 2001 |
| ARG | Argentina | upper middle income | 2001 |
| BRA | Brazil | upper middle income | 2001 |
| CHL | Chile | upper middle income | 2001 |
| URY | Uruguay | upper middle income | 2001 |
| XSM | Rest of South America | - | 2001 |
| XCA | Central America | - | 2001 |
| XFA | Rest of FTAA | - | 2001 |
| XCB | Rest of the Caribbean | - | 2001 |
| AUT | Austria | high income | 2001 |
| BEL | Belgium | high income | 2001 |
| DNK | Denmark | high income | 2001 |
| FIN | Finland | high income | 2001 |
| FRA | France | high income | 2001 |
| DEU | Germany | high income | 2001 |
| GBR | United Kingdom | high income | 2001 |
| GRC | Greece | high income | 2001 |
| IRL | Ireland | high income | 2001 |
| ITA | Italy | high income | 2001 |
| LUX | Luxembourg | high income | 2001 |
| NLD | Netherlands | high income | 2001 |
| PRT | Portugal | high income | 2001 |
| ESP | Spain | high income | 2001 |
| SWE | Sweden | high income | 2001 |
| CHE | Switzerland | high income | 2001 |
| XEF | Rest of EFTA | high income | 2001 |
| XER | Rest of Europe | - | 2001 |
| ALB | Albania | upper middle income | 2001 |
| BGR | Bulgaria | upper middle income | 2001 |
| HRV | Croatia | high income | 2001 |
| CYP | Cyprus | high income | 2001 |
| CZE | Czech Republic | high income | 2001 |
| HUN | Hungary | high income | 2001 |
| MLT | Malta | high income | 2001 |
| POL | Poland | high income | 2001 |
| ROM | Romania | upper middle income | 2001 |
| SVK | Slovakia | high income | 2001 |
| SVN | Slovenia | high income | 2001 |
| EST | Estonia | high income | 2001 |
| LVA | Latvia | upper middle income | 2001 |
| LTU | Lithuania | upper middle income | 2001 |
| RUS | Russian Federation | upper middle income | 2001 |
| XSU | Rest of Former Soviet Unio | - | 2001 |
| TUR | Turkey | upper middle income | 2001 |
| IRN | Iran Islamic Republic of | upper middle income | 2001 |
| XME | Rest of Middle East | - | 2001 |
| MAR | Morocco | lower middle income | 2001 |
| TUN | Tunisia | lower middle income | 2001 |
| XNF | Rest of North Africa | - | 2001 |
| BWA | Botswana | upper middle income | 2001 |
| ZAF | South Africa | upper middle income | 2001 |
| XSC | Rest of South African CU | - | 2001 |
| MWI | Malawi | low income | 2001 |
| MUS | Mauritius | low income | 2001 |
| MOZ | Mozambique | low income | 2001 |
| TZA | Tanzania | low income | 2001 |
| ZMB | Zambia | lower middle income | 2001 |
| ZWE | Zimbabwe | low income | 2001 |
| XSD | Rest of SADC | - | 2001 |
| MDG | Madagascar | low income | 2001 |
| NGA | Nigeria | lower middle income | 2001 |
| UGA | Uganda | low income | 2001 |
| XSS | Rest of Sub-Saharan Africa | - | 2001 |
| aus | Australia | high income | 1997 |
| nzl | New Zealand | high income | 1997 |
| chn | China | low income | 1997 |
| hkg | Hong Kong | high income | 1997 |
| jpn | Japan | high income | 1997 |
| kor | Korea | high income | 1997 |
| twn | Taiwan | high income | 1997 |
| idn | Indonesia | lower middle income | 1997 |
| mys | Malaysia | upper middle income | 1997 |
| phl | Philippines | lower middle income | 1997 |
| sgp | Singapore | high income | 1997 |
| tha | Thailand | lower middle income | 1997 |
| vnm | Vietnam | low income | 1997 |
| bgd | Bangladesh | low income | 1997 |
| ind | India | low income | 1997 |
| lka | Sri Lanka | low income | 1997 |
| xsa | Rest of South Asia | low income | 1997 |
| can | Canada | high income | 1997 |
| usa | United States | high income | 1997 |
| mex | Mexico | upper middle income | 1997 |
| xcm | Central America, Caribbean | - | 1997 |
| col | Colombia | upper middle income | 1997 |
| per | Peru | upper middle income | 1997 |
| ven | Venezuela | upper middle income | 1997 |
| xap | Rest of Andean Pact | - | 1997 |
| arg | Argentina | upper middle income | 1997 |
| bra | Brazil | upper middle income | 1997 |
| chl | Chile | upper middle income | 1997 |
| ury | Uruguay | upper middle income | 1997 |
| xsm | Rest of South America | - | 1997 |
| aut | Austria | high income | 1997 |
| bel | Belgium | high income | 1997 |
| dnk | Denmark | high income | 1997 |
| fin | Finland | high income | 1997 |
| fra | France | high income | 1997 |
| deu | Germany | high income | 1997 |
| gbr | United Kingdom | high income | 1997 |
| grc | Greece | high income | 1997 |
| irl | Ireland | high income | 1997 |
| ita | Italy | high income | 1997 |
| lux | Luxembourg | high income | 1997 |
| nld | Netherlands | high income | 1997 |
| prt | Portugal | high income | 1997 |
| esp | Spain | high income | 1997 |
| swe | Sweden | high income | 1997 |
| che | Switzerland | high income | 1997 |
| xef | Rest of Eur Free Trade Area | high income | 1997 |
| alb | Albania | low income | 1997 |
| bgr | Bulgaria | upper middle income | 1997 |
| hrv | Croatia | high income | 1997 |
| cze | Czech Republic | high income | 1997 |
| hun | Hungary | high income | 1997 |
| mlt | Malta | high income | 1997 |
| pol | Poland | high income | 1997 |
| rom | Romania | upper middle income | 1997 |
| svk | Slovakia | high income | 1997 |
| svn | Slovenia | high income | 1997 |
| est | Estonia | upper middle income | 1997 |
| lva | Latvia | upper middle income | 1997 |
| ltu | Lithuania | upper middle income | 1997 |
| rus | Russian Federation | upper middle income | 1997 |
| xsu | Rest of Former Soviet Union | - | 1997 |
| cyp | Cyprus | high income | 1997 |
| tur | Turkey | lower middle income | 1997 |
| xme | Rest of Middle East | - | 1997 |
| mar | Morocco | lower middle income | 1997 |
| xnf | Rest of North Africa | - | 1997 |
| bwa | Botswana | lower middle income | 1997 |
| xsc | Rest of South Afr C Union | upper middle income | 1997 |
| mwi | Malawi | low income | 1997 |
| moz | Mozambique | low income | 1997 |
| tza | Tanzania | low income | 1997 |
| zmb | Zambia | low income | 1997 |
| zwe | Zimbabwe | low income | 1997 |
| xsf | Other Southern Africa | - | 1997 |
| uga | Uganda | low income | 1997 |
| xss | Rest of Sub-Saharan Africa | - | 1997 |
| xrw | Rest of World | - | 1997 |
| aus | Australia | high income | 1995 |
| nzl | New Zealand | high income | 1995 |
| jpn | Japan | high income | 1995 |
| kor | Korea | high income | 1995 |
| idn | Indonesia | lower middle income | 1995 |
| mys | Malaysia | upper middle income | 1995 |
| phl | Philippines | lower middle income | 1995 |
| sgp | Singapore | high income | 1995 |
| tha | Thailand | lower middle income | 1995 |
| vnm | Vietnam | low income | 1995 |
| chn | China | low income | 1995 |
| hkg | Hong Kong | high income | 1995 |
| twn | Taiwan | high income | 1995 |
| ind | India | low income | 1995 |
| lka | Sri Lanka | low income | 1995 |
| ras | Rest of South Asia | low income | 1995 |
| can | Canada | high income | 1995 |
| usa | United States | high income | 1995 |
| mex | Mexico | upper middle income | 1995 |
| cam | Central America, Caribbean | - | 1995 |
| ven | Venezuela | lower middle income | 1995 |
| col | Colombia | lower middle income | 1995 |
| rap | Rest of Andean pact | - | 1995 |
| arg | Argentina | upper middle income | 1995 |
| bra | Brazil | upper middle income | 1995 |
| chl | Chile | upper middle income | 1995 |
| ury | Uruguay | upper middle income | 1995 |
| rsm | Rest of South America | - | 1995 |
| gbr | United Kingdom | high income | 1995 |
| deu | Germany | high income | 1995 |
| dnk | Denmark | high income | 1995 |
| swe | Sweden | high income | 1995 |
| fin | Finland | high income | 1995 |
| reu | Rest of EU | high income | 1995 |
| eft | EFTA | high income | 1995 |
| cea | Central European Associates | high income | 1995 |
| fsu | Former Soviet Union | - | 1995 |
| tur | Turkey | lower middle income | 1995 |
| rme | Rest of Middle East | - | 1995 |
| mar | Morocco | lower middle income | 1995 |
| rnf | Rest of North Africa | - | 1995 |
| saf | Rest of South Afr C Union | upper middle income | 1995 |
| rsa | Other Southern Africa | - | 1995 |
| rss | Rest of Sub-Saharan Africa | - | 1995 |
| row | Rest of World | high income | 1995 |
| aus | Australia | high income | 1992 |
| nzl | New Zealand | high income | 1992 |
| jpn | Japan | high income | 1992 |
| kor | Korea | high income | 1992 |
| idn | Indonesia | lower middle income | 1992 |
| mys | Malaysia | upper middle income | 1992 |
| phl | Philippines | lower middle income | 1992 |
| sgp | Singapore | high income | 1992 |
| tha | Thailand | lower middle income | 1992 |
| chn | China | low income | 1992 |
| hkg | Hong Kong | high income | 1992 |
| twn | Taiwan | high income | 1992 |
| idi | India | low income | 1992 |
| ras | Rest of South Asia | low income | 1992 |
| can | Canada | high income | 1992 |
| usa | United States | high income | 1992 |
| mex | Mexico | upper middle income | 1992 |
| cam | Central America, Caribbean | - | 1992 |
| arg | Argentina | upper middle income | 1992 |
| bra | Brazil | upper middle income | 1992 |
| chl | Chile | upper middle income | 1992 |
| rsm | Rest of South America | - | 1992 |
| e\_u | EU12 | high income | 1992 |
| eu3 | EU3 AUT SWE FIN | high income | 1992 |
| eft | EFTA | high income | 1992 |
| cea | Central European Associates | upper middle income | 1992 |
| fsu | Former Soviet Union | - | 1992 |
| mea | Rest of Middle East | - | 1992 |
| ssa | Rest of Sub-Saharan Africa | - | 1992 |
| row | Rest of World | - | 1992 |

1. In multiplier analysis with fixed input coefficients, these values also represent fixed unit input re­quirements in value terms, though of course in CGE models one can allow for these coefficients to be endogenous. [↑](#footnote-ref-1)
2. This example is calculated directly from the attached database, using the data of Italy. [↑](#footnote-ref-2)