Development of a System of Indicators for a Resource efficient Europe

D5.2 Interim report

Interim report on data processing creating EE IO time series and now-casted data

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About DESIRE

DESIRE is a FP7 project that will develop and apply an optimal set of indicators to monitor European progress towards resource-efficiency. The project runs from September 2012 to February 2016. We propose a combination of time series of environmentally extended input output data (EE IO) and the DPSIR framework to construct the indicator set. Only this approach will use a single data set that allows for consistent construction of resource efficiency indicators capturing the EU, country, sector and product group level, and the production and consumption perspective including impacts outside the EU. The project will:

- Improve data availability, particularly by creating EE IO time series and now-casted data
- Improve calculation methods for indicators that currently still lack scientific robustness, most notably in the field of biodiversity/ecosystem services and critical materials. We further will develop novel reference indicators for economic success.
- Explicitly address the problem of indicator proliferation and limits in available data that have a 'statistical stamp'. Via scientific analysis we will select the smallest set of indicators giving mutually independent information, and show which shortcuts in (statistical) data inventory can be made without significant loss of quality.

The project comprises further Interactive policy analysis, indicator concept development via 'brokerage' activities, Management, and Conclusions and implementation including a hand over of data and indicators to the EU's Group of Four of EEA, Eurostat, DG ENV and DG JRC.

Partners are:

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2. Wuppertal Institute (WI), Wuppertal, Germany
3. Alpen Adria University - Institute of Social Ecology (UNI-KLU), Vienna, Austria
4. Institute of Environmental Sciences, University of Leiden (UL-CML), Leiden, Netherlands
5. Sustainable Europe Research Institute (SERI), Vienna, Austria
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Executive Summary

Work package 5 (WP5) aims to compile an Environmentally-Extended Multi-Regional Input–Output database (EEMRIO) time series and calculate 'macro resource indicators' based on this database. In order to do so, the following tasks have to be accomplished:

1. Specify EE IO related 'macro resource' indicators including tentative natural targets/constraints
2. Systematically use and expand Multi-regional Environmentally Extended Input-Output data to time series as a basis for indicator calculation.
3. Create now-casted EE IO data
4. Calculate EE IO based 'macro resource' indicators

This interim report focus on the compilation task 2 and describes the initial data gathering done for task 3. It is based on the previous report D 5.1 (inception report).

This report includes a description of how required data is obtained, refined and applied it to build the first MRIO time series. The report outlines methods to incorporate information about changing product and industry ouput as well as structural changes in the economy.

Following the plans described in D 5.1. a macro economic database was compiled which is used as overall constrain for all further economic modelling. This and data from the previous fp7 project CREEA was used to compile the first time series of monetary supply use tables. The final time series will include trade data and information about structural change within the domestic economies over time. The data compilation and refining process for this task is on track.

EXIOBASE includes various macro resource accounts ("environmental extensions" or "satellite accounts"). At the end of this workpackage, all these data will be gathered from the different groups and save in the EXIOBASE database. Multiple testing routines were developed to ensure consistency among the different datasets.

Time lags of several year hinders the use of MRIOs for policy making. DESIRE will explore options for now-casting the EEIO database and indicator results. We investigated several possibilities and data sources to do so and report on the outcome of this process.

In addition to monetary tables, physical IO time series data will be calculated. The procedure will be slightly different from that already developed for the EXIOBASE 2/CREEA since time series allows a better modelling of the production of waste from accumulated materials.

Several datasets have been compiled during the last month of the project. These have been distributed among all working group partners through the data sharing facility provided by TNO (sharepoint).

1 Introduction

Multi-regional input-output projects (such as EXIOPOL - Tukker, Poliakov et al. 2009) increasingly include the theoretical and fragmented national accounting projects into a systematic international framework of environmental and economic accounts, and such work now covers in the order of over 50 energy carriers, 28 emission types, 48 types of resources, 3 land types, and 3 types of water extraction (Tukker et al. 2009). The CREEA project (www.creea.eu) looked at extending and updating the database so that more timely analysis is possible, but also add physical supply and use tables to the database so that waste and recycling efforts are captured. More recently, Eurostat produced an integrated SUT/IOT time series for the EU27 that includes it NAMEA Air (around 8 air emissions). All these efforts have limitations:

- EXIOPOL and CREEA are global databases but do not consist of time series
- The EUROSTAT data aggregates data for the EU only and has limited extensions

In this report, the core of the work effort goes into using the snapshots of environmental and economic activity to create time series of EE IO data, where it seems most logical to use the extensive EXIOPOL and CREEA results as a basis. By so doing, we can begin to analyse resource efficiency across long time series, from both the production and consumption perspectives, by producing industry, and by final product. Whilst other frameworks to input-output analysis can give partial information, particularly on the production side, no other framework can give the systematic analysis required for incorporating life-cycle approaches to analyse resource efficiency of final outputs of our economic systems.

A key working hypothesis in this project is that an Environmentally-Extended Input–Output database (EE IO) database is a very powerful way to store environmental and economic data for further analysis and indicator construction. This is particularly true for emissions and primary resource uses that can easily be related to industry sectors at the usual level of detail of IO tables (60+ per country). For the indicators that can be quite easily calculated with an EE IO database we will use as shorthand the term 'macro-resource indicators' (referring to land, materials, water, but also emission related impact-indicators like greenhouse gases).

Direct resource use will be complemented by upstream or embodied resource requirements of imports and exports. By this, the focus changes from domestic resource use (territory or production perspective) to global resource requirements and thus allows for discussing the global responsibility of resource use. For material use this will allow for transforming DMC (domestic material consumption) to RMC (raw material consumption). As such, all upstream impacts which have occurred in the production of products for final consumption is calculated. This calculation gives what is referred to as the "embodied" impact in items of final consumption, and more recently and popularly has been redefined as the "footprint" perspective for many indicator types. The same approach can be taken for energy accounts. Data for TPES (total primary energy supply) or GIEC (gross inland energy consumption) are available and well established, however, a full indicator suite related to upstream energy requirement has not yet been presented. The same procedure can be done for land, water and emissions, thus giving indicators related to the "land" footprint, water footprint (or virtual water) and carbon footprint.

The System of National Accounts (SNA) will be used to underpin the calculations. The SNA was introduced as the principle international framework for inventorying economic activity in a harmonised manner and in 2003 the System of Environmental and Economic Accounting (SEEA) was proposed in order to harmonise environmental accounting concepts with the existing economic accounts. Both accounting conventions and industry classifications are standardised, making it pivotal for undertaking integrated economic and environmental assessments. The System of National Accounts is built up on the convention of Supply and Use tables, where production is classified on the supply side by the type of product and the producing entity, whilst on the use side, by the requirements for production of the producing entity and the final demand for products. The Supply and Use framework thus incorporates notions of sole, joint and by-production as well as accounting for the material and economic inputs into production. The Supply/Use system forms the backbone of National Accounting currently, and is the basis for all applied and general equilibrium modelling exercises. Whilst the roots of the framework come from economics (Leontief 1936), it has long been extended into analysing energy requirements (Herendeen 1973) and greenhouse gas emissions, and more recently into general accounting for extended sets of environmental inputs.

1.1 Backgrounds on EE SUT and IOT

MRIO analysis is a rapidly developing field (Tukker and Dietzenbacher 2013). While regional IO analysis has been around for some time (Isard 1951, Leontief and Strout 1963, Polenske 1970, Munksgaard and Pedersen 2001, Lenzen et al. 2004), its use in the calculation of environmental footprints (Turner et al. 2007, Weinzettel et al. 2013) and its relevance to climate policy issues, particularly with regard to carbon leakage (Peters and Hertwich 2008, Hertwich and Peters 2009, Skelton 2013, Kanemoto et al. 2014) has significantly advanced the field's development in the last decade. Now a considerable number of environmental and socio-economic issues that concern consumer behavior and that span global production networks use MRIO in order to fully account for demand-side pressures (Ewing et al. 2012, Lenzen et al. 2012, OECD 2013, Tukker et al. 2013, Alsamawi et al. 2014, Simas in press, Simas Submitted.).

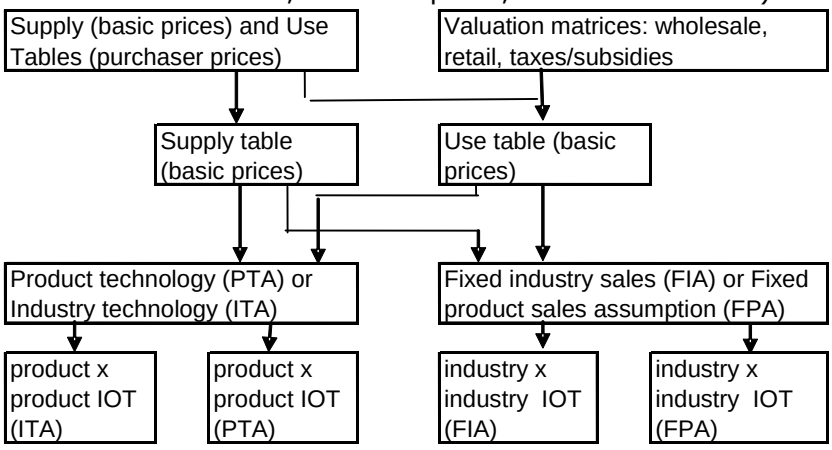

Figure 1.1: Simplified input-output framework (modified from Rueda-Cantuche et al., 2007)

The input-output framework as exemplified by the European System of Accounts (ESA95) consists of three types of table: supply and use tables (SUT) and symmetric input-output tables (IOT)(European Communities 1996; compare UN, 1993 and UN et al.,2003).

The supply table shows the supply of goods and services, both domestic and imported, by product and type of supplier in basic prices, while the use table shows the use of goods and services by product and type of use in purchase prices, i.e. as intermediate consumption by industries, final use (consumption, gross capital formation) and exports. The use table also contains the components of the value added by industry, i.e. compensation of employees, other taxes less subsidies on production and gross operating surplus. The use table can be converted to basic prices with the help of valuation matrices reflecting retail, wholesale and taxes/subsidies per product used per industry. If necessary, the SUT can be broken down into a domestic and import (use) and an export (supply) part.

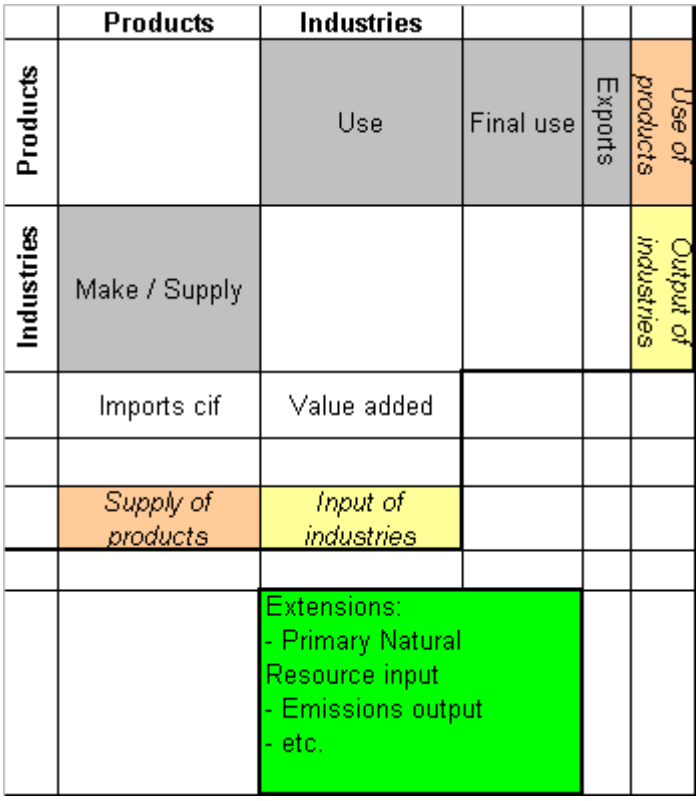

Figure 1.2: Schematic SUT with environmental extensions

Most analytical applications and models used (e.g. CGE) are based on IOTs rather than SUT (for an exception, see e.g. ten Raa and Rueda Cantuche 2007b). Using various assumptions about technology, IOTs can be derived from the SUT in basic prices. The tables can be of a product by product type or an industry by industry type (see Figure 1.1).

SUT and IOT can be expanded with satellite accounts to indicate an industry's resource inputs from and emission outputs to the environment (see figure 1.2.)

Note that Fig. 1.2 shows an EE SUT for a single country. This leads to the problem of how to deal with imports and exports. In some cases, apparent decoupling of CO_2 emissions or primary material use from GDP growth is in fact the result of the relocation of material and energy-intensive production to other countries (Giljum et al., 2008b; Wiedmann et al., 2008). Practitioners have sought to resolve this problem by using a multi-regional approach, in which different country EE SUT or EE IOT are linked via trade to a multi-regional SUT or IOT with environmental extensions (MR EE SUT or MR EE IOT). Figure 1.3 visualizes an MR EE SUT.

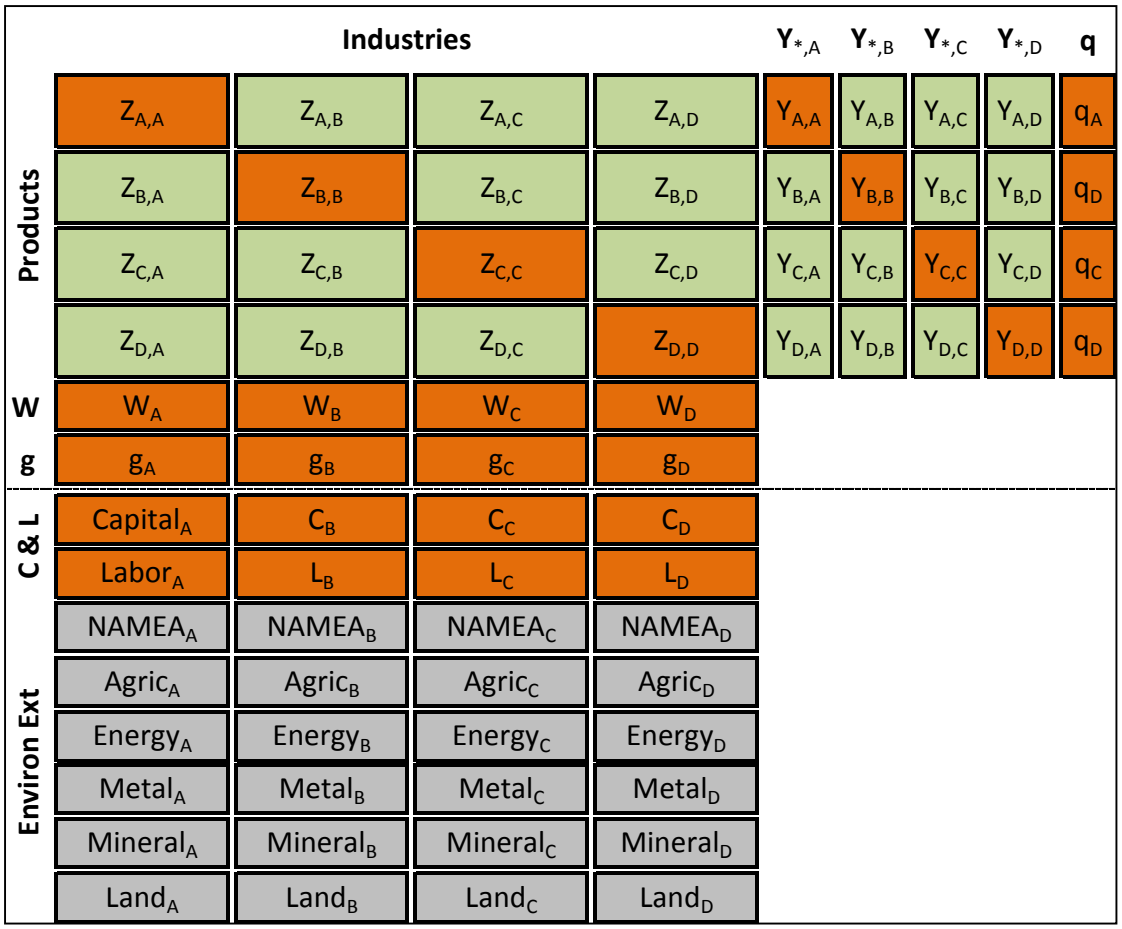

Figure 1.3: Example of a MR EE SUT for 4 countries

1.2 Overview of MR EE SUT and MR EE IOT developed in DESIRE

In DESIRE SUTs are used as the basic building blocks for the database. Using SUTs as basis for building up an IO framework accommodates both flexibility of modelling in terms of both products as well as industries; whilst keeping tractability of data – which is usually collected for supply and use of products, by industries or activities. As such, modelling and data inventory can be kept separate.

There are several caveats to use SUTs as basic building blocks for the IO database, though. The supply of products is published in basic prices, whilst the use of products is published in purchasers' prices. In order to produce an IOT, both tables need to be in the same valuation. For this reason, valuation matrices giving taxes less subsidies and trade- and transport margins are needed to convert the use table from purchasers' prices into basic prices. Once the basic SUTs are in the right prices, transformations to the desired IOT via one of the common technology assumptions (i.e. industry technology, commodity technology, fixed industry sales structure, or fixed product sales structure assumption) is straightforward (Box 4.1).

To provide the environmental detail desired in the EXIOBASE database and to maintain consistency across nations included in the dataset we use a standard set of industries and products. The sectoral structure of the EXIOBASE database loosely follows the NACE revision 1.1 industry classifications or CPA product classification. All sectors present in the standardized Eurostat tables are also present in the EXIOBASE database. In addition, details have been added to sectors of particular importance to SEEA. The following are categories of industries for which additional details are provided in EXIOBASE:

a) Agriculture and food
b) Mining and raw materials
c) Energy intensive metals production
d) Electricity
e) Transport
f) Re-processing of secondary material
g) Waste

Furthermore, significant extra detail is provided on energy products in a step to harmonizing MRIO work with the IEA energy balances.

1.3 This report

Work package 5 (WP5) aims to compile an Environmentally-Extended Multi-Regional Input–Output database (EEMRIO) time series and calculate 'macro resource indicators' based on this database. In order to do so, the following tasks have to be accomplished:

1. Specify EE IO related 'macro resource' indicators including tentative natural targets/constraints
2. Systematically use and expand Multi-regional Environmentally Extended Input-Output data to time series as a basis for indicator calculation.

3. Create now-casted EE IO data
4. Calculate EE IO based 'macro resource' indicators

As mentioned, the EXIOPOL and CREEA projects provide environmental-economic databases focussed on resource extractions and use for single years. Taking this as a starting point, DESIRE calculates a time series of resource efficiency indicators by incorporating temporal data into the EEIO framework. The geographic focus in the project is at the country level of the EU, with adequate description of non-EU countries to be undertaken so that reasonable estimates of resource efficiencies under consideration of embodied resource use of imports and exports can be incorporated. The work effort includes:

1. Provision of time-series data on resource requirements by economic sector. Here checks on inter-country consistency are important, as well as temporal coverage, and gap filling for unavailable data.
2. Provision of time-series data on key economic variables by industry such as Value Added, intermediate inputs (if available), taxes and subsidies, imports and exports, final demand.
3. Estimation of time-series data where gaps remain. Whilst primary inputs and final demand are generally readily available, time series of detailed production structures in the form of Supply/Use tables are usually either unavailable, or available only for a short period of time (with a time-lag). With the lack of this data, estimations must be made about changing production structures.
4. Pricing of economic data. For inter-temporal analysis, it is essential to obtain measures uninfluenced by fluctuating prices. Hence, constant price tables must be estimated.

Early in the project we decided to follow a strict top down approach with the macro economic data from the UN as main constraints. In this report we describe how we obtained and refined the required data and applied it to build the first MRIO time series (first part of chapter 1). Subsequent MRIO time series will incorporate information about changing product and industry ouput as well as structural changes in the economy. The data gathering and conceptional outline of these steps are explained in the second part of chapter 1.

EXIOBASE includes various macro resource accounts ("environmental extensions"). As for the product and industry classification, EXIOBASE 3 will incorporate the same level of detail as the previous version. The data gathering and refining of these extensions are described in chapter 2.

The building of EXIOBASE involved multiple working groups. The crucial last step in the compilation is to bring the data gathered and refined by the different groups together into one common framework. Chapter 3 explains how this will be implemented for the DESIRE project.

Time lags of several year hinders the use of MRIOs for policy making. DESIRE will explore options for now-casting the EEIO database and indicator results. We investigated several possibilities and data sources to do so and chapter 4 reports on the outcome of this process.

In addition to monetary tables, physical IO time series data will be calculated. The procedure will be slightly different from that already developed for the EXIOBASE 2/CREEA since time series allows a better modelling of the production of waste from accumulated materials. All this is described in chapter 5.

Several datasets have been compiled during the last month of the project. These have been distributed among all working group partners through the data sharing facility provided by TNO (sharepoint).

This interim report focus on the compilation task 2 of the Description of Work and describes the initial data gathering done for task 3. It is based on the previous report D 5.1 (inception report) which introduce the supply use and input output framework as well as the general workplan for this work package.

2 Monetary SUT

2.1 The macro - economic database

The compilation of the monetary SUT in DESIRE follows a strict top down approach starting at global economic estimates and aggregated official country data. In order to do so, a balanced macro - economic database (following the DESIRE country and region classification) had to be constructed. This dataset is based on the UNSD National Accounts Main Aggregates Database (UN SNA main agg.) plus additional data from the National Statistics – Republic of China (Taiwan). We used the global total entry in the UN SNA main agg. as overall constraint. However, this was balanced to ensure equal imports and exports for each year and consistent accounting for value added per kind of economic activity. We aimed to minimize deviations in the DESIRE countries and distributed necessary changes to the Rest of the World regions.

Main characteristics:

1) Balanced macro economic data for 213 countries
2) Data for GDP, final demand per category and value added for several industry sectors
3) Global imports and exports balanced (f.o.b)
4) Available in constant and current purchaser prices

2.1.1 Data source

2.1.1.1 UNSD – SNA main aggregates

The main data source used is the United Nations Statistics Division (UNSD) - National Accounts Statistics: Main Aggregates and Detailed Tables. These tables provide a complete and consistent set of time series from 1970 onwards of main national accounts aggregates for more than 200 countries/regions (http://unstats.un.org/unsd/snaama/). The tables are available in current USD and constant USD for 2005 (converted from data in constant prices in national currency using the annual period-average market exchange rate of the base year for all years and adjusted with price-adjusted rates of exchange in case of considerable distortion, exports and imports f.o.b.). By October 2013 data was available up to 2011. However, the Methodology report of the UN SNA main agg. states that the figures of the last available year should be regarded as provisional.

The main aggregates available are:

- Final consumption expenditure,
- Household consumption expenditure (including Non-profit institutions serving households),
- General government final consumption expenditure,
- Gross capital formation,
- Gross fixed capital formation (including Acquisitions less disposals of valuables),
- Changes in inventories,
- Exports of goods and services,
- Imports of goods and services,
- Gross Domestic Product (GDP),

- Agriculture, hunting, forestry, fishing (ISIC A-B),
- Mining, Manufacturing, Utilities (ISIC C-E),
- Manufacturing (ISIC D),
- Construction (ISIC F),
- Wholesale, retail trade, restaurants and hotels (ISIC G-H),
- Transport, storage and communication (ISIC I),
- Other Activities (ISIC J-P),
- Total Value Added

2.1.1.2 Taiwan official country data

Taiwan does not appear in the country list of the UN SNA main agg but the Taiwanese economy is included in the global entry (pers. Comm. With Mr. Souza - National Accounts Section of the United Nations Statistics Division). The National Statistics - Republic of China (Taiwan) provides value added and final demand categories in a higher level of detail than the UN SNA main agg (http://eng.stat.gov.tw/). These official data has been aggregated to the UN SNA main agg classification. Whereas the UN SNA main agg. includes constant price data with the base year 2005, Taiwan uses 2006 as base year. This data has been rescaled to 2005 base year with the price deflator per category available from the National Statistic office.

2.1.2 Building the macro - economic database

2.1.2.1 Overview

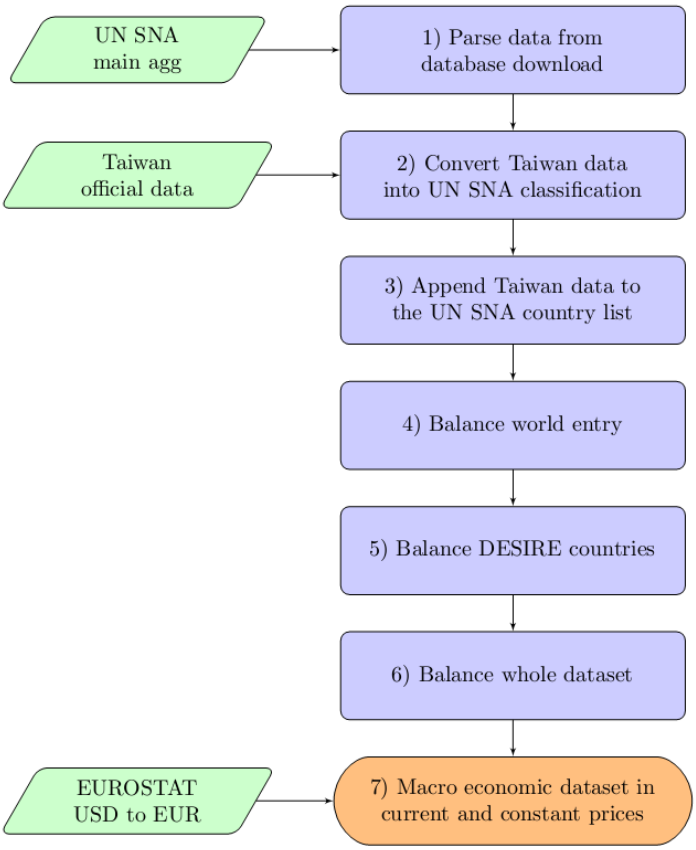

Figure 2.1: Building the Macro Economic Dataset for DESIRE

2.1.2.2 Detailed description

Data from the UN SNA main agg (Fig 2.1 – step 1) and the Taiwanese statistical office (Fig 2.1 – step 2) was read in Matlab. The Taiwanese data had to be converted as described above. The UN SNA main agg also provides data on a regional level, including global totals for all categories. These values were used as overall constraints for the whole dataset. Checking the sum of countries from the UN SNA main agg against the global entry shows differences of about 1 percent. These differences disappear almost completely after including Taiwan into the country list (Fig 2.1 – step 3), confirming the information from the UN statistical office (see Fig 1 in Appendix 2-A).
The initial data was reconciled for:

1) Negative values were set to zero
2) Subcategories higher than the aggregate value were set to the aggregate value
3) Missing subcategories were estimated based on global shares (only necessary for Democratic People's Republic of Korea and Swaziland)

In general, reconsolidation was not necessary for major economies (Appendix 2-A).

To ensure a balanced IO system per year global imports and exports were set equal for each year (Fig 2.1 – step 4). Global trade was set to the higher amount of imports or exports. The maximum change occurring was below 5.1 % (Figure 2 in Appendix 2-A). Gross capital formation was changed accordingly in order to keep overall GDP fixed. Gross value added by kind of economic activity in the UN SNA main agg is given in different price systems (e.g. in 'producer prices' for the US). To avoid inconsistencies in the dataset, gross values added was rescaled to GPD for the global entry as well as all countries (therefore value added now includes taxes and subsidies per sector). Gross fixed capital formation and changes in inventories were removed from the dataset because of missing/inconsistent data for several countries.

In the next step (Fig 2.1 – step 5), inconsistencies in the economic data of the DESIRE countries were reconciled. In general, changes required were minimal (apart from the rescaling of the gross value added per economic activity as explained above – see Appendix 2-A for further details). Subsequently, the whole dataset was balanced in GAMS (Fig 2.1 – step 6). The reconciled global entry was set as overall constraint and the pre-checked DESIRE countries were fixed. We used a quadratic programming approach for the balancing routines and set high weights on small values to preserve economic structure also in small countries. As far as possible, necessary changes were distributed to gross capital formation (Appendix 2-A).

In the final step (Fig 2.1 – step 7), exchange rates from eurostat (http://epp.eurostat.ec.europa.eu/portal/page/portal/exchange_rates/data/database) were used for the conversion from USD to EURO. The final macro economic dataset provides data for:

- Final consumption expenditure,
- Household consumption expenditure (including Non-profit institutions serving households),
- General government final consumption expenditure,
- Gross capital formation,
- Exports of goods and services,

- Imports of goods and services,
- Gross Domestic Product (GDP),
- Agriculture, hunting, forestry, fishing (ISIC A-B),
- Mining, Manufacturing, Utilities (ISIC C-E),
- Manufacturing (ISIC D),
- Construction (ISIC F),
- Wholesale, retail trade, restaurants and hotels (ISIC G-H),
- Transport, storage and communication (ISIC I),
- Other Activities (ISIC J-P),

The dataset is available in current USD and EURO as well as constant 2005 prices. The dataset was aggregated to the DESIRE country/region classification (44 countries and 5 Rest of the World regions).

2.1.2.3 Sofware

The procedure was implemented in MATLAB version R2013a (The MathWorks, Inc.), balancing was done in GAMS (GAMS Base Module, GAMSIDE build 32351/32372) using the Cplex solver.

2.2 First time series

The first time series of DESIRE was compiled using the data from the macro – economic database (value added and final demand estimates from the UN - refined in the macro economic database as described in section 2.1.) and the technical coefficients of 2007 (based on the CREEA/EXIOBASE 2 database: http://www.creea.eu/).

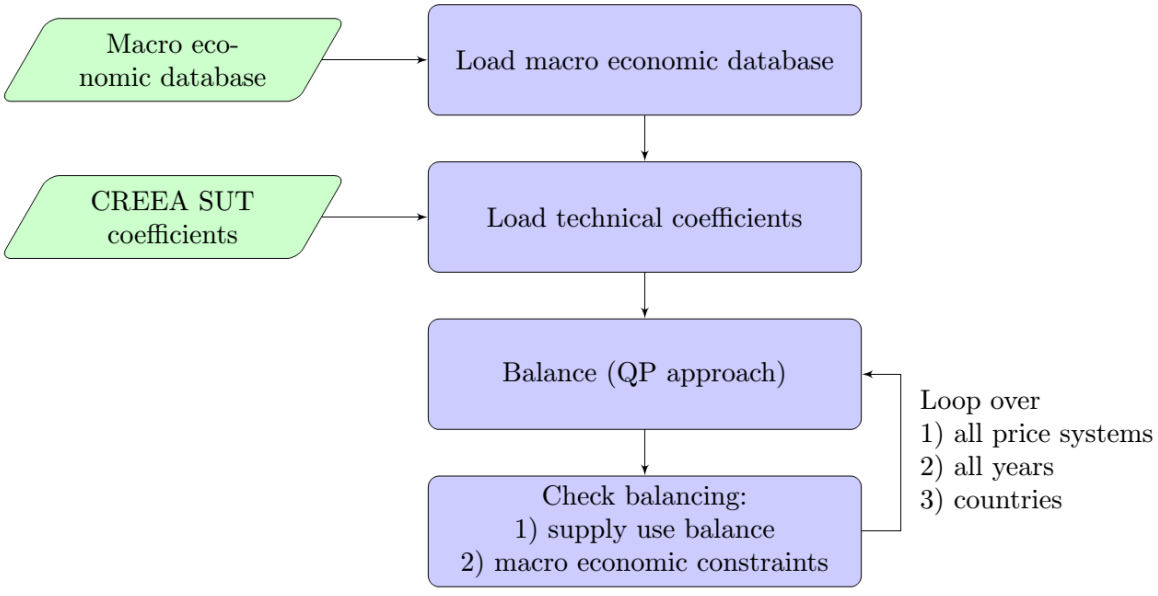

Figure 2.2: Computational steps for the calculation of the first time series. For the balancing we use a flexible mathematical programming approach (quadratic programming QP), where information gain (differences to the initial table) is minimized under the restriction of the given constraints.

2.2.1 Balancing constraints

The following constraints were implemented in GAMS (and subsequently double checked in MATALB) to balance the supply use table and ensure consistency with the macroeconomic data specifications:

1. Product output of the supply table equals product output of the use table (basic prices)
2. Industry output of the supply table equals industry output of the use table (basic prices)
3. The amount of import equals the import use.
4. Final demand of households (purchaser prices) equals the value given in the macro economic database (this includes Non Profit Institutions Serving Households: NPISH).
5. Final demand of governments (purchaser prices) equals the value given in the macro economic database.
6. Gross capital formation (purchaser prices) equals the value given in the macro economic database
7. Imports and exports (both in purchaser prices) equals the values given in the macro economic database
8. Value added per broad ISIC sector equals the value given in the macro economic database
9. The columns sums of trade and transport margins must be zero.
10. The column sum of the tax margins must equal the taxes and subsidies given in the basic price value added plus taxes block.
11. Intermediate and final demand (except capital formation) were restricted to be positive.

2.3 Trade data and trade linking

The main trade data used in DESIRE originates from the UN Comtrade database (United Nations Statistics Division 2012a) and the UN services trade database (United Nations Statistics Division 2012b). The Comtrade data whilst of reasonably high quality is not reconciled to itself, such that bilateral exports are not consistent with the mirror of bilateral imports. The BACI database (Gaulier and Zignago 2010) is based on UN Comtrade, but is reconciled, such that for a single year, every trade flow is recorded as a single bilateral trade flow in both physical units and in f.o.b. monetary valuation.

We hence start with the BACI database in both physical and monetary values for each year of the time series and aggregate the 5000 or so products of the HS classification into the EXIOBASE2.0 classification. Whilst this is usually a simple aggregation, for energy and waste flows, the EXIOBASE 2.0 classification is more detailed than the HS classification such that disaggregation is also required. Estimated energy exports (from the IEA database) or else estimated domestic production is used to disaggregate these HS codes. A similar process is done for the UN services trade database. The services trade database is complicated by much missing data, the multiple levels of aggregation and the partial reporting of bilateral trade flows, and total import/export flows. A bottom-up process is used to utilise as much information as possible in maintaining detailed

product and bilateral flows scaled to aggregate product and total import/export flows. Where the product detail is not high enough in the services trade data, the export flows are split by the shares of domestic production.

Once the bilateral commodity trade and services trade data is in the EXIOBASE2.0 classification, a reconciliation approach is undertaken at the bilateral trade level to match to firstly import/export data from the IEA and secondly, to aggregate trade data from the UN National Accounts (Section 1.1) (Fig. 1.3). We define the bilateral trade data matrix **B** with dimensions *i,r,s* where *i* refers to products, *r* refers to exporters and *s* refers to importers. We define IEA import and export data as $\mathbf{B}_{IEA}^{exp}$ for dimensions *i*, r* and import data as $\mathbf{B}_{IEA}^{imp}$for dimensions *i*,s* where *i** is the subset of energy carriers in the product classification *i.*

We use a flexible mathematical programming approach where information gain on the starting values of the bilateral trade cube $\mathbf{B}^0$ is minimised,

$$\min \quad t(B, B^0)\ where \tag{1}$$

$$t(B, B^0) = \sum_{i,j,k} \frac{1}{B^0_{i,j,k}} * (B^0_{i,j,k} - B_{i,j,k})^2 \tag{2}$$

subject to the import and export constraints for the IEA data at the individual product level,

$$B^{imp}_{IEA_{i*,k}} = \sum_j B_{i,j,k} \tag{3}$$

$$B^{exp}_{IEA_{i*,j}} = \sum_k B_{i,j,k} \tag{4}$$

And subsequently the import and export constraints for the national accounts data at the product group level, where the matrix **G** is a concordance matrix mapping the 10 or so product groups of the national accounts with the more detailed product groups in the trade cube.

$$\mathbf{B^{imp}_{NA}} = \mathbf{G} * \sum_j B_{i,j,k} + \sum_j B_{i,j,k} * B^{marg}_{i,j,k} \tag{5}$$

$$\mathbf{B^{exp}_{NA}} = \mathbf{G} * \sum_k B_{i,j,k} \tag{6}$$

Where $B^{marg}_{i,j,k}$ are the per-unit margin rates to transform from F.O.B. to C.I.F.

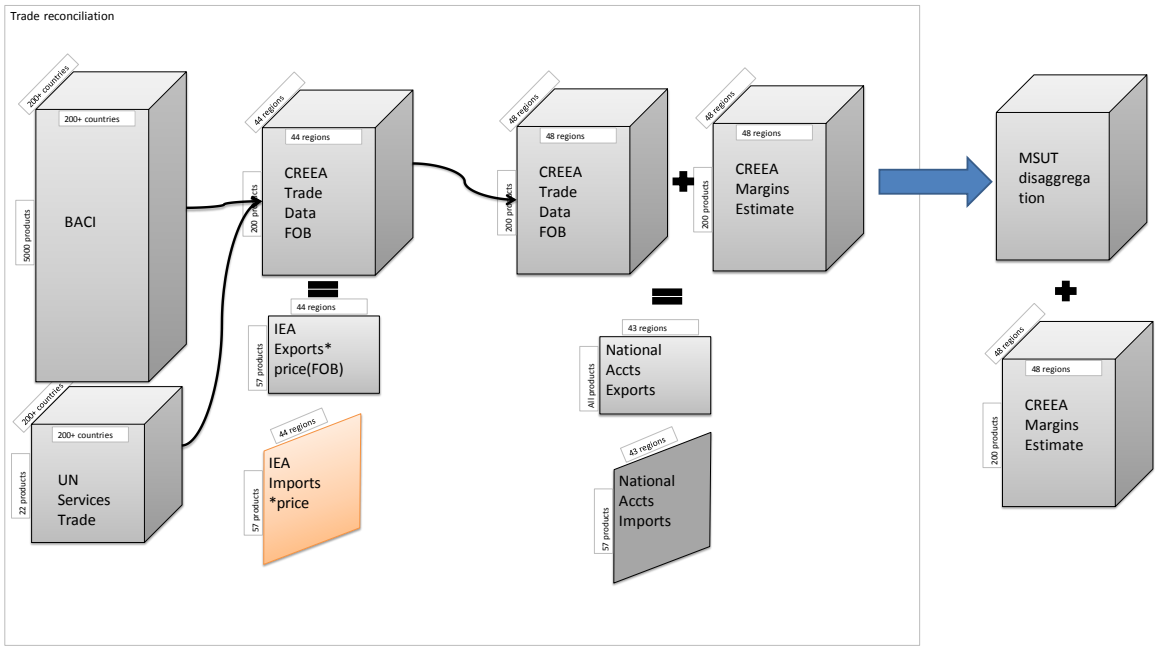

Figure 2.3: Trade reconciliation before estimation of MSUT values

2.4 Structural decomposition

Following the plan of work for the 'third' time-series as described in D5.1 Inception report, we have performed structural decomposition analysis (SDA) in order to analyse the drivers of changes in consumption of materials over time. The analysis was applied to input-output tables from Eurostat and from the OECD STAN databases. The objective of the SDA is to decompose an observed change in an indicator between two time periods into different parts; an intensity effect, a Leontief effect, and a final demand effect.

The intensity effect shows how much the use of the indicator per unit of output in a sector changed over time. The Leontief effect, or technical coefficient effect, is related to changes in the structure of the coefficients in the inverse of the Leontief matrix. The final demand effect determines which part of the change in the indicator can be attributed to changes in final demand from each sector.

In our analysis we use the rows of the input-output matrix as indicators in the SDA. The intensity effect then allows us to see how the inputs from a given sector as used by the other sectors (the row in the input-output matrix), changed per unit of output of the sectors, i.e. whether the output of a sector is more heavily or less heavily used as intermediate input in the other sectors now compared to the past.

2.4.1 Methodology

The steps we took to perform the SDA can be summarized as follows:

- Download input-output tables and supply tables from Eurostat and OECD web-sites.
- Download price indices.
- Convert input-output tables to constant prices.
- Perform multiple SDAs on the input-output tables using a different row of the input-output table as indicator in each of the separate SDAs.

- Create figures showing the results.

The input-output tables on Eurostat are either in industry-by-industry or product-by-product form, depending on the reporting country. We use the input-output tables from the years 2000 and 2005. Eurostat has industry price indices for value added by sector and country. Price indices for total output is missing for many countries, which is why we use the price index for value added. We use the country supply tables as weights to construct product price indices from the industry price indices. One of these price indices is then used to convert the input-output table of a country to constant prices, by deflating each row of the input-output table using the price index corresponding to the sector in that row.

For the OECD STAN dataset we use their input-output tables, and the price indices for value added to create input-output tables in constant prices. Here we do not create a new product-by-product index. For sectors where the price index was missing, we used the price index of the sector that is one level higher in the sector hierarchy.

Due to the fact that certain sectors in certain countries are considered confidential, data on these sectors are not presented separately in the input-output tables, but rather recorded together with similar sectors. For Eurostat data a typical example is that tobacco industry is hidden within food processing industry. For OECD-STAN a typical example is that pharmaceutical industry is hidden within chemical industry. We did not try to correct this data issue, therefore comparison between the countries for the indicators of confidential sectors is not always consistent.

For each of the countries we then perform the SDA on the two years of input-output tables that we have. We use the additive version of the Dietzenbacher and Los (1998) method. As indicators we use the rows of the input-output table. This procedure results in a large set of outcomes; for every country and every sector that is used as an indicator, we obtain the total effect, and the decomposition in an intensity effect, a Leontief effect, and a final demand effect related to each of the sectors that use the output from the indicator sector as input. This is a total of $number\ of\ countries \times (number\ of\ sectors)^2$ rows with a column for each of the different effects. As this number of values is too large to interpret from a table, the results were summarized in heat-type of graphs.

2.4.2 Results

In 2.4 an example a result graph is presented. Since we use the additive version of SDA, the effects are in absolute terms. There can be large differences between the effects for countries and sectors as the relative sizes of the sectors and countries differ. We therefore scale all the effects by the size of value in the intermediate input block (which

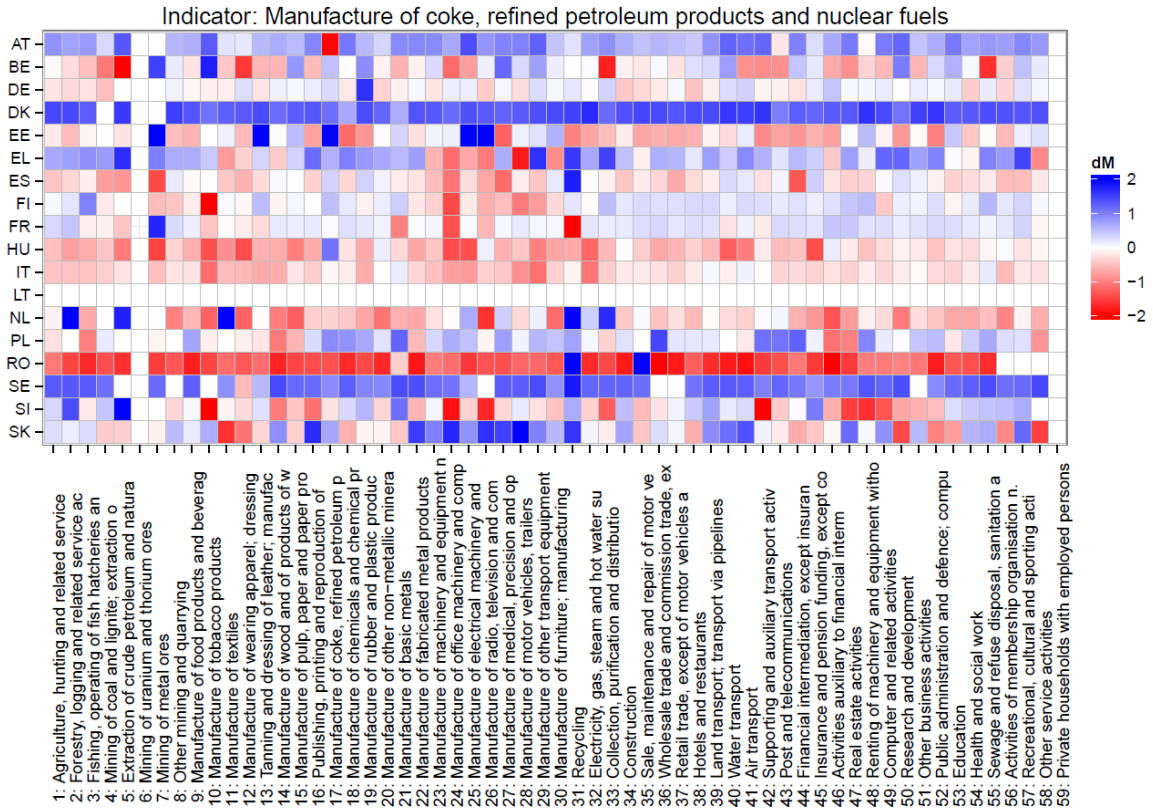

Figure 1.4: Total change in use of coke, refined petroleum products and nuclear fuels

is used as an indicator in the analysis) that the effect is related to (the average of the two years of the input-output table is used for the scaling). The figure shows the total change in use of the output from a specific sector (manufacture of coke, refined petroleum products and nuclear fuels in this case), as input to the sectors listed on the bottom of the figure. Each row in the figure corresponds to a country. A dark blue cell means that the total use of coke, refined petroleum products and nuclear fuels has increased two-fold in monetary terms between the two years. Conversely, a dark red cell implies a decrease by a factor two of the same input. And similarly, lighter shades of red and blue are associated with smaller decreases and increases. A separate figure was created for each of the indicators, and for each of the effects.

It would be impossible to present here all the tables and graphs produced during the analysis, but the overall conclusion goes as follows. The total use of materials across all the countries and sectors is growing, therefore reflecting growth of the global economy. The final demand effects is typically strong and has a positive impact on the total use of materials. Intensity effect is also typically strong, but the sign of the effect varies per country and per material. Leontief effect is typically of negligible size compared to the other two effects. For the constriction of 'third' time series the analysis of intensity effect is the most important, since we want to understand how significant is the change in technical coefficients in input-output/supply and use tables over time. Based on the analysis we conclude that, although in general intensity effect is tending to be negative, variations per country and materials are very high, so the goal would be to use as much

country specific information as possible. The coefficient time series will be constructed based on the time series of SUTs and IOTs available from National Statistical Offices, therefore allowing us to catch intensity and Leontief effect of changes in material use. The final demand effect will be captured by ensuring that the SUTs time-series in EXIOBASE 2.0 classification correspond to the macroeconomic UN database.

2.5 Coefficient time series

The main difference between the third time series and the previous versions is the use of time-varying technical coefficients. Based on the time-series of SUTs and IOTs from national statistical offices, which for some countries are published both in current and previous year prices, we can estimate year-to-year changes in each technical coefficient. Using the mapping between the EXIOBASE 2.0 classification of sectors/products and national classification, the coefficient time series in required classification will be created.

In order to create an overview of available we have checked the web-sites and got in contact, in necessary, of Eurostat and National statistical offices. For the cross-check we have also investigated the data sources reportedly used in construction of World Input-Output Database (WIOD), see Erumban et al. (2012). The short overview of available time-series is presented in Table , the full overview is included in the Appendix 2-B.

Table 2.1: Overview of availability of SUTs/IOTs time-series

Country name	Available years	Disaggregation level
Austria	1995, 1997, 1999-2009	NACE, 2-digit
Belgium	1995, 1997, 1999-2009	NACE, 2-digit
Bulgaria	2000-2006, 2008, 2009	NACE, 2-digit
Cyprus	1995-2009	NACE, 2-digit
Czech Republic	1995-2010	NACE, 2-digit
Germany	1995, 1997-2009	NACE, 2-digit
Denmark	1995-2009	NACE, 2-digit
Estonia	1997, 2000-2009	NACE, 2-digit
Spain	1995-2009	NACE, 2-digit
Finland	1995-2010	NACE, 2-digit
France	1995, 1997, 1999-2009	NACE, 2-digit
Greece	2000-2011	NACE, 2-digit
Hungary	1998-2010	NACE, 2-digit
Ireland	1998, 2000-2009	NACE, 2-digit
Italy	1995-2009	NACE, 2-digit
Lithuania	2000-2009	NACE, 2-digit
Luxenbourg	1995-2012	NACE, 2-digit
Latvia	1996, 1998, 2004, 2007-2009	NACE, 2-digit
Malta	2000, 2001, 2004, 2008	NACE, 2-digit
Netherlands	1995-2010	NACE, 2-digit
Poland	1995-2009	NACE, 2-digit
Portugal	1995-2010	NACE, 2-digit
Romania	2000-2010	NACE, 2-digit
Sweden	1995-2010	NACE, 2-digit
Slovenia	1996, 2000-2009	NACE, 2-digit
Slovakia	1995-2009	NACE, 2-digit
United Kingdom	1995-2010	NACE, 2-digit
Croatia	2004, 2005	NACE, 2-digit

Australia	1999, 2002-2010	106 products/sectors
Brazil	1995-2009	110 products/ 55 sectors
Canada	1995-2010	473 products/ 123 sectors
Switzerland	2001, 2005, 2008	42 products/sectors
China	1997, 2002. 2007, 2010	40 products/sectors
Indonesia	2000, 2005	175 products/sectors
India	1995, 2004, 2007, 2008	130 products/sectors
Japan	1995-2005	108 products/sectors
South Korea	1995, 1998, 2000, 2003, 2005-2011	78 products/sectors
Mexico	2003, 2008	79 products/sectors, 262 products/sectors
Norway	2001-2010	NACE, 2-digit
Russia	1998-2006	15 products/sectors
Turkey	1996, 1998, 2002	97 products/sectors
Taiwan	1996, 1999, 2001, 2004, 2006-2011	160 products/sectors, 52 products/ 63 sectors
United States	1998-2011	65 products/sectors
South Afrika	1998-2000, 2002, 2005	95 products/secotrs

The coverage of time-series is quite good for the EU countries and for the most developed non-EU countries. National Statistical Offices of non-EU countries typically do not provide complete time series of the tables. Therefore for most of the EU countries and for some exceptional non-EU countries we would indeed be able to estimate year-to-year changes in technical coefficients. For the rest of the countries, coefficient time series will be created using inter- and extrapolation of the existing data points.

Creation of coefficient time series for each country starts with technical coefficients obtained from EXIOBASE 2.0 developed within CREEA FP7 project. These technical coefficients will firstly be cross-checked with LCA data in order to ensure that the key feedstocks are not missing from the table. If a_{ij}^{2007} is the technical coefficient describing input of product *i* into sector *j* in the base 2007 year and *M* is the transformation matrix from EXIOBASE 2.0 classification to NSI classification (*i,j*) →(*m,n*) the technical coefficients for a year *t* are derived:

$$a_{ij}^{t} = a_{ij}^{2007} \cdot \frac{a_{mn}^{t}}{a_{mn}^{2007}} .$$

The reliability of data in an SUT/IOT is decreasing with the size of the transaction, due to measurement and rounding errors. Therefore for the transactions below a certain criteria, the adjustment coefficient from the base year will be based on the average change on the technical coefficient in the country:

$$a_{ij}^{t} = a_{ij}^{2007} \cdot \frac{\sum_{n} a_{mn}^{t}}{\sum_{n} a_{mn}^{2007}} .$$

This formula was chosen because the results of the SDA analysis suggest that the change of intensity of using a specific product is rather stable across the industries within a given country.

2.6 Next steps

Outline of the steps:

- Create product/industry totals in EXIOBASE classification, consistent with macroeconomic UN data
- Build coefficient time series using available SUT data and inter/extrapolation to fill in data gaps
- Finalise the trade link for the MR SUT table, including service trade
- Create third time series with the following inputs: product/industry totals (fixed), trade matrix (fixed), supply and use coefficients (allow to vary for balancing of tables)
- Calculate EE IO based 'macro resource' indicators based on the final MRIO time series

3 Macro-resource accounts

3.1 Energy

The aim of this task is to produce time series of physical energy supply and use tables (E-SUTs), which will be the basis to calculate the air emissions arising from combustion processes and the energy extension that will be made available in the third version of Exiobase. In doing so, we follow the rules of the System of Environmental-Economic Accounting (SEEA) provided by UN (2013) and Eurostat (2014).

This section describes the steps followed to create the E-SUTs for the period 1995-2010. Nowcasting of more recent years is dealt with in section 5.

3.1.1 Estimating energy supply and use tables

In general terms, the process applied in DESIRE resembles the one followed in CREEA, which is documented in detail in Kuenen et al. (2013). Thus, the procedure can be summarised in the five steps depicted in Figure 3.1.

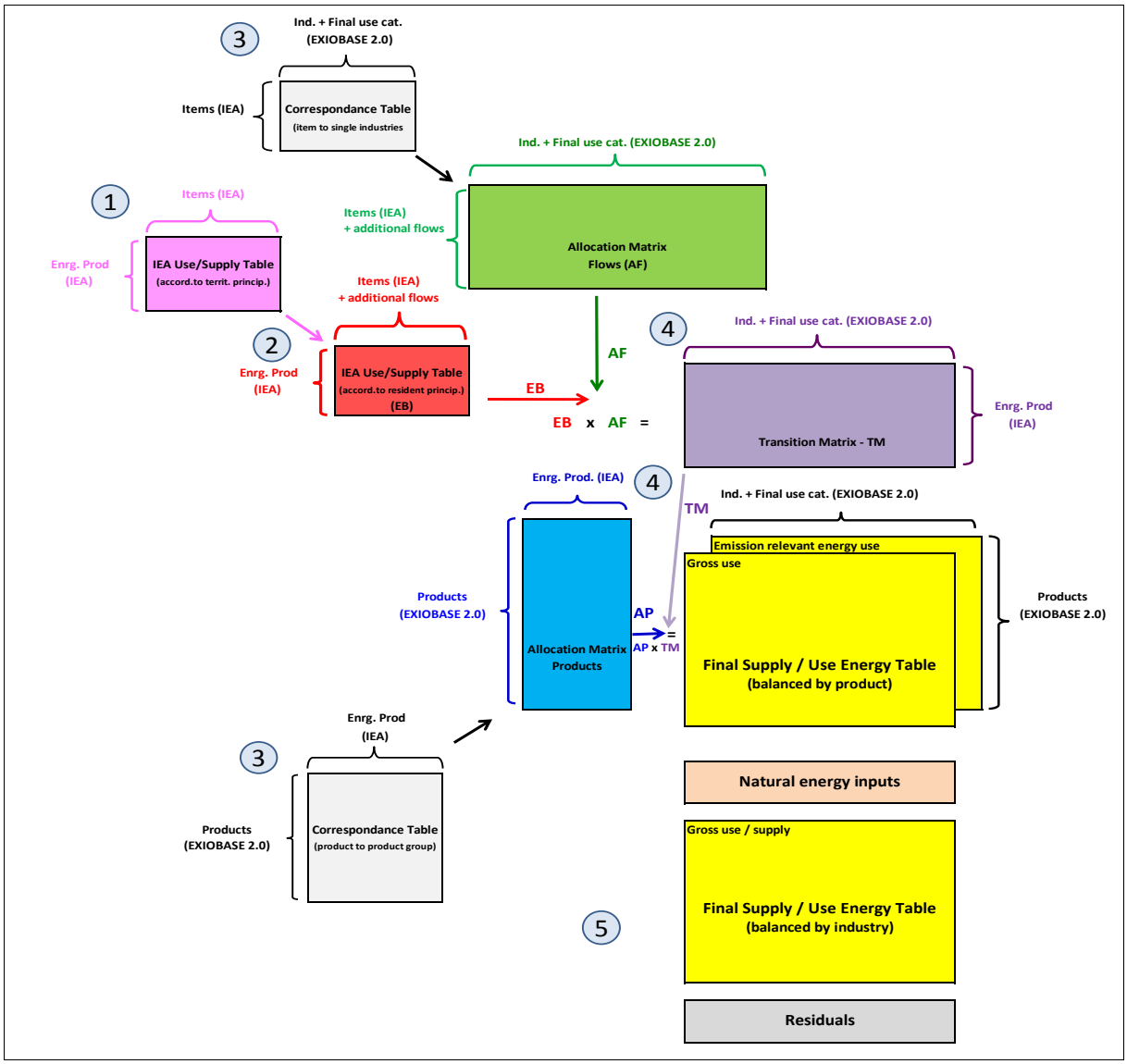

Figure 3.1: Simplified approach for the generation of E-SUTs[1] [2]

The operation steps are arranged in five consequential tasks. An overview of these is given in the following paragraphs.

Task 1 "From IEA - Energy Balances to Raw Gross Energy Tables"

This task consists in the compilation of the IEA energy balances by country / rest of the world region and their split into Raw Gross Energy Tables. The first step is rather straightforward for single countries. For the "Rest of World" regions, the import and export data is modified to:

- remove the intra-trade of energy products
- balance the trade of energy products at world level

[1] The format of the tables might differ depending on whether the use tables or the supply tables are being generated. Nonetheless, the logic of the process is the same in both cases.

[2] The figure provides a simplification of the process. The allocation of neither the supply, nor the use is done in a single step as described later.

While the removal of intra-trade is done by modifying the import and export vectors of the RoW regions, the mismatch between global imports and exports is allocated to the statistical differences in these regions, which results in a completely balanced system.

The second step requires splitting the IEA energy balances into the supply and the use of energy flows. While in the original energy balances the supply and the use are presented in a single table, the Raw Gross Energy Tables show use and supply separately in two different tables, which eases their use in the next tasks.

Task 2 "Bridging from the `Territory Principle´ to the `Residence Principle"
Task 2 refers to the table adjustments necessary due to the differing analytical boundaries between the `territory principle´ - as applied in the energy balances - and the `residence principle´ - as applied in the energy accounts. The country boundaries are conceptually different for these two principles, especially regarding the energy consumption by residents in foreign territory and the one of non-residents in the domestic territory.

As the energy statistics are the starting point for the generation of the energy accounts, bridging is necessary to compensate the differences between the two approaches. The main calculations necessary for this bridging are located in the accounting area "Transport" due to the internationality of this activity. In many cases, this causes that the "means of transport" (road vehicles, ships, aircrafts, etc.) fill up fuel in countries different to those where they are registered (by the corresponding residents). Further, adjustments have also been made to the item "Fishing" in order to better represent the use of fuels related thereto by residents.

The following transport types are affected:

- International road transport[3];
- International maritime transport, which is directly associated with the deliveries to the international marine bunkers;
- International air transport, which is directly associated with the deliveries to the international aviation bunkers; and
- Fishing.

The energy products that are mainly involved within these transport activities are several secondary energy products produced from crude oil as well as liquefied petroleum gas and natural gas. The bridging adjustments for the use of these energy products were done based on world transport models built based on several auxiliary datasets described in the next section. For simplification, quantities of other energy products have been assigned using the same shares for which either the product quantities were negligible, or availability of auxiliary data was insufficient.

It should be pointed out that the aim of the models is not to calculate precisely the energy use of each of these items for each country, but to provide distribution shares

[3] The term "international road transport" applies to fuelling in a country other than the vehicle's country of registration.

that are multiplied by the total energy uses given by the IEA energy balances. A detailed description of the models is given Kuenen et al. 2013.

The results of the models lead to a modification in the Raw Gross Energy Tables of the imports and exports of the fuels used in internationally transport and fishing activities. All in all, 89 energy flows form the final version of the Raw Gross Energy Tables.

Task 3 "Generation of Correspondence Tables"
Task 3 describes, on the one hand, the correspondence between the items (i.e. groups of industries and final use categories as represented in the IEA balances) of the Raw Gross Energy Tables (both supply and use, respectively) and the "single industries and final use categories" as classified within Exiobase. The description specifies which relations are trivial one-to-one relations and which ones are of different nature. In this way, it frames the detailing descriptions of task 4.

On the other hand, this task also describes the assignment of the energy products listed in the IEA extended balances to each product group of the product classification as used within Exiobase.

Task 4 "Allocation of Items in the Raw Gross Energy Tables to Exiobase Industries and Final Use Categories"
Task 4 deals with the allocation of the 89 items of the final Raw Gross Energy Tables (both supply and use) to the corresponding single industries and final use components of the Exiobase classification. Likewise, the 63 energy products also have to be allocated to the 200 products represented in Exiobase.

The general allocation approach for the 89 items is based on the following formula:

$$S \times AMS = TMS$$

$$U \times AMU = TMU$$

where:

S: Extended supply table with dimension 63 x 5607 as represented in Figure 2.1. This matrix is obtained by diagonalizing the 63x1 vector corresponding to each item.

U: Extended use table with dimension 63 x 5607 as represented in Figure 2.1. This matrix is obtained by diagonalizing the 63 x 1 vector corresponding to each item.

AMS: Allocation matrix for supply flows with dimensions 5607 x 175 as represented in Figure 2. This matrix is obtained based on the correspondence tables generated in Task 3 and auxiliary data.

AMU: Allocation matrix for use flows with dimensions 5607 x 175 as represented Figure 2.1. This matrix is obtained based on the correspondence tables generated in Task 3 and auxiliary data.

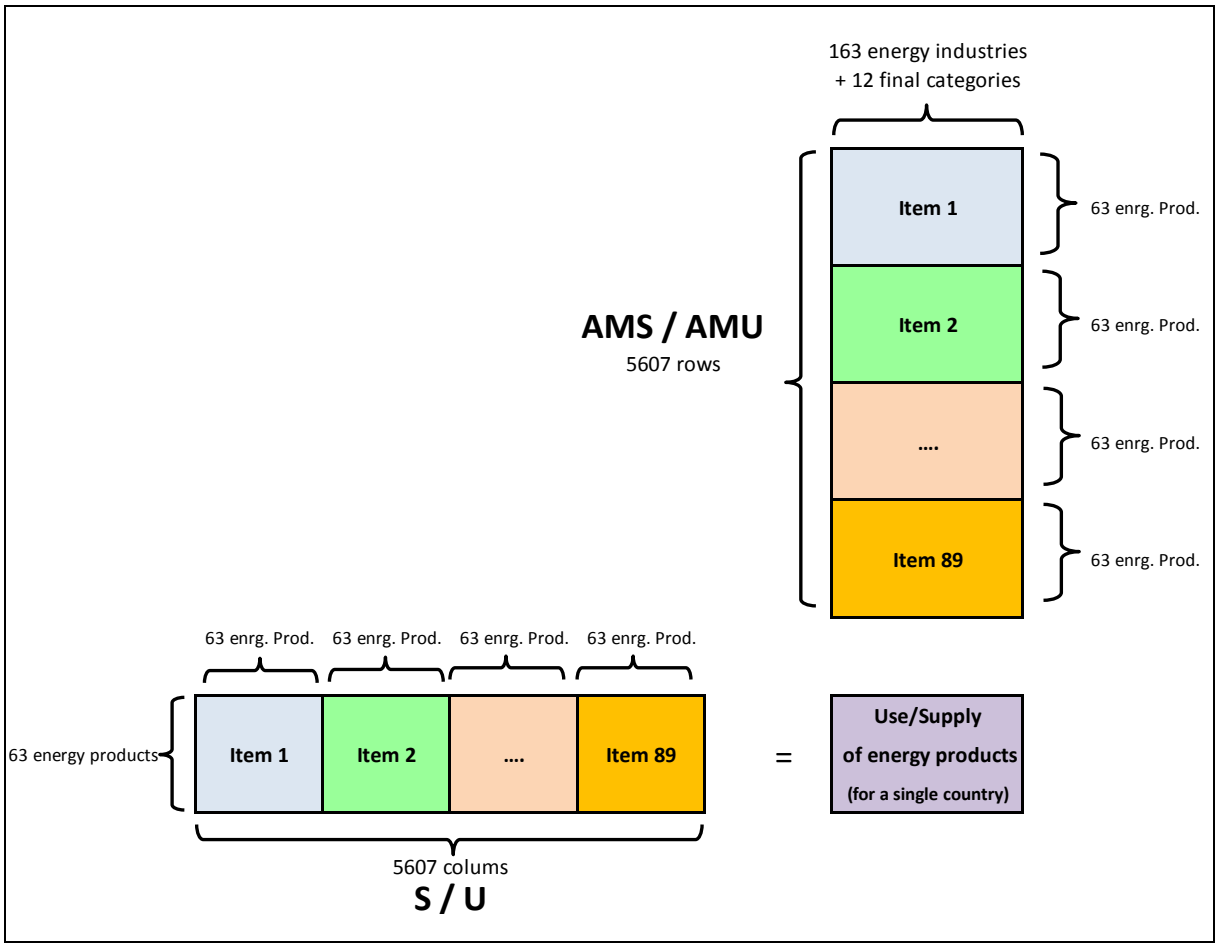

Figure 2.2: Representation of the allocation of IEA items and products to CREEA IFU and product categories

The result is a single 63 x 175 matrix that represents either the use or the supply of energy products.

Each of the submatrices represented in the element AMS and AMU are single allocation matrices that have been generated based on the correspondence tables generated in Task 3. However, their application is subject to the adequately use of the general allocation approach and the data sets to be used for the calculation of the weighting factors (allocation coefficients).

The exact allocation sequence and the approach that is used for the calculation of the allocation weighting factors are relevant for an accurate breakdown of the aggregated items.

The application of a certain approach to generate an allocation submatrix depends directly on the availability of data on auxiliary parameters that are required for the breakdown of the aggregated items. The approaches used for the allocation of the energy uses and supplies can be grouped in six main classes, each of which is described in previous reports:

a) one-to-one allocation;

b) based on data from life cycle inventory databases;

c) based on monetary data;

d) based on allocation matrices for road transport related items;

e) related to the use / supply by electricity and CHP plants;

f) based on data on specified supply of energy products

Two main matrices result from this exercise, the gross energy supply table (matrix 63 x 175) and the gross energy use table (matrix 63 x 175). The 63 energy products as given by the IEA have to be adapted to the Exiobase classification (200 products) with the aid of the correspondence tables in two steps.

First, the energy products "Industrial waste", "Municipal waste (renewable)", "Municipal waste (non-renewable)" and "Primary solid biomass" represented in the two main matrices resulting from Task 4 have to be disaggregated into their corresponding Exiobase products, which results in two 82 x 175 matrices. For this, monetary coefficients are used. Since the rest of the IEA products are mapped one to one to Exiobase products, a mere correspondence table is enough to obtain the 200 x 175 supply and use tables.

Besides the gross supply and use tables, the emission relevant energy use tables have also been generated. The former is the basis for calculating the combustion related air emissions. To compile this table, all the items of the IEA balances have been classified according to a dummy distribution that indicates whether the products of a specific item are combusted or not.

Task 5 "Generation of the final Use and Supply Energy Tables"
The last task comprises the preparation of the E-SUT according to the SEEA framework and the data arrangements based on the analytical requirements of DESIRE. In the SEEA Energy manual the physical flows are organised into three broad groups (energy from natural inputs, energy products and energy residuals) according to whether they represent a supply of energy or a use of energy. The conventions to generate them are explained in UN (2013), Eurostat (2014) and Kuenen et al. (2013).

This procedure ensures the linkage between the generated E-SUT and the energy accounts derived from them with the monetary SUTs of Exiobase. At the same time, the set of final tables is generated including the representation of emission relevant energy use, gross use, as well as the total supply table.

3.1.2 Data sources

The main data sources for the generation of the E-SUT and the environmental extension "Energy" are country-specific sets of physical and monetary data. The data can be distinguished according to its usage into:

a) primary data (core data), i.e. physical data on the use and supply of energy, and

b) secondary data (auxiliary data), mainly diverse physical and monetary data.

The primary data source on the supply and use of energy are the IEA extended energy balances (IEA 2012a, 2012b). They provide data on the use and supply of 63 energy products by 85 items for a country or world region. All the countries covered in DESIRE have their own energy balance. The balances for the RoW regions have been built by adding the balances of the countries included in each RoW region, and removing the intra-trade using data from the BACI database.

Beside the need of physical data on the use and supply of energy, there is an extensive need for auxiliary datasets. These auxiliary data are necessary to bridge the energy balances and the energy accounts and to split the aggregated items of the IEA energy balances.

a) The first group of data contains physical data (in physical units as joule, tonnes, etc.) on auxiliary parameters. It essentially comprises additional data on energy, data on resource extraction, data on production volume and consumption quantities, and data on life cycle inventories of several products. Due to resource constraints, this data is the same used in CREEA and thus corresponds to the year 2007.

b) The second group of data contains monetary data (in euro or national currencies) on auxiliary parameters. This data basically refers on intermediate use as well as on total production and final consumption of several goods and services. They were mainly extracted from the monetary supply and use tables of EXIOBASE 2.0 and thus refer only to the year 2007.

c) The third group comprises additional auxiliary data that has been used for very the transport models used to bridge the gap between the territory and residence principle.

The following table provides an overview on the main data sets used as auxiliary data including the sources (Table 3.1).

Table 3.1: Overview of the auxiliary data, their purpose, type and source

Parameter	Type	Database	Source
Energy supply and use	Electricity and heat use and supply by producer and energy product	Extended Energy Balances of OECD and Non-OECD countries - Beyond 2020	International Energy Agency (IEA 2012a, 2012b)
Physical and monetary outputs of product groups	Output and production structures for 2007	Data gathered by several CREEA partners	Documented in Kuenen et al. 2013 and other CREEA deliverables
Life cycle inventories	Life cycle inventory database Library for life cycle data	Ecoinvent v.2.2 "PROBAS" (Prozessorientierte Basisdaten für Umweltmanagement-Instrumente)	Swiss Centre for Life Cycle Inventories Federal Environment Agency (UBA) and Öko-Institut
Traded quantities and prices of energy	Trade database	BACI	CEPII

Parameter	Type	Database	Source
products			
Marine fleet per nationality of the owner	Annual fleet statistics	World Fleet Statistics 2007 (various editions)	Lloyd's Register Fairplay
Average fuel consumption per ship type	GHG Study	Second IMO GHG Study 2009	International Maritime Organisation (IMO)
Aircraft fleet, air traffic, etc.	Annual air transport statistics	World Air Transport Statistics (various editions)	International Air Transport Association (IATA)
Fuel consumption per aircraft types	GHG reporting guidelines	Emission Inventory Guidebook 2013	EMEP/EEA
Bridge tables for road transport	CO2 emissions from residents in foreign territory CO2 emissions from non-residents in the domestic territory	Eurostat's database	Eurostat

3.1.3 Changes from previous editions

Despite the overall procedure is very similar to the one documented by Kuenen and colleagues (2013), the generation of time series of E-SUTs in DESIRE led to slight differences in some of the processes.

In this context, two main differences arise: one that refers to the activity data used for the allocation and the other related to the transport models used to bridge the territory/residence gap.

As for the first one, the change refers to the decision to use of 2007 secondary physical and monetary activity data for the allocation procedure in DESIRE. This will mainly affect the distribution of specific energy flows in certain industries, but is thought to have a limited effect on macro-level results obtained from Exiobase, for the energy flows that are allocated are country and time specific.

The second difference refers to the transport models built to bridge the energy balances to the residence principle. These have suffered some changes in comparison to the description provided in previous editions (see Table 2.3).

Table 2.3: Differences in transport models in CREEA and DESIRE

Model	Approach	CREEA	DESIRE
Road	Build world road transport model including data on tourism and international freight transport statistics to determine the difference between territory and residence principles Constraint the EU country results	Year: 2007	Years: 1995-2010
		Full model	For EU countries: data from Eurostat's bridge tables has been used for the available countries. This is then subtracted from the EU

	based on the bridge tables from Eurostat Set the territory/residence difference to 0 in islands and big countries with limited road access		totals (thus considering EU as a closed system in terms of gasoline and diesel exchange by road) and the result is allocated to the remaining EU countries based on the size of their road transport sector (from the IEA). For non-EU countries: the territory/residence difference has been assumed to be 0.
Air	Movement data for international flights by type of plane and country is combined with specific fuel consumption data to generate shares that allow splitting the use of fuel from international air bunkers	Year: 2007	Years: 1996, 2000, 2001, 2003, 2007 and 2009 The rest is intra- and extrapolated
		Fuel consumption data by type of plane was taken from EEA (2009) Fleet grouped in 46 plane types	Fuel consumption data by type of plane was taken from EEA (2013) Fleet grouped in 103 plane types
Maritime	Fuel consumption data from an ILO study by type of ship is combined with fleet statistics by nationality of the owner to generate shares that allow splitting the use of fuel from international maritime bunkers	Year: 2007	Years: 2000, 2002, 2004, 2007, 2008 and 2010 The rest is intra- and extrapolated
		Fuel consumption data by type of ship	Fuel consumption data by type and size of ship
Fishing	Fuel consumption data from an ILO study by type of ship is combined with fleet statistics by nationality of the owner	Year: 2007	Years: 2000, 2002, 2004, 2007, 2008 and 2010 The rest is intra- and extrapolated
		Fuel consumption data by type of ship	Fuel consumption data by type and size of ship

3.2 Emissions

The TNO Emission Assessment Model (TEAM) (Pulles et al. 2007) has been used to quantify emissions to air based on activity rates and emission factors. The initial calculation of emissions has been completed for all emissions to air considered as extensions. As a next step, these emissions will be converted to emission factors for each of the industries and products considered in the framework of DESIRE, and for each year and substance. This section describes the emission model that has been used to calculate the emissions and displays some results.

3.2.1 Emission model description

The model consists basically of a large set of emission factors, and choses the best available emission factor for each activity to achieve a full set of emissions for all relevant substances. Emissions are calculated by applying the following equation:

$$E_{substance} = \sum_{activities} \left(AR_{activity} \times \sum_{technologies} \left(EF_{technology,substance} \times P_{technology} \right) \right)$$

while at the same time ensuring that for all *activities* and all *t*:

$$\sum_{technologies} P_{activity,technology}(t) = 1,$$

where:

- $E_{substance}(t)$ The emission of a certain *substance* at time *t*
- $AR_{activity}(t)$ The activity rate for a certain *activity* at time *t*
- $P_{activity,technology}(t)$ The penetration: fraction of the *activity* performed using the specific *technology*, at time *t*
- $EF_{technology,substance}$ The emission factor, an attribute of the selected technology, which determines the linear relation between the activity rate and the resulting emission of a certain *substance*, using a specific *technology*

The various parameters in the equation have a different nature:

- The changes in the structure and production of the economy are taken care of by the activity variable. The activity data contain information on production rates, but also separate sources of emissions like households and various types of transport.
- Technologies determine the emission factors: each technology has a set of emission factors, one for each relevant substance, which describe the relation between the intensity of the activity and the resulting emission from the activity.
- The penetration determines the selection of technologies for a certain activity. The penetration is defined as the fraction of a technology used for estimating the emissions from an activity.

The core structure of the model is shown in Figure below.

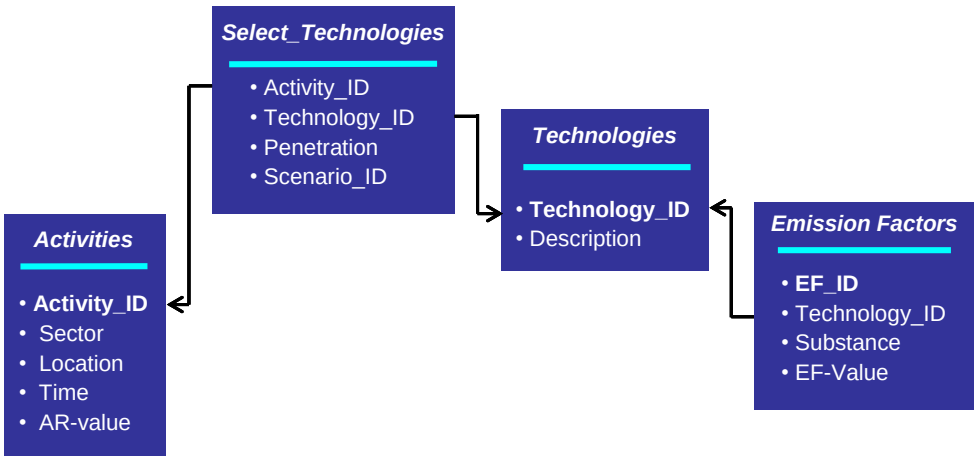

Figure 3.3: The core structure of the TNO Emission Assessment Model (TEAM)

The emission inventory in TEAM is compiled in a 3-step procedure:

- The "Activities" table is filled with activity rates dependent on the sector and with spatial and temporal component. This table represents the economic aspect, similar to the classical inventory approach. The activities table may be preceded by a "Sources" table, in which the sector is further specified (source description, fuel type (if applicable)).
- The technological aspect is represented by the "Technologies" table, which is filled with relevant technologies that can be used to perform the activity. In the "Emission Factors" table, each technology has a set of emission factors, one for each relevant substance.
- The "Select_Technologies" table represents the behavioural aspect and chooses one or more technologies for each activity, each weighted with its penetration rate. The model has also the opportunity to assess various scenarios, but this function is not used in the framework of DESIRE.

As soon as one or more technologies have been chosen for each activity (i.e. the "Select_Technologies" table has been filled), the emissions may be calculated by applying the equation given in the beginning of this section. Depending on the level of detail required for the resulting emissions of each substance, a summation over technologies and/or activities is made.
The TEAM model uses the "sector classifications" as used in the official air emission reporting requirements (following the territory principle).

3.2.2 Emission factors

In constract to earlier projects where the model has been applied (e.g. EXIOPOL, CREEA), a time series of 17 years is studies instead of a single year. Since one of the main goals of DESIRE is to see the changes in the EEMRIO over time, it is important to capture the main changes in emissions, not only due to changes in activity rates (e.g. higher energy consumption) but also changes due to technological improvements (e.g. cleaner engines or additional filters).
Unfortunately this information is not available for all countries and years considered in this study. A few options have been considered to overcome this issue:

- Make the inventory only for the countries for which the information is (at least partly) available (e.g. EU27) and extrapolate to other countries.
- Introduce emission factors dependent on country and year from other sources, replacing existing emission factors but keeping a consistent approach in both space and time.

Because DESIRE wants to show the changes in time, the consistency is an important prerequisite. Therefore, we have chosen to use the second option and implement emission factors per country and year in the TEAM model. These emission factors are calculated per pollutant, sector, country and year based on the output of the GAINS model (IIASA, 2013; Amann, 2009). This model is a bottom-up model estimating emissions and impacts of policy measures on emissions and impacts (for both climate change and air pollution), which is widely used for assessment of air pollution and climate change on regional level, especially in Europe. Versions exist for Europe and parts of Asia. In terms of countries covered in DESIRE, only Mexico, Brazil and South Africa are not covered by GAINS. For these countries but also for the RoW (rest of the world) country assumptions have been made regarding their technology level, by selecting similar countries or taking weighted averages of all available countries.

In terms of temporal coverage, GAINS covers 1990-2030 in 5-yearly intervals, where future years are available using different scenarios. In some cases data prior to 2000 are not available, in this case emission factors are assumed to remain constant in this time period. Within the 5-yearly intervals, interpolations were used to estimate emission factors for the years in between.

3.2.2.1 Road transport sector

One of the most important sources of air pollution is road transportation. Since for road transport a lot of information is available on technologies and emissions, a more detailed model has been elaborated for its emissions, and emission factors are calculated separately for each country, fuel and pollutant based on the detailed data available.

As for the other combustion sources, the IEA values have been used as the baseline (IEA flow ROAD). For each country and each fuel, the energy use in road transportation has been disaggregated to a detailed level by using data from TML (Transport and Mobility Leuven) and their TREMOVE model (TML, 2011) for Europe.

In short, the approach followed for road transportation:

- For the activity data, TREMOVE data are used to disaggregate IEA energy use by fuel and country to the most detailed level (including vehicle category, vehicle type, vehicle technology and road type). For countries not included in TREMOVE, energy consumption from IEA is disaggregated to the same level as TREMOVE by assuming for each country a representative distribution based on the available distributions from the countries included in TREMOVE. For instance, for the US an average distribution of the EU15 (western Europe) has been assumed, while for China the average distribution of the non-EU countries in TREMOVE has been assumed.
- Emission factors at the same level of detail are available from another FP7 project TRANSPHORM (focusing on the impact of transport of human health) and are developed by the University of Thessaloniki (AUTH, 2012). These emission factors are the state-of-the-art in Europe. The emission factors cover all relevant pollutants from road transport, including the non-exhaust emissions from gasoline evaporation and from wear. These emission factors are country specific as well and only available for EU Member States. For all countries not considered in this database, an average of the EU emission factors have been assumed (not crucial since they are already technology dependent). The emission factors are originally given in g/km. The conversion to kg/TJ has been made by taking the ratio of the CO2 emission factor from the emission factors (in g/km) and the CO2 emission factor from the IPCC Guidelines (in kg/TJ), and apply this to each emission factor.
- After preparing both the activity data (for all countries in the world), and the emission factors (also for all countries in the world), the two have been combined and the emissions have been calculated, whereafter the data have been aggregated over vehicle categories, types and technologies to receive the total activity (in TJ) and emission (in kg) per pollutant for road transport by fuel and country. By dividing these two, the implied emission factor for the specific country is obtained.

Using this information, a detailed estimate of the emissions from road transport has been made for each country.

3.2.3 Activities

Apart from the emission factors, also activity variables are needed for all relevant sources, for each country and also for each year.
Energy consumption has been taken from the 2013 version for the IEA energy statistics, which includes all data up till 2011 plus some preliminary data for 2012. Data have been converted to TJ and the emission factors have been applied to these data for each country and for each year. Some countries which are only available as country groups in the IEA dataset have been disaggregated using population statistics.

For non-combustion sources, other data have been used. Statistics on the production of industrial commodities are being collected by project partners (see section 3.4 on materials), which will be used for calculating emissions with TEAM.
For activities which are not part of the work on material flows, activity data are from the IIASA GAINS model have been used instead.
Where data were not available for all years, interpolations were used to estimate emissions for missing years.

3.2.4 Result

The resulting dataset contains air emissions for all relevant substances (a total of 25 different substances are included). Most emissions are declining in time in developed countries, while in developing countries emissions are largely increasing. Two illustrative examples show the resulting emission trends are shown in the figures below. Figure 3.4 shows total CO2 emissions by country. It is shown that for most countries only small changes occur, but CO2 emissions from China tripled between 1999 and 2011. Figure 3.5 shows NOx emissions for the same countries, but now on a relative scale (with 2005=1). It is shown that for most developed countries emissions have decreased in time, however for China and India emissions have significantly increased (a factor 2 or more compared to 1995).

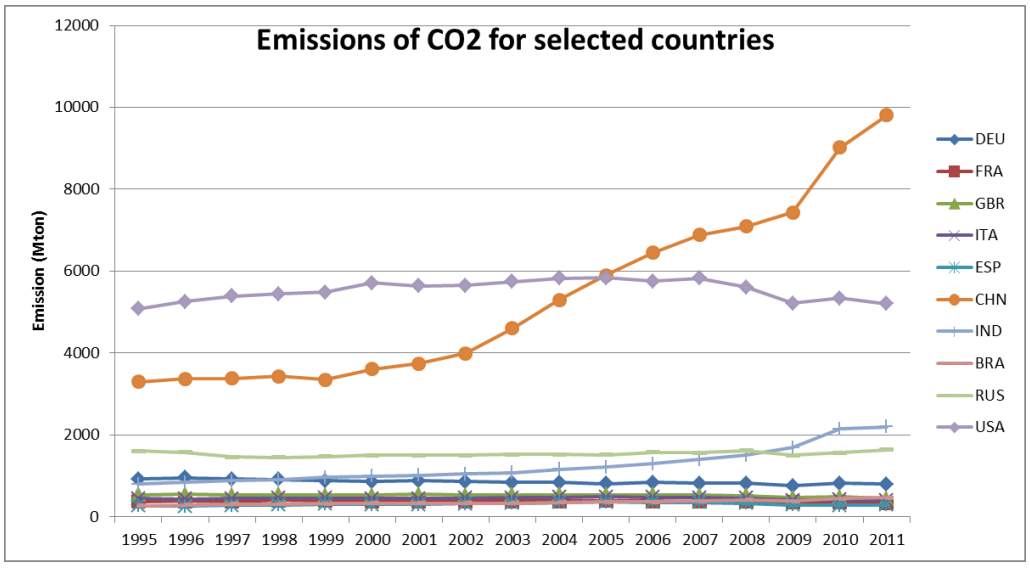

Figure 3.4: Trend in CO2 emissions for selected countries

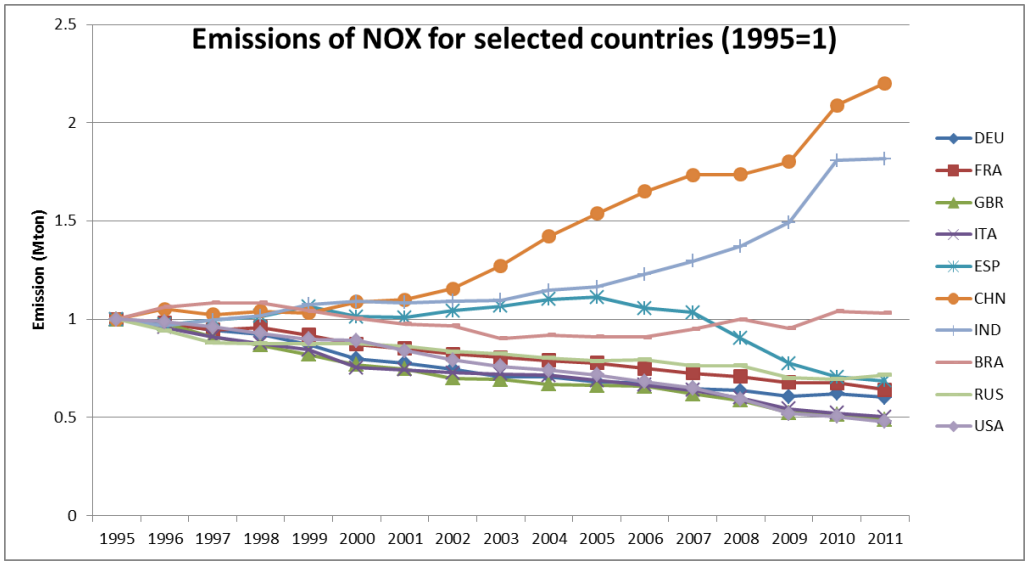

Figure 3.5: Trend in NOX emissions for selected countries (relative, 2005=1)

3.2.5 Next steps

Next steps in the preparation of air emissions is to assign all emissions calculated to the correct products and industries as they are defined in DESIRE. For air emissions from combustion, the assignment will be towards the flows and products as defined in the IEA energy statistics. For non-combustion, a direct link between emission sector and DESIRE product will be established.

3.3 Water

3.3.1 Data collection

For the compilation of the water use/consumption extensions for the EXIOBASE set up and compiled in the EXIOPOL and CREEA projects, the main data sources used were the ETH dataset (Pfister and Bayer, 2013; Pfister et al., 2011) and the Water Footprint dataset (Mekonnen and Hoekstra 2011) for agricultural water consumption and the WaterGAP model (Flörke et al. 2013) for industrial water use/consumption. These databases are currently among the most comprehensive global databases with the agricultural water consumption datasets encompassing a vast amount of agricultural categories and the WaterGAP data set covering a large number of livestock categories as well as manufacturing sectors – the latter being an area where special requirements of an MRIO system meet the general poor data coverage situation. In DESIRE, the same basic data sources on water data will be applied.

The water use/consumption extensions in the EXIOBASE encompass the following categories (see table 3.3). They include 13 categories for water consumption in agricultural activities for both green and blue water, 12 categories of blue water consumption in livestock production, 7 blue water consumption categories in aggregated

manufacturing sectors and 2 related to electricity production. For the 7 manufacturing and the 2 electricity production sectors, also data on withdrawal of blue water are provided.

For the use in the EXIOBASE the data for the years 2000 (EXIOPOL) and 2007 (CREEA) were aggregated or disaggregated according to the EXIOBASE water extension classification and allocated to the different sectors and products. The same procedure is now being applied for the time period 1995-2011. With regard to disaggregation, the physical output data generated in the PSUTs are used to allocate the water use in the 7 aggregated manufacturing sectors to the detailed EXIOBASE manufacturing sectors (the same for the electricity sectors).

Table 3.3: Classification of water extensions in the EXIOBASE

Code	Extension
WCB_1.1	Water Consumption Blue - Agriculture - rice
WCB_1.2	Water Consumption Blue - Agriculture - wheat
WCB_1.3	Water Consumption Blue - Agriculture - other cereals
WCB_1.4	Water Consumption Blue - Agriculture - roots and tubers
WCB_1.5	Water Consumption Blue - Agriculture - sugar crops
WCB_1.6	Water Consumption Blue - Agriculture - pulses
WCB_1.7	Water Consumption Blue - Agriculture - nuts
WCB_1.8	Water Consumption Blue - Agriculture - oil crops
WCB_1.9	Water Consumption Blue - Agriculture - vegetables
WCB_1.10	Water Consumption Blue - Agriculture - fruits
WCB_1.11	Water Consumption Blue - Agriculture - fibres
WCB_1.12	Water Consumption Blue - Agriculture - other crops
WCB_1.13	Water Consumption Blue - Agriculture - fodder crops
WCG_1.1	Water Consumption Green - Agriculture - rice
WCG_1.2	Water Consumption Green - Agriculture - wheat
WCG_1.3	Water Consumption Green - Agriculture - other cereals
WCG_1.4	Water Consumption Green - Agriculture - roots and tubers
WCG_1.5	Water Consumption Green - Agriculture - sugar crops
WCG_1.6	Water Consumption Green - Agriculture - pulses
WCG_1.7	Water Consumption Green - Agriculture - nuts
WCG_1.8	Water Consumption Green - Agriculture - oil crops
WCG_1.9	Water Consumption Green - Agriculture - vegetables
WCG_1.10	Water Consumption Green - Agriculture - fruits
WCG_1.11	Water Consumption Green - Agriculture - fibres
WCG_1.12	Water Consumption Green - Agriculture - other crops
WCG_1.13	Water Consumption Green - Agriculture - fodder crops
WCB_1.14	Water Consumption Blue - Livestock - dairy cattle
WCB_1.15	Water Consumption Blue - Livestock - nondairy cattle
WCB_1.16	Water Consumption Blue - Livestock - pigs
WCB_1.17	Water Consumption Blue - Livestock - sheep
WCB_1.18	Water Consumption Blue - Livestock - goats
WCB_1.19	Water Consumption Blue - Livestock - buffaloes
WCB_1.20	Water Consumption Blue - Livestock - camels
WCB_1.21	Water Consumption Blue - Livestock - horses
WCB_1.22	Water Consumption Blue - Livestock - chicken
WCB_1.23	Water Consumption Blue - Livestock - turkeys
WCB_1.24	Water Consumption Blue - Livestock - ducks
WCB_1.25	Water Consumption Blue - Livestock - geese
WCB_2.1	Water Consumption Blue - Manufacturing - food products, beverages and tobacco
WCB_2.2	Water Consumption Blue - Manufacturing - textiles and textile products
WCB_2.3	Water Consumption Blue - Manufacturing - pulp, paper, publishing and printing
WCB_2.4	Water Consumption Blue - Manufacturing - chemicals, man-made fibres
WCB_2.5	Water Consumption Blue - Manufacturing - non-metallic, mineral products
WCB_2.6	Water Consumption Blue - Manufacturing - basic metals and fabrication of metals
WCB_2.7	Water Consumption Blue - Manufacturing - other manufacturing
WCB_3.1	Water Consumption Blue - Electricity - tower
WCB_3.2	Water Consumption Blue - Electricity - once-through
WCB_4	Water Consumption Blue - Domestic - domestic Water Consumption Blue
WWB_2.1	Water Withdrawal Blue - Manufacturing - food products, beverages and tobacco
WWB_2.2	Water Withdrawal Blue - Manufacturing - textiles and textile products
WWB_2.3	Water Withdrawal Blue - Manufacturing - pulp, paper, publishing and printing
WWB_2.4	Water Withdrawal Blue - Manufacturing - chemicals, man-made fibres
WWB_2.5	Water Withdrawal Blue - Manufacturing - non-metallic, mineral products
WWB_2.6	Water Withdrawal Blue - Manufacturing - basic metals and fabrication of metals
WWB_2.7	Water Withdrawal Blue - Manufacturing - other manufacturing
WWB_3.1	Water Withdrawal Blue - Electricity - tower
WWB_3.2	Water Withdrawal Blue - Electricity - once-through
WWB_4	Water Withdrawal Blue - Domestic - domestic Water Withdrawal Blue

The WaterGAP model currently covers a time period 1950-2010, with most data being available since 1990 and earlier years being estimated. The University of Kassel provided the EXIOPOL/CREEA team with the data for the years 2000 and 2007 and for DESIRE also provide the data for the missing years (1995-2010/2011).

Regarding the Water Footprint data, we face a similar situation: currently published data cover the period 1996-2005 – however, as an average value, with the data provided for 2007 being upscaled in the course of the CREEA project with data on agricultural production for the year 2007 in comparison to the average production in 1996-2005. We applied a similar approach for extending the data to the years 1995-2011. Hence, the data was up- and downscaled from the available Water Footprint data set with agricultural production data. Given the ongoing scientific collaboration with the University of Twente in the course of the CREEA project the best suited procedure was discussed and decided. A first data set (1995-2011) for the Water Footprint data was ready in the first half of 2014. However, University Twente is planning to set up long term and annual Water Footprint calculations from this year onwards. Hence, we envisage delivering a revised and improved data set by the end of 2014.

3.3.2 Status of data work and timeline for completion

The data compilation works regarding the water extensions have generally been more complicated than anticipated – also due to access issues to data. The calculation of the time series for the water extensions can be divided in two parts. The first is the gathering of the needed input data which then is merged to the EXIOBASE water classification by using different algorithms und functional forms in a second step. The present status is that the input data for these calculations has only partly been provided so far. For example, work is still ongoing in the WP5 team to compile the set of physical production data, which is required to allocate water use to the various industrial sectors. The algorithms and functional forms for merging them into the EXIOBASE format are almost finished, so once the input data become available, the procedures can be run quickly. Discussions about how to calculate the water footprint of grazing are still going on.

A first version of the water extension file has been completed, covering the period of 1995-2010. However, we want to emphasize that the provided time series cannot be seen as a valid data set yet and should be regarded as a documentation of the current status of work.

The following issues need to be resolved specifically within the various sections of the water accounts:

Agricultural water use:
1) Check with data (year 2007) from the CREEA-project (at the moment spot tests show large differences for green / blue water consumption of fodder crops. Calculation methods used need to be compared)
2) Calculation method of Water Footprints for grazing has to be discussed and further developed

Electricity water use:
1) Comparison of current data with final data from EXIOBASE 2.2 version: spot tests show that values (year 2007) are similar, still, further comparison and validation needed

2) Cooling shares for Croatia are still missing and need to be integrated
3) Physical-flow data has to be updated

Industrial water use:
1) Comparison with EXIOBASE 2.2 version: spot tests show that values (year 2007) for livestock are quite similar, still, further comparisons are needed. Spot tests show that values (year 2007) for manufacturing time series are identical.
2) Physical-flow data has to be updated

By October 2014 the dataset covering the full time series of 1995-2011 should be available, with a final revised data set in December 2014.

3.4 Material

3.4.1 Data collection

For the compilation of the material extensions for the EXIOBASE version 3.0, the main data source for the environmental extensions of "material extraction" is the SERI/WU Global Material Flow Database (available at www.materialflows.net, SERI and WU, 2014).

The SERI/WU MFA database is one of the most comprehensive global MFA databases currently available and encompasses more than 300 different types of materials and more than 200 countries. For the use in EXIOBASE the data are aggregated according to the EXIOBASE material extension classification.

The material extensions in EXIOBASE version 2.2 encompassed categories given in table 3.4 (23 material extraction categories are related to biomass, 10 are extractions of metal ores, 9 categories of industrial and construction materials are distinguished, as well 6 categories of fossil fuels).

Table 3.4: Classification of material extensions in the EXIOBASE 2.2

Code	Extension	Code	Extension
DEU_1.1.1	Rice	DEU_2.1	Iron ores
DEU_1.1.2	Wheat	DEU_2.2.1	Bauxite and aluminium ores
DEU_1.1.3	Other cereals	DEU_2.2.2	Copper ores
DEU_1.1.4	Roots and tubers	DEU_2.2.3	Lead ores
DEU_1.1.5	Sugar crops	DEU_2.2.4	Nickel ores
DEU_1.1.6	Pulses	DEU_2.2.5	Tin ores
DEU_1.1.7	Nuts	DEU_2.2.6	Uranium and thorium ores
DEU_1.1.8	Oil crops	DEU_2.2.7	Zinc ores
DEU_1.1.9	Vegetables	DEU_2.2.8	Precious metal ores
DEU_1.1.10	Fruits	DEU_2.2.9	Other metal ores
DEU_1.1.11	Fibres	DEU_2.3	Chemical and fertilizer minerals
DEU_1.1.12	Other crops	DEU_2.4	Clays and kaolin
DEU_1.2.1	Straw	DEU_2.5	Limestone, gypsum, chalk, dolomite
DEU_1.2.2	Other crop residues	DEU_2.6	Salt
DEU_1.3.1	Fodder crops	DEU_2.7	Slate
DEU_1.3.2	Biomass harvested from grasslands	DEU_2.8	Other industrial minerals
DEU_1.4.1	Grazing	DEU_2.9	Building stones
DEU_1.5.1	Timber	DEU_2.10	Gravel and sand
DEU_1.5.2	Other extractions	DEU_2.11	Other construction minerals
DEU_1.6.1	Marine fish	DEU_3.1	Hard coal
DEU_1.6.2	Inland water fish	DEU_3.2	Lignite/brown coal
DEU_1.6.3	Other aquatic animals	DEU_3.3	Crude oil
DEU_1.6.4	Hunting	DEU_3.4	Natural gas
		DEU_3.5	Natural gas liquids
		DEU_3.6	Peat for energy use

It is currently being discussed in the WP 5 team, whether this list will be revised and shortened. For example, it is suggested to exclude categories, for which no material extraction data are available at the global level (e.g. DEU_1.6.4 Hunting). Furthermore, some of the biomass-related extensions could be merged, in order to better fit the EXIOBASE product groups. A final decision on the list of material extensions will be taken in autumn 2014 and implemented in the final data set on material extensions.

In the following, we provide a short overview of the data collection procedures applied for each major material category:

3.4.1.1 Biomass (DEU_1)

Data for agricultural production was retrieved from the FAO database (FAO, 2014). In alignment to current EW_MFA guidelines (EUROSTAT, 2013) data for fodder crops were transformed to a standard of 15% water content, on the basis of moisture contents as published by Krausmann et al. (2009).

For the estimation of biomass directly taken up by animals (grazing), we applied a demand-based approach, which calculates grazing demand as the difference between (a)

feed demand and (b) the supply of market and non-market feed (with the latter including fodder crops and crop residues) in each country. The resultant amount of biomass is called the "grazing gap", which is the amount of feed required by the livestock of a country that is not supplied from other sources (Krausmann et al., 2008). The grazing gap, i.e. the difference between total feed demand and supply, was assumed to equal the global volume of biomass harvested on grazing land. This number was finally converted from dry matter into fresh weight assuming 15% moisture content in accordance with the MFA guidelines (EUROSTAT, 2011).

In the forestry section, primary data was also taken from the FAO website and database. In the category "Industrial Roundwood" FAO reports on different roundwood products dividing them into coniferous and non-coniferous products. The following factors were applied for all countries, in order to transform the data from m^3 to tonnes: 0.52 tons per m^3 for coniferous wood and 0.68 tons per m^3 for non-coniferous wood.

Regarding data for the catch of fish, data was taken from the FAO website and database (Fisheries and Aquaculture Department; Global Production Statistics).

3.4.1.2 Metal ores (DEU_2)

Almost all primary data for metal extraction were taken from the data base developed by the British Geological Survey (BGS, 2013), which provides comprehensive data on the extraction of metals and minerals in all countries world-wide. The BGS data are complemented with data from the US Geological Survey (USGS, 2013) as well as with data from the 'World Mining Data' (WMD) of the Austrian Ministry for Economy and Labour (Reichl et al., 2013). Additionally, we compared the different sources with regard to similarities or differences in the magnitude of the reported values.

Concerning the data on metal extraction, BGS reports the majority of the different metal types in metal content contained in an extracted ore. In these cases, we used factors, in order to calculate the corresponding extraction of gross ore (run of mine). Information on concentrations of metals in crude ores was obtained through interviews with experts and a literature survey of more than 300 publications, in particular country and metal reports from the German Federal Geological Institute and the US Geological Survey as well as recent scientific literature (for more information see SERI and WU, 2014).

3.4.1.3 Minerals (DEU_3)

For the section of Industrial Minerals we used primary data available from BGS, WMD, and USGS. In contrast to the necessary conversion of reported metal extraction, industrial minerals generally are reported as concentrated products, and as such do not have to be converted.

Coverage of Construction Minerals in official statistics is still unsatisfactory, even in industrialised countries, but in particular with regard to non-OECD countries, where huge data gaps were identified and in many cases, no data on the extraction of construction minerals at all is available from published statistics.
Therefore, a 3-step estimation method was developed (for more information see SERI and WU, 2014):

1. For countries, which regularly publish accounts of material extraction including construction minerals, i.e. the EU-27 and the US, data was directly taken from official statistics.
2. For all other countries, for which USGS reported physical data on cement and bitumen (or asphalt) production, a method was applied, which estimates the amount of extraction of limestone, sand and gravel based on these physical production data. By this procedure, we cover around 50 % of all countries world-wide, including all the large consumers of construction minerals, such as China, India or Brazil.
3. For all remaining countries, mostly small developing countries, we estimate the values for extraction of construction minerals based on GDP/capita data. In total, less than 5% of all global construction minerals are estimated based on this third approach.

3.4.1.4 Fossil fuels (DEU_4)

Data on fossil fuel extraction are taken from energy statistics from the International Energy Agency (IEA, 2014a, b). The IEA dataset is the most comprehensive currently available data set reporting on fossil fuel extraction and energy use of all countries world-wide. Data can be easily compiled and retrieved with a Pivot-type tool provided by IEA.

The IEA reports all categories included in the Global Material Flow database (hard coal, lignite/brown coal, crude oil, natural gas, natural gas liquids, peat for energy use) in primary units of 1000 tonnes. Only the values of natural gas have to be converted from TJ into 1000t (kt), using a conversion factor provided by IEA itself (0.018 kt/TJ).

3.4.1.5 Possible harmonisation with data from UNEP-IRP project

In a currently ongoing project commissioned by UNEP's International Resource Panel (IRP), a team composed of CSIRO (Australia), SEC (Austria), WU (Austria) and Ifeu (Germany) is compiling a globally harmonised data set on material extraction and direct physical trade for a time series from 1970 to 2010. The data set will also contain improvements regarding the estimation procedures in selected key areas, for example related to the uptake of biomass by animals (grazing).

It is foreseen that this globally harmonised data set will be published in the official UNEP data portal in aggregated format (the exact number of aggregated material categories to be published is still in discussion). It would be very desirable, if the data set on material extraction integrated in the EXIOBASE 3.0 could be aligned with the aggregates as published by UNEP. As the UNEP data set will only be publicly available in 2015, it can be foreseen that a final revision of the EXIOBASE material extraction data set will be carried out mid-2015, i.e. after WP5 has officially ended.

3.4.2 Allocation of material extensions to IO tables

The WP 5 team invested significant resources into analysing and improving the approach on how material extractions are linked to the EXIOBASE IO tables. In order to do this, detailed analyses on the material intensities resulting from dividing the absolute amounts of material extraction by the total output of the respective sectors, to which the specific

material is allocated, were undertaken for each of the raw materials distinguished in EXIOBASE.

This detailed analysis of the EXIOBASE IO tables also helped to identify a number of potential errors in the EXIOBASE IO tables. Some cases were identified, where extraction data is being reported, but no corresponding economic values exist in the monetary SUTs. In other cases, the supply-chain information needs to be re-visited, in cases certain products are delivered to non-intuitive sectors (e.g. in Luxembourg, 49% of raw milk is currently being delivered to the sector "Other business services"; or in Brazil, 20% of uranium extraction is being delivered to the furniture production sector; or in Indonesia 9% of forest products are delivered to households whereas FAO reports 59% of wood extraction to be used as wood fuel in households). These observations were reported in a log-file and were exchanged with the team working on the monetary SUTs.

Also efforts were being made to improve the concordance between (1) the different environmental extensions, in particular MFA data for biomass and land use data, and (2) various classifications being used in the construction of EXIOBASE, in particular FAO, AgroSAM and CPA, and harmonised across all modules using this classification (i.e. monetary SUTs, physical SUTs, environmental extensions). Final decisions on some of the concordance issues are still to be taken in the WP5 team.

A special focus was set on the allocation issue for sectors, where a large number of raw materials with potentially very different use structures are aggregated into one sector, which leads to misallocations of non-homogeneous products. From this perspective, the **"Crops nec" sector** is the main problematic sector in the agricultural production area, as both agricultural products related to animal production are found in that sector (e.g. fodder plants, straw, grazed biomass) as well as spices, stimulants, rubber, etc. which represent very different masses and are being used by completely different sectors. As this sector is also very relevant for the extension category of "land" (with important links to WP 7 works on biodiversity indicators), it was decided to particularly analyse this sector and try to improve the allocation approaches.

In the previous EXIOBASE version 2.2 developed in the CREEA project, the four categories of fodder plants, straw, crop residues and grazed biomass were allocated to the two sectors of "raw milk" and "cattle" following the shares of the two sectors in combined monetary output. In DESIRE, this approach is being further refined:

- For **fodder crops**, the WP 5 team decided to use the AgroSAM database to calculate the monetary shares of the five animal and animal product sectors receiving the fodder crops (i.e. Raw milk, Cattle, Pigs, Poultry and Meat animals nec) in their combined monetary output. Fodder crop extensions are therefore now taken out from the sector "Crops nec" and allocated directly to the animal-related sectors using the fodder inputs. As a consequence, also in the monetary SUTs, the monetary values representing the deliveries from "Crops nec" to the animal sectors were retrieved.
  As AgroSAM data is only available for the EU-27 countries, a procedure was also developed to transfer European intensities (i.e. fodder inputs per monetary output of the animal producing sectors) to all other EXIOBASE countries: first, average EU-27 intensities were calculated for all five sectors. Second, the total output of the respective animal sectors in non-EU countries (e.g. monetary

output of Cattle in China) was multiplied with the respective average European intensity (e.g. fodder input per € of output in the cattle sector). Finally, the resulting numbers for fodder crops were scaled to the actual numbers as reported in the material extensions. By this procedure, the different composition of the 5 sectors in each non-EU country could be maintained, while the overall number of fodder crops matches exactly the total extraction of fodder crops in that respective county.
By applying this procedure, the different fodder intensities of meat cattle versus dairy cattle could be much better elaborated, with cattle now having significantly higher intensities compared to raw milk, see Table 3.5.

Table 3.5: Comparison of the intensities resulting from the old (below) and new (above) allocation procedure for fodder crops

		Austria	Germany	France	Slovakia	USA
AgroSAM- Allocation	Cattle	1.68	5.96	2.11	4.26	3.96
	Raw milk	0.29	1.34	0.74	0.41	1.16
	Products of meat cattle	0.51	1.80	0.98	1.80	3.27
	Dairy products	0.09	0.44	0.25	0.10	0.45
Cattle/Milk- Allocation	Cattle	0.96	4.12	1.49	1.31	3.53
	Raw milk	0.87	4.09	1.43	1.27	2.38
	Products of meat cattle	0.30	1.27	0.70	0.57	2.91
	Dairy products	0.25	1.31	0.49	0.30	0.91

- Decisions still need to be taken in the WP 5 team on whether the three other material extension categories of **straw, crop residues and grazed biomass** should be allocated in the approach of EXIOBASE 2.2 (i.e. allocated to Raw Milk and Cattle), or whether more refined approaches will also be used here.

3.4.3 Status of data work and timeline for completion

A first version of the data set on material extensions has been delivered, covering the time period of 1995 to 2010. This first version does not yet include the improved method for allocating certain categories of material extraction to specific EXIOBASE sectors, but uses the allocation scheme as developed for EXIOBASE 2.2 in the CREEA project.

The update to the year 2011, i.e. the final year for the DESIRE time series, is currently ongoing and will be completed by October 2014. This final version will then consider all improvements in the allocation of material extensions to sectors.

In an additional working step in 2015, i.e. after the official end of WP5, we aim at providing an updated data set in accordance with the UNEP data set for the final version of EXIOBASE 3.0.

3.5 Land

Land area data are integrated to the EXIOBASE model in a time series for every year from 1995 to 2011. The main source for the land use extensions in the EXIOBASE model compiled in this project was the online statistical data base of the FAO[4]. The FAO database is the most comprehensive database with regard to agricultural production and all related physical flows. Land use data and biomass extraction (part of MFA data) are consistently linked. Therefore, teams extending the EXIOBASE with material and land accounts worked in close collaboration to guarantee consistency between the environmental extensions and data quality for the further processing within the IO framework.

FAO land use data are compiled along five main categories of land use and land cover: cropland, grassland, forest land, settlements and other land. Table 3.6 shows the land use categories used in the DESIRE project. Additional to the land use categories, the final data set encompasses information on:

- Country
- Product codes
- Year
- Quantity
- Unit

Table 3.6: Land use classification and list of land use categories used in DESIRE (n.d. = not defined yet, under development) and the state of the work by July 2014

Land account	Name	Product code	Progress
Land use-Arable Land - Rice	Paddy rice	p01.a	Ok
Land use-Arable Land - Wheat	Wheat	p01.b	Ok
Land use-Arable Land - Other cereals	Cereal grains nec	p01.c	Ok
Land use-Arable Land - Vegetables, fruits, nuts	Vegetables, fruit, nuts	p01.d	Ok
Land use-Arable Land - Oil crops	Oil seeds	p01.e	Ok
Land use-Arable Land - Sugar crops	Sugar cane, sugar beet	p01.f	Ok
Land use-Arable Land - Fibres	Plant-based fibers	p01.g	Ok
Land use-Arable Land - Other crops	Crops nec	p01.h	ok, now without fodder crops
Land use-Arable Land - Fodder crops	n.d.	n.d.	to be split up and allocated to different livestock products
Land use-Pasture - Permanent pasture	n.d.	n.d.	to be split up and allocated to different livestock products
Used forest land	Products of forestry, logging and related services	p02	Ok
Unused forest land			not allocated
Settlement			not allocated
other land			not allocated

[4] http://faostat.fao.org/site/567/default.aspx#ancor; http://faostat3.fao.org/faostat-gateway/go/to/download/R/RL/E

3.5.1 Databases and methodology for the different land use categories

As aforementioned, land use and biomass extraction data are closely interlinked. Therefore, the (dis)aggregation of the 11 land use extensions in DESIRE is done in accordance with the material resources accounts (cross reference). A detailed list of the primary crops and their specific DESIRE land use category is shown in the Annex (cross reference).
Data from the FAO database for primary crops such as rice, wheat, vegetables or fibres are allocated to the category "land use – Arable Land" (Table 3.6). The category "Other crops" includes spices, tobacco or coffee.
According to allocation factors provided by the (FAO 2003), an area differentiation to "oil crops" and "fibres" was done for the two crop items seed cotton and kapok fruit. While the factors for oil crops (p01.e) and fibres (p0.1.g) are 0.63 and 0.37 for the item seed cotton, 0.66 and 0.34 was used for the item kapok fruit.
Land use data for permanent pastures and meadows was taken from national accounts from the FAO resource database and refer to the category "permanent pasture". The allocation of these categories to the IO tables is under development as are the product codes for fodder crops and grazing/pasture. Together with the team that is working on the material biomass extension we are developing a common key to allocate fodder crops and the fodder intake from grazing areas to different livestock products. This represents a major improvement to previous allocation procedures because large quantities related to fodder crops are separated from smaller quantities of spices, tobacco and coffee which remain in the category "other crops".

Woodland

There are huge uncertainties about (de)forestation and actual land used for timber production (see e.g. (Hansen et al. 2013, Erb et al. 2007) . Therefore we used three different approaches to estimate the woodland areas in the DESIRE project. Each of the three variants are going to be tested with the EXIOBASE model to find out the differences between the three approaches and to decide about the most appropriate allocation.

The three approaches are:
1. The yearly available area data on woodland was taken from the FAO statistical database and were allocated to the product category "Products of forestry, logging and related services". The areas are consistent with the numbers given in the Forest Resource Assessment reports (FAO 2010, 2001).

2. The Forest Resource Assessment (FAO 2005, 2010) gives information on the designated functions of forests such as percentage of productive forest, protection of soil and water, conservation of biodiversity, multiple use or productive plantations. In the second approach we consider the area of productive forests and forest area of multiple uses according to:

$$woodland_{\text{var2}} = \sum Forest\ area\ Production + \sum Forest\ area\ Multiple\ use$$

Some important wood exporting countries such as Germany report all their area used as "multiple use". Thus, we decided to consider forest area of multiple use additional to forest area on production. The FAO (2010) reports forest area extent for four time cuts:

1990, 2000, 2005 and 2010. The number of each year from 1995-2009 were interpolated and extrapolated for 2011. Information of the primary designated forest function in percentage of total forest area is given by the FRA since 2005. Differences in data availability were visible for 2005 and 2010. Since data was generally available in a more detailed way for 2010, we decided to use these information on designated forest function throughout the DESIRE time series.

3. This approach is based on the work of Erb et al. (2007) who developed a consistent spatially explicit land-use data set for the year 2000 comparing remote sensing and census data at country level. Erb et al (2007) differentiated between used forests and untouched areas and assumed that all forest areas outside wilderness areas are used, although maybe very extensively. Thus, we derived country specific factors for used forests for 161 countries from this dataset for the year 2000. We assumed that the share of used forests remains the same in every year of the DESIRE time series. The specific national used forest area is calculated for every year from 1995 to 2011 according to the following:

$$Woodland_{\text{var3}} = country\ factor_{used\ forest} \times woodland\ area x_{country,FAO}$$

Settlement area

All developed land, including transportation infrastructure and human settlements is allocated to the category "settlements". For the time series in the DESIRE project we used country specific settlement area data from Krausmann et al (2013) which were available for the years 1990, 2000 and 2005. Yearly data for the DESIRE time series were interpolated and from 2005 onwards extrapolated. Settlement area was not allocated to the IO industries because there is no information available to do so properly.

Fallow land and land with multiple cropping

Fallow land and multicropping areas were considered throughout the time series and are included in the area accounts of the different categories of arable land. We considered the calculations of the average national fallow land or multicropping area for every year of the time series according the following formula:

$$fallow\ land\ or\ multiple\ cropped\ areas = \sum arable\ land_{\text{FAO}} + \sum permanent\ crops_{\text{FAO}} - \sum primary\ crops_{harvested\ area}$$

Positive results indicate the existence of national fallow areas, whereas a negative outcome indicates the existence of areas that are used more than once a year. Numbers on total arable land and land for permanent crops are taken from FAO's land resource statistics. The total sum of primary crops includes cereals, rice, vegetables, fruits and fodder crops but excludes items connected to pasture use such as forage and silage, grasses nes and rye grass, which are allocated to the categories fodder crops and permanent pasture.

Among the countries with a positive result (multicropping area) are China, Bangladesh, Nigeria and India, all with a high proportion of harvested rice areas. Further, we assumed that also areas for wheat and other cereals might have the potential of multicropping especially in countries with little or no reported harvested rice area. Thus, the national average multicropping area was proportionally allocated to rice, wheat and other cereals

according to their individual shares and subtracted from the harvested areas of these three land use categories (p01.a, p01.b and p01.c).
The country specific fallow area was proportionally allocated and added to wheat, other cereals, oil crops, sugar crops and other crops. We did not consider fallow land for the cultivation of rice, vegetables, fruits, nuts and fibres.
The FAO documentation regarding the data coverage and number of harvest events per hectare and crop etc. was not detailed enough. Lack of information thus might result in double counting of fallow land or multiple cropped areas. With the above described cross checking we want to highlight possible double counting in order to minimize inconsistencies.

Other land

The land use category "other land" is not integrated in the EXIOBASE EEIO model, but served as a cross check category after subtracting the different disaggregates of arable land, pasture and meadows, woodland and settlement area from the national total area according to the FAOstat. We assumed that other land results in positive values only after subtracting all other land use categories from the total land area provides by the FAO resource statistic. Other land resulted in negative values when using forest data from woodland variant 1 for a few countries including Mozambique, Paraguay and Romania. For further explanation see the next paragraph.

Fodder crops and permanent pasture

Land used for growing fodder crops, such as fodder beets or maize silage are aggregated to the land use category "Fodder crops" (see DESIRE/SEC category L_1_9 in Appendix 3-A). After balancing the land use categories with the specific land area of each nation it occurred that other land showed negative values for some of the countries. This included especially Germany, some of the sub-Saharan African countries and nations from the former Soviet Union. We did cross check with the data of the FAO resource statistics and found that the different land use categories did not fit within the FAO database for some of the African nations such as Gabon or Mozambique. In the case of Germany it was evident, that the areas of the following fodder crop items had a significant effect on the enormously negative balanced other land: harvested area for forage and silage, grasses nes; forage and silage, green oilseeds; forage and silage, rye grass; and harvested areas for pumpkins for fodder. It seems that there might be reporting uncertainties for the area of the mentioned fodder crops due to FAOstat codes changes in the past and possibly also due to double counting issues. We therefore decided to exclude the areas of the above mentioned fodder crop items from the land use category "fodder crops" for all nations in order to obtain positive values for the balanced other land (see Appendix 3-A).

Country aggregates

Land use accounts for countries and regional aggregates follow the DESIRE classification for 28 European nation, 16 important trade partner and 5 regional aggregates (Appendix 3-A).
FAO land use data for Belgium and Luxembourg is reported as an aggregate from 1995 to 1999. We used the land area relations of 2000 to proportionally disaggregate all land use categories. We assumed that the proportion of the harvest area e.g. for wheat reported for Belgium-Luxembourg is 0.92 for Belgium and 0.08 for Luxembourg. We kept these factors stable for all land use categories according to Table 3.6.

FAO's resource statistic report reports only one number for all land use areas for China. We therefore had to split these numbers into P.R. China and Taiwan. National statistical data for Taiwan is used in order to derive detailed land use data, in particular Taiwan's national census data from the statistical yearbooks for the estimation of total land area, paddy rice area, (permanent) cropland and forest land (Council of Agriculture, Executive Yuan R.O.C 2011). Numbers for permanent meadows and pastures were taken from worldstat[5]. Primary crops area for Taiwan is taken from the FAO production statistic. In order to make country area checks, Taiwan's national data derived from the mentioned source is subtracted from the FAOs number for China.

3.6 Waste

Waste accounts show the amount of waste either produced or used by each sector or final consumer of a specific economy. Here we give a brief introduction of the waste accounts. A more detailed explanation on how they are calculated is included in the Section 5 dedicated to PSUTs.

In order to avoid misunderstandings, it is preferred the definition of *materials for treatment* instead of that suggested by SEEA 2012 for *waste* (Schmidt et al., 2013). However, the term *waste* will be also used in the text but exclusively for meaning *material for treatments*. *Materials for treatment* are meant those flows from a human activity that remains in the technosphere but cannot directly (i.e. without further processing or emissions) displace another principal product of an activity. After processing in a waste treatment (or recycling) activity, the recovered materials for treatment may displace other products, for instance the compost replacing chemical fertilisers. The format of the waste accounts is type of waste by activity/final consumer. There are three accounts, *Supply of waste*, *Use of waste* and *Supply of unregistered waste*. Waste accounts are accounted in mass terms.

3.6.1 Supply of waste

The *Supply of waste* shows the generation of materials for treatment from intermediate and consumer products, natural resources and materials for treatment. The latter indicates what is known as waste of waste. This implies that some flows could be double accounted. In other words, a waste flow could be accounted in the activity producing it and, at the same time, in the waste generated by waste treatment activities. This does not represent a limit of the approach but, instead, it is made on purpose because the accounts are thought having in mind modelling purposes rather than accounting ones.

Notice that the matrix the Supply of waste includes materials for treatment traded in the economy at a positive price as well as materials for treatment for which a cost is paid in order to get rid of them. The stock categories (columns) supply materials for treatment that consist of waste generated from products previously accumulated in the economy, or directly from waste previously put aside.

With regard to trade of waste, in the *Supply of waste* it is shown the waste that is imported from other countries in relation to export of waste services to other countries.

[5] http://en.worldstat.info/Asia/Taiwan/Land

3.6.2 Use of Waste

The *Use of waste* shows the flows that are treated from waste treatment activities. It is important to remember that in DESIRE the recycling activities are obtained disaggregating some specific activities that usually are kept together in SUTs released by official bureaus of statistics. This occurs because in the most diffused activity and product classifications, such as Nace, activities that carry out productions from virgin and secondary materials are regrouped in the same category. This is a consequence of the economic criteria used by the system of classifications to allocate an enterprise in the due activity category (see Section 5.3).
With regard to trade of waste, in the *Use of waste* it is shown the waste that is exported from other countries in relation to import of waste services from other countries

3.6.3 Supply of unregistered waste

The *Supply of unregistered waste* shows the generated waste that is not handled by any waste treatment activity. In other words, this is a residual account obtained as difference between the *Supply* and the *Use* of waste. The *Supply of unregistered waste* can include the waste that is illegally dumped into the environment or variation of the stock of materials that the DESIRE model does not catch.

4 Multi-regional SUT and IOT

4.1 Introduction

All monetary and physical accounts for the individual countries come together in EXIOBASE; the database system that allows for the storage of environmentally extended SUTs, the creation of multi-regional SUTs and final transformation into different types of multi-regional input-output tables (Tukker et al., 2013). An overview of the data-flow through EXIOBASE is depicted in Figure 4.1. EXIOBASE was developed in two previous European framework research projects EXIOPOL (Contract No 037033-2) and CREEA (Grant agreement No 265134). The set-up and use of EXIOBASE has already been described in other publications and deliverables (De Koning et al., 2008a, 2008b, 2008c) and will not be repeated here.

In the DESIRE project, EXIOBASE is further expanded and adapted to the needs of the DESIRE project. The data checking framework is further expanded, the creation of the multi-regional SUT is improved and the creation of a mixed unit multi-regional SUT is explored. These three subjects will be discussed here. The data checking procedures and possible improvements are discussed in Section 4.2. The currently operational monetary trade-linking procedure and the development of a physical trade-linking procedure (not operational yet) are discussed in Section 4.3.

4.2 Data checking

Data checking involves the analysis of the integrity, completeness and data values in EXIOBASE. These checks can however never fully catch every problem at every level that may exist in the data. To illustrate the complexity of the issue, there are about 5 million data values in EXIOBASE for one year. Checking such an amount of data must be done with automated procedures. Manual checking (eye balling) - at higher levels of aggregation - can only sporadically be done.

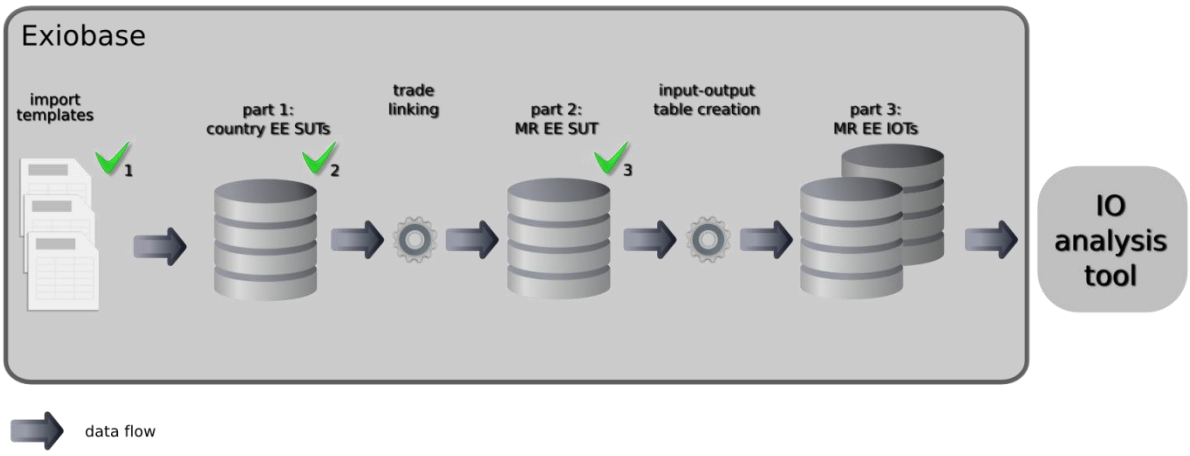

Figure 4.1: Data testing is carried out at three points in the EXIOBASE system in the production line from imported data to exported multi-regional input-output tables. 1) when importing the individual data 2) at the level of individual country SUTs 3) at the level of the multi-regional SUT.

Basic integrity of the data is guarded by the relational data model that has been implemented in a relational database management system. At import of the data (point 1 in Figure 4.1) it is checked if the data conform to all the requirements imposed by the data model. The requirements prescribed by the data model and basic integrity checking are discussed in detail in Appendix 4-A. If the data pass these checks they are imported into EXIOBASE. But there are data integrity issues that transcend individual data points and these are not caught by the data model. For instance, the total value of the taxes less subsidies should equal the row values of taxes less subsidies in the value added economic extension block. Such data integrity issues have to be caught by either leaving out sum values or having checks that can detect such problems. Leaving out the sum values and calculating the sum values from the primary data is the preferential solution from a data integrity point of view - and the most often used solution in EXIOBASE - but in some cases this would lead to impractical extraction of data from EXIOBASE. The cases where duplicate data are stored in the database in the form of sum values are described in Box 4.1.

Completeness checking and value checking can only be done in so far there is a reference available to which the data in EXIOBASE can be compared. This also raises the question which data are the best and can be used as reference but will not be discussed here. These reference data can either be available in the EXIOBASE system itself or may be available from external sources. To allow checks on a self-contained system without the need to find external/independent reference values, all completeness and value checks are based on information that is available in the EXIOBASE system itself. Many of the completeness checks are based on finding inconsistencies in the data. For instance the supply - use tables report that there is export of a certain product from a country but the trade data do not have any information on export of this product. Inconsistency checking can only take place after all data related to a single country have been imported. (point 2 in Figure 4.1). All automated checks at point 2 of the database system are given in detail in Appendix 4-B.

Checking the values of individual data elements in as far as possible is also carried out at point 2 of the EXIOBASE system. Two tools are in place to do so. A quite extensive set of queries that check for possible value errors in the data and an interactive tool that allows for highlighting elements in tables of a country that are relatively high or low compared the same elements in tables of other countries. The automated queries look at inconsistencies in the data and look at values that should logically not be present in the data, for instance negative import use of products. The interactive tool can be used to spot too high or too low values in the data and is called the outlier detection tool. Both the set of queries and the interactive tool are discussed in more detail in Appendix 4-B. Besides completeness checks at the level of the individual country SUTs, also the integrity checks on sum values as discussed in Box 4.1 are also to be carried out at point 2.

Storing a sum value together with the individual values that make up the sum value in a relational database is an integrity violation. It is a form of storing duplicate information. If for whatever reason one of the individual values are changed without changing the sum value, the database is left in an inconsistent state. There is no built-in mechanism in the relational database management system that would automatically change the stored sum value when one of its underlying individual values part of the sum value is changed.

The best solution would be to store no sum values at all. Every time the sum value is needed, this sum value is to be calculated "on the fly" from the underlying values. This removes the duplication. However, in some cases this would make it very cumbersome to retrieve data from the database. The calculation has to be done either in a complicated (and slow) query statement or the summation has to be carried out using application side programming. A case where we have chosen to store the sum value is present in the value added table.

The value added table contains a row which gives the "taxes less subsidies" for each industry sector. Each value in this row is the column sum of "taxes less subsidies" layer available in the intermediate use table. The choice could have been made not to store the "taxes less subsides" value in the factor input table. Whenever all value added items for a particular country or sector would have been needed, the taxes less subsidies value, would need to be calculated from the values stored in the intermediate use table. Given that the intermediate use table contains the most data in a single table in the database, it would be slow. Also the query statement would be quite complicated containing several sub-queries. Therefore in this single case the choice was made to store both the sum "taxes less subsidies" values in the factor inputs table as well as the individual values in the intermediate use table. A seperate check that can be run after all data have been imported has been implemented that checks for consistency between sum value and individual values of "taxes less subsidies".

No other duplicate sum values are stored in EXIOBASE.

Box 4.1: Duplicate sum values stored in EXIOBASE

After having created the multi-regional use table (point 3, Figure 4.1) it is checked if the table is well balanced and if the GDPs of the countries calculated from the multi-regional table did not change from the GDP calculated from the single country SUTs.

The checks at import and automated checking of the data at the level of countries and multi-regional SUTs have been successful in catching data problems early on. The check report generated by these automated checks can also serve as an overview of the current status of the database. This automated checking frame-work can still be expanded, particularly checks on the physical data and physical vs monetary data is still to be improved.

The outlier detection tool as it currently exists is less useful. The problem is that it is not easy to define an outlier if a reference is difficult to establish. Improvements to the outlier detection tool might be to automate the procedure such that the results are exported to a file and to define different reference groups of countries instead as using the mean or median value of all countries as reference value. Also statistical procedures might be introduced to find outliers.

4.3 Trade-linking

4.3.1 Monetary

The monetary trade linking procedure essentially follows one of the procedures described by Bouwmeester (2014). The procedure that creates a multi-regional use table use the information as depicted in Figure 4.3. The general outline for creating the multi-regional table is presented below. For details the publication by Bouwmeester (2014) on trade-linking and the publication by Junius and Oosterhaven (2003) can be consulted.

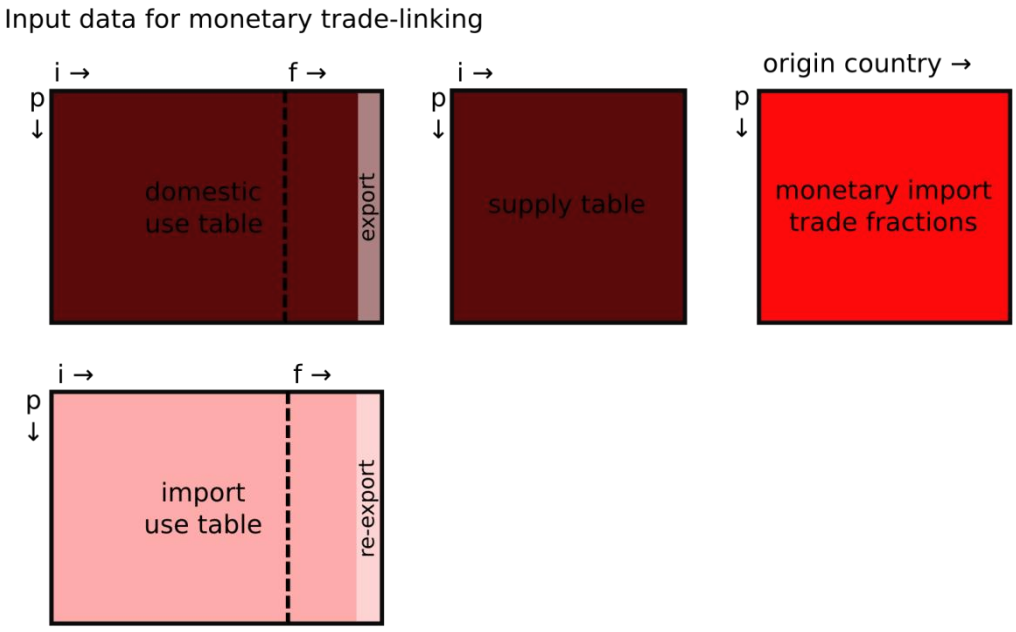

Figure 4.3: The monetary data available to create a monetary multi-regional use table. p means product categories, i industry categories, f final use categories.

Creating the multi-regional use table is quite a challenge because numerous data inconsistencies have to be resolved.

- Export data are reported in f.o.b. prices and import prices are in c.i.f. which creates by definition a value difference in total reported world export and total world import. The diffirence should be in the order of a few percent. The value difference was 0.15% for version 2.2.0 of EXIOBASE. At the level of individual product groups the differences can be very large. There are cases where reported total import of a product is 9810 million Euro and the reported export is 346 million Euro. This indicates that not only price level differences are responsible for value differences between reported imports and exports. All kind of other issues are also reponsible for these value differences.
- There are cases in which an import of a country is reported by the import use table of a country but the trade data have no information about the origin of the product. In EXIOBASE version 2.2.0 there were 53 of these cases.
- There is import of a product into countries but no country is exporting the product. In EXIOBASE version 2.2.0 there were 249 of these cases.
- There is export of a product but no country is importing the product. In EXIOBASE version 2.2.0 there were 40 of these cases.

All these inconsistencies have to be resolved to be able to create a global trade-linked system. If inconsistencies between data are encountered one or both of the data has to be adapted to resolve the inconsistency. The data that are deemed to be of higher quality can be used as reference and the other data are adapted. This is a strategy that has been followed as the default approach in the EXIOBASE system. One set of data is fixed and the other data set is adapted. The following choices have been made with respect to

1. The information in the SUTs is changed as little as possible. Trade fractions are adapted.
2. The export value reported in the SUTs is not changed. The import values (implicit exports) are adapted to match the value of the export. Total amount imported by an industry into a country is however not changed.

The two points above describe the choices that have been made in the default trade linking approach but other choices are possible as well. For instance adapting export values and keeping import data fixed or combinations of the two.

Creating the multi-regional use[6] table is a two-step procedure. First an initial estimate is made of the multi-regional use table. Second the initial estimate of the multi-regional use table is adapted such that values for import match export.

The first step proceeds as follows. The import use table of a country and the import fractions of a country are combined to create all the bilateral import use tables for that country. The creation of the bilateral import use matrices is repeated for every country which results in a first estimate of the multi-regional import use table.

The import fractions tell us what is the origin of an imported product. What the import fractions do not tell us, is the origin of the imported product by industry sector. The assumption is that each industry sector that imports a certain product do so from the

[6] Note that a combination of the intermediate use and final use table is indicated here, see also Figure 3.2 and Figure 3.3.

countries of origin in the same share. As an example blast furnaces and coal power plants both import coal. It is assumed that both industry sectors import coal from the same countries in the same shares. That is likely not a very good assumption. The type of coal used by blast furnace works is very different from the type of coal burned in coal power plants which makes it likely that the same share assumption does not hold.

A single row of initial multi-regional import use table represents all the import of a specific product produced in a country into the industry sectors of all other countries. Conceptually it expresses an implicit export and should be equal to the reported export of the product. Therefore the sum rows of the initial multi-regional import use table can be matched with the export vector of each country.

If the implicit export vector calculated from the initial estimate of the multi-regional import use table is compared with the export vector several problems may be noticed.
1. Sometimes zero implicit export is reported while there is export.
2. Sometimes zero export is reported while there is implicit export.
3. The total value for implicit export is different from the total value of export.
4. The value of implicit export is different from the value of export.

Problem 1 is resolved by taking the export value as reference and constructing a row in the multi-regional import use matrix. The row is constructed by taking an average import use of all products from the bilateral import use table for each sector and assuming that this average represents the import use. This is a very rough assumption that may change the structure of an industry sector. For instance if a sector did not use any coal it might by this assumption suddenly have import use of coal. The number of these inconsistencies to be resolved in this way should therefore be as small as possible and/or the values involved should be very small.

Problem 2 is resolved again by taking the export vector value as reference and removing all values in the matching row in the initial multi-regional import use table.

Problem 3 is resolved by multiplying the complete initial multi-regional import use matrix (after problem 1 & 2 have been resolved) with a single factor this factor represents the total value difference between the import reported in c.i.f. prices and exports in f.o.b. prices.

At this stage only value differences between the implicit export and the export vector remain. The value differences are resolved using a RAS algorithm that is applicable to matrices that contain negative numbers also. This so called GRAS algorithm was developed by Junius & Oosterhaven (2003). It adapts the values in the matrix minimally such that it conforms to the requested row and column sums. It is an iterative procedure that is guaranteed to find the global optimum solution. The input of the GRAS algorithm is the initially estimated multi-region import use table, the requested export vector and the column sums of the import use table. The output is a balanced multi-regional import use table that conforms to the requested export vector and in which the total import of products into a country are not changed. However, the trade fractions that were used to create the initial multi-regional import use table are changed.

The GRAS algorithm internally adapts the import use matrix by multiplying the matrix with a row and column vector. The value of these coefficients in these row and column

vectors give an indication of the amount by which the import use data have to be changed to conform to the export data. These coefficients can be quite large (order of 10^{6}) or small (order of 10^{-6}). It is no surprise that the initial trade fractions are changed substantially.

The whole trade-linking procedure has been implemented in a JAVA program that works without user interaction. After having started the trade-linking procedure the program will query all the necessary data from the database and carry out all the operations as described in general lines above. After the final multi-regional import use table has been created it is stored for further processing. While the trade-linking procedure is running, information on the trade-linking process is written to a trade-linking report that can be inspected afterwards. It contains information on the initial and final column/rowsums, the inconsistencies that needed to be resolved and elements in the multi-region import use table that has changed most to get a balanced import use table. The generated report is an important tool for debugging data.

The operational monetary trade-linking routine developed by Bouwmeester (2014) based on the GRAS matrix balancing algorithm (Junius & Oosterhaven, 2003) has proved to be a robust approach for trade-linking. It will remain the default method to create a multi-regional supply-use table. However, as discussed above, this trade-linking procedure changes the initial values on trade fractions substantially (while preserving the values for import and export available in the SUTs). If the value for the trade fractions are to be preserved a different trade-linking algorithm has to be developed. The set-up of such a trade-linking algorithm will be explored further in the DESIRE project.

4.3.2 Physical

Physical information is not available for every product/commodity. Services typically cannot be expressed in physical terms. In Appendix 4-C a list is given of the products/commodities that are available in physical terms.

In contrast to the monetary SUTs the physical use table is only available expressed as total use of a product by an industry sector. It is not split into domestic and imported products part. Moreover there are no physical trade fractions available, see Figure 4.4.

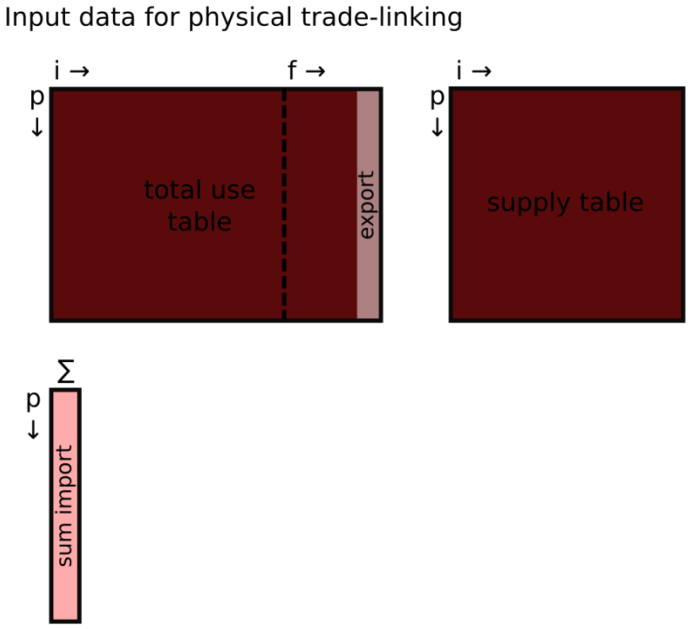

Figure 4.4: The physical data available to create a physical multi-regional Use table. Compare with Figure 4.3 to see how much less physical information is available to create a physical multi-regional use table. p means product categories, i industry categories, f final use categories.

It is assumed that re-exports, which are explicitly known in the monetary SUTs have been removed from the export column and sum import vector in the physical SUTs. If re-exports are not well known and/or partly removed from the physical SUTs, it could be a major source of inconsistencies between MSUTs and PSUTs for some countries, given that transit trade for some product groups is over 80% of total trade (in monetary value).

Major bottle necks for the trade linking the physical data are

1. Missing import use layer. It is not known how much of the physical amount of the products used by an industry sector is imported.
2. Missing physical trade fractions. The country of origin is not known for the physical amount of imported products.

Because of this missing information additional assumptions have to be made when trade-linking the physical data. First we have to assume that the monetary trade fractions can be applied to the physical import data as well. Thereby we assume that the products exported from different countries have the same price. Secondly we have to assume that the total physical use of a product by a certain industry sector can be split into a import use and domestic use table using information from the monetary tables.

Broadly speaking the creation of the physical multi-regional can be done in a single optimization step following the monetary tables or in a two-step procedure where the import use table is created first and this import use table is subsequently used for physical trade-linking in the same way the monetary trade-linking takes place. For the moment the two-step approach is further developed.

In this two-step method the multi-regional physical table is made in the same sequence as the monetary table using additional assumptions to fill in the missing information on

the import use table. The following equalities should hold for the physical import use table.

$$\begin{cases} Q_{\text{dom}} + Q_{\text{imp}} = Q_{\text{tot}} \\ Q_{imp} \times i = iv \end{cases}$$

where Q_{dom} is the physical domestic use table, Q_{imp} is the physical import use table, Q_{tot} is the total physical use table, i the unity vector and iv the physical import vector. All values should be ≥ 0.

There are now two possible routes to derive the physical import use matrix. One takes the physical supply matrix as starting point calculates the physical domestic use table and then calculates the physical import use table as remainder. This is the so-called indirect route. The other route takes the physical import use vector as starting point and calculates the physical import use table first after which the physical domestic use table is calculated as remainder. This is the so called direct route.

If both routes are followed deterministically, no satisfactory Q_{dom} or Q_{imp} can be calculated. The intermediate industry domestic use or import use will contain negatives. The problem is that both methods assume that there is a homogenous price either for the domestic products used or for the imported products used. To be able to estimate a proper physical import and domestic use matrix the homogeneous price assumption cannot be honored. That leaves us with a data gap and a deterministic calculation of the import use matrix on the basis of a straightforward assumptions is not possible.

A way out might be to calculate an estimate of the import use matrix on the basis of the monetary share of import use corrected for price differences between domestically produced and imported products. Because we know from the trade fractions where the imported products have been produced and the price level of the producing countries is known this price correction is possible. This would provide us with a preliminary estimate of physical fraction import use (F_{imp}). A preliminary physical import use matric can then be calculated:

$$\tilde{Q}_{\text{imp}} = F_{\text{imp}} \odot Q_{\text{tot}}$$

Where $\tilde{Q}_{\text{imp}}$ is the estimated import use matrix. The rows of the preliminary physical import use matrix are then scaled such that the row sums equal iv. The scaling vector may not be so large that the import fractions become > 1. If that happens the import fractions >1 are cutoff at 1 and a new $\tilde{Q}_{\text{imp}}$ is estimated iteratively until $\tilde{Q}_{\text{imp}} \times i = iv$.

This physical trade-linking is still very much in its early stages of development and will be further developed in the next steps of the project.

5 Now-casting

Currently, global MRIOs are published for a certain based year in the past. This time lag hinders the use of MRIO tables for policy making. In the course of the DESIRE project, we explore the options for now-casting EXIOBASE and the indicator results.
The two main causes for the time lag are the (1) complexity of compiling the MRIO/MRSUT and (2) the time lag of the underlying background data (statistical offices and databases). Whereas the first aspect can be tackled by automating the compilation procedures, the other aspect requires some simplification/assumption regarding the temporal development of the data.

5.1 Monetary

The first step of exploring the possibilities for now casting was to screen available economic databases for up-to-date data. The following data sources provide (near to) current estimates about the macro economic development on a global scale:

5.1.1 World Economic Outlook Database (IMF)

The international monetary fund provides a World Economic Outlook Database which is updated twice a year.
It includes data for 187 countries (including Taiwan and Croatia) and data for the time period of the last three to the next three years).
Available data includes:

- GDP (constant national, current national, constant USD, deflators)
- percent change of imports and exports (goods and services)
- population

Source: http://www.imf.org/external/ns/cs.aspx?id=28

5.1.2 Economic outlook, analysis and forecasts (OECD)

Includes only OECD countries, but provides also data on public/private consumption expenditure, gross capital formation, total domestic demand, ...
All data provided as percent change up to two years in the future.

Source: http://www.oecd.org/eco/outlook/economicoutlookannextables.htm

5.1.3 World Economic Situation and Prospects 2014 (UN DESA)

Contains data on GDP growth (real) and consumer price inflation. Probably no further benefit to the data by IMF.

Source: https://www.un.org/en/development/desa/policy/wesp/index.shtml

5.1.4 World Bank Indicator Data (World Bank)

Generally, the World Bank database has data updated with a time lag of one year for all countries (excluding Taiwan).

Indicators which could be useful include:

- Household final consumption
- GDP
- Gross capital formation
- Exports
- Value added agriculture

Source: http://data.worldbank.org/

5.1.5 Next steps

In the first step, we will base the now-casting on the data from the World Economic Outlook Database (IMF). The planned work flow is to update the macro economic database (section 1.1) based on the IMF data. Subsequently, we will use that data to update/rebalance the latest available economic structure data.

5.2 Extensions

For the now-casting of environmental extensions, two principal methodological approaches are available:

1. Identifying specific predictor variables for various environmental extensions
2. Calculating intensity coefficients based on the now-casted data in the monetary part of EXIOBASE

The advantages and disadvantages of both options shall be briefly discussed in the following.

5.2.1 Approach 1: Specific predictor variables

The first approach aims at identifying specific predictor varibles for as much environmental categories as possible. The DG Environment study «Nowcasting of and target setting for resource efficiency indicators» (Ecorys et al., 2013) is a recent example for such an approach. In this study, the authors aimed at identifying best-suited predictor variables for a number of resource use categories. The following table (Table 5.1) provides an example showing various categories of material flows.

Table 5.1: Now-casting predictors for selected material flow categories

Disaggregated material category	Proposed predictor	Source	Data availability (T+ months from end of last year)
Crops and crops residues	Agricultural Production Data (harvested production)	Eurostat (crops production database, fruits and vegetables database)	T+4
Wood	Forestry production data	Eurostat (for_removv)	T+11
Metal ores	Production volume for selected product codes	PRODCOM	T+7
Non-metallic minerals	Production volume for selected product codes	PRODCOM	T+7
Coal and other solid energy materials/carriers	Energy Statistics – Solid fuels	Eurostat (Primary production of all solid fuels)	T+11
Liquid and gaseous energy materials/carriers	Energy Statistics – Liquid and Gaseous Fuels	Eurostat (Primary production of total petroleum products and total gas	T+11

Source: (Ecorys et al., 2013)

In this example, various European data sources, such as PRODCOM, energy as well as agricultural statistics, have been identified as best-suited predicting variables to now-cast material categories using. The variables are available between 4 and 11 months after the end of each year.

The advantages and disadvantages of now-casting approach 1 can be summarised as:

Advantages of approach 1	Disadvantages of approach 1
• Predictor variables have high specificity for each environmental category, which is separately now-casted	• High efforts due to need for identifying specific data sources for each now-casted environmental category • Potential inconsistency with other now-casted variables in the monetary part of EXIOBASE

5.2.2 Approach 2: Coefficients based on monetary predictors

The second approach is particularly suited for an EE-MRIO framework, as it uses the now-casted monetary data, in particular on sectoral outputs, to now-cast the corresponding environmental categories. For doing this, environmental intensity coefficients are applied, which can be calculated based on historical relations (e.g. material, energy or water input per sector output). In order to reflect technological changes in the past, a de-coupling factor between environmental input and sector output can be calculated for the historical time series and applied to the now-casted time series.

The advantages and disadvantages of now-casting approach 2 can be summarised as:

Advantages of approach 2	Disadvantages of approach 2
• Lower efforts, as all environmental now-casts are performed based on the same data framework • High consistency among the environmnetal extensions nowcasted and with now-casts of monetary parts of EXIOBASE	• Low specificity for specific environmental categories, as same monetary trend (e.g. growth rate of a certain economic sector) is applied to all environmental categories • Resource efficiency calculated from now-casted data will only reflect GDP development but will not be sensitive to any changes in the environment

For the now-casting of environmental extensions in the DESIRE project, the team has decided to apply approach 2, in particular to ensure consistency between the now-casted monetary and physical parts of EXIOBASE. The concrete working steps following this approach are:

1. Calculate a historical time series of environmental intensity coefficients and a corresponding de-coupling factor (e.g. environmental inputs on average grew 2% p.a. slower than sector output in the historical time series);
2. Calculate the now-casted monetary variables, in particular sector output data (see 5.1 above);
3. Multiply the environmental intensity coefficients (in combination with the de-coupling factor) with the now-casted sector output data to receive the now-casted environmental variables in absolute terms.

While a high consistency across all now-casted variables in EXIOBASE is ensured by this approach, it is important to note that the now-casts (or projections) of resource efficiency indicators will only reflect economic developments and will not be influenced by trends and changes in the environmental domains themselves. It is important to consider this when interpreting the now-casted environmental extensions and the derived resource use indicators.

6 Physical SUT

6.1 Introduction

Physical SUTs (PSUTs) are commonly referred to the mass-based equivalent of MSUTs. Therefore they include all the tangible flows exchanged within and between economies. For this characteristic PSUTs are a powerful tool suitable for MFA.
A fundamental principle of PSUTs is the mass balance, which means that total inputs are equal to total outputs. This principle combined with the use of mass units allows that each and every tangible input or output can be taken into account. It follows that also flows that have no monetary value could be included in such a framework. We refer to waste, emissions, natural resources, etc.. These flows will then be part of a wider framework where all the accounts are consistently combined respecting the fundamental physical balance laws.
In the DESIRE project we try to calculate PSUTs for 43 main countries plus 5 rest-of-the-world regions. However, our task is not limited to the calculation of only mass-accounted SUTs. We will calculate hybrid mixed-units SUTs (HSUTs). With HSUTs are meant SUTs where mass, energy and monetary units are all included in a unique framework. This because not all the flows exchanged in an economy can be accounted in mass units because are intangible. Therefore, the PSUTs would have many zero values and this incompleteness is a limit if PSUTs are to be used as modelling tool for scenario analyses or product system impact assessments. We overcome this limit with the HSUTs. In case of intangible flows exchanged in a economy we account it in energy units, e.g. in case of electric energy, or in monetary units, e.g. for services.
In the next sections we better describe PSUTs as framework and how they are obtained. We show what are the concepts behind their construction and what are the assumptions adopted. The complementary energy and monetary flows that are used for the construction of HSUTs are directly taken from MSUTs and energy tables and are not described in the following sections.
Before starting with the description of the framework some important clarifications on the adopted terms are necessary. We define *materials for treatment* as any output flow of a human activity that remains in the technosphere and cannot directly (i.e. without further processing or emissions) displace another principal product of an activity. After processing in a waste treatment (re-processing or recycling) activity, the recovered materials for treatment may displace other products. In the following chapter we could mention *waste* to indicate *materials for treatment*. Therefore, here the term *waste* includes, for example, steel scraps that are sold on the market. At the same time, the definition of products, or goods, here adopted excludes any kind of waste.

6.2 The framework

PSUTs[7] are constructed in a determined accounting period, usually one year, and for a given geographical area, typically a country. Figure 6.1 shows the framework adopted for the PSUTs, where the upper part includes the flows of the supply side and the lower part those of the use one.

[7] see Schmidt et al. (2013) and Merciai et al. (2013) for a more detailed explanation of the framework.

Matrix **V'** shows the productions of domestic productive activities while $\mathbf{N_c}$ and $\mathbf{N_w}$ are the import of products and materials for treatment respectively. Matrix $\Delta\mathbf{S}$ shows additions to stocks, i.e. products that have not become materials for treatment within the accounting period. The supply of materials for treatment ($\mathbf{W_V}$) represents an output flow from a human activity that remains in the technosphere and cannot directly (i.e. without further processing or emissions) displace another principal product of an activity. Stock additions ($\Delta\mathbf{S}$) is included in this because represents delayed supply of materials for treatment. The emissions matrix **B** represents the output of mass of emissions.

Balanced PSUT	Activities	Stock formation	Final use	Export	Import	Total
Products	V'				N_c	q
Stock additions (classified as products)	ΔS					
Materials for treatment (classified as products)	W_V				N_w	
Emissions	B					
Total	g'					

Products	U	s^+	Y	N_c	q
Materials for treatment (reclassified homegeous)	W_U			N_w	
Natural resources	R				
Total	g'				

Figure 6.1: Format of physical supply-use tables (PSUTs).

In the lower part of Figure 6.1 there are the inputs of material flows to activities. The use matrix **U** accounts for the use of intermediate products by domestic activities plus final consumption (**Y**), stock formation and change of inventories ($\mathbf{S^+}$) and exported products ($\mathbf{E_c}$) and materials for treatment ($\mathbf{E_w}$). Finally, the use of materials for treatment matrix ($\mathbf{W_U}$) accounts for the use of materials for treatment and the input of natural resources **R**.

The supply and use sides are perfectly balanced, from both the products and activities perspectives. This means that the mass of supplied products is equal to the mass of used

products and the inputs to the activities are equal to the outputs. Translated in formula the *product balance* can be traced as follows:

$$\mathbf{V}' \cdot \mathbf{i} + \mathbf{N_c} \cdot \mathbf{i} = \mathbf{U} \cdot \mathbf{i} + \mathbf{S}^+ \cdot \mathbf{i} + \mathbf{Y} \cdot \mathbf{i} + \mathbf{E_c} \cdot \mathbf{i} = \mathbf{q}$$

where $\mathbf{i}$ are proper summation vectors.
The *activity balance* for productive activities can be expressed as follows:

$$\mathbf{V} \cdot \mathbf{i} + \Delta\mathbf{S}'_\mathbf{a} \cdot \mathbf{i} + \mathbf{W}'_{\mathbf{W,a}} \cdot \mathrm{i} + \mathbf{B}'_\mathbf{a} \cdot \mathbf{i} = \mathbf{U}' \cdot \mathbf{i} + \mathbf{W_U}' \cdot \mathbf{i} + \mathbf{R}'_\mathbf{a} \cdot \mathbf{i} = \mathbf{g_a}$$

The *activity balance* for accumulation and final uses can be expressed as follows:

$$\Delta\mathbf{S}'_\mathbf{f} \cdot \mathbf{i} + \mathbf{W}'_{\mathbf{W,f}} \cdot \mathrm{i} + \mathbf{B}'_\mathbf{f} \cdot \mathbf{i} = [\mathbf{S}^+ \cup \mathbf{Y}]' \cdot \mathbf{i} + \mathbf{R}'_\mathbf{f} \cdot \mathbf{i} = \mathbf{g_f}$$

6.3 Disaggregation of some specific activities in order to trace recycling activities, incineration and landfilling.

Usually the classification adopted constructing SUTs aggregate the production from virgin and from secondary materials. This is a limit if we intend to model recycling separately; hence these industries need to be disaggregated. In classification systems such as ISIC (united Nation, 2014) or NACE (Eurostat, 1996), the aggregation of production from virgin and secondary materials is a consequence of the economic criteria used to allocate an enterprise in the proper activity category. It is the principal production, identified as that one with the highest value added (Eurostat, 1996), which determines where to allocate an enterprise. In this way, since most of the times the sale of products from secondary materials is more profitable than the recycling service, which often is not remunerated, the production from secondary materials is classified together with production from virgin materials. There are also cases where virgin production and recycling are groped together because take place within the same process, e.g. glass manufacturing, where it is common practise to use a mix of virgin feedstock (silicate sand) and secondary feedstock (glass cullets), and steel production in electric arc furnace, where iron ore is added to the main feedstock (scrap) to control temperature.
Technically, the distinction between virgin production and recycling is very important because the two activities perform differently, for instance the emissions caused by the production from secondary materials are significantly different from that using virgin materials. Furthermore, the production from secondary materials implies also a service of recycling (waste treatment) that the production from virgin materials does not perform.
Below, in Figure 6.2, it is illustrated how joint or combined virgin/recycling activities are disaggregated in the DESIRE approach. It is important to notice that the following approach is purely technical and goes beyond the economic criteria; highest value added. The approach is further described in relation to the so-called point of substitution, i.e. where an output of a re-processing activity can substitute a principal product of one of the other activities in the SUT.
Firstly, the disaggregation is done if an activity includes stages both before and after the point of substitution, where the primary material can substitute the secondary material. Since only the part of the activity before the point of substitution will be affected, the activity is disaggregated into two activities: one before and one after the point of substitution, see Figure 6.2.

Secondly, the activity before the point of substitution is disaggregated into an activity producing virgin material, and a service activity having inputs of materials for treatment and providing as by-products the goods from recycled sources that can substitute virgin materials. This disaggregation will, in some cases, reflect a hypothetic situation because some material producing industries use a mix of primary raw materials and waste materials as inputs in order to produce their principal product, e.g. glass manufacture. The disaggregation is nevertheless necessary to allow correct modelling of recycling.

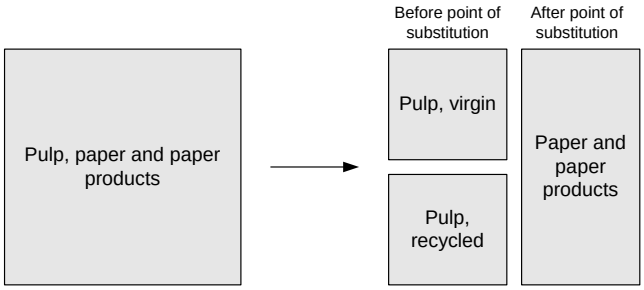

Figure 6.2: Disaggregation of activities by point of substitution and by recycled/virgin, using pulp, paper and paper products as example.

All the resulting recycling or re-processing activities have a service of recycling (waste treatment) as principal production (diagonal product in the supply table) and the product from secondary materials as by-product. In the DESIRE approach, products from virgin and secondary materials are considered homogenous in the PSUTs, hence they are structured in the same row.
With regard to landfilling and incineration, because the performance relies strongly on the incoming type of waste, the DESIRE approach operates a disaggregation according to the input of materials for treatment.
This because there could be that some materials for treatment are inert, other hazardous and each one may have a different calorific value and a different production of pollutants. For example the incineration of wood has completely different heat and electricity production than the incineration of glass. Similar examples are can be done for landfills.

6.4 Calculation of PSUTs

The calculation of the PSUTs is a two-step procedure. The first step implies the calculation of default accounts making use of the collected data and the MSUTs. The second step consists of a balancing algorithm that imposes the mass balance for activities and products. In the following we explain more in detail the adopted procedure

6.4.1 Calculation of default matrices

Matrices V' and U

Once the disaggregated MSUTs are created, the collected physical domestic supply is distributed along the activities according to the monetary supply table, hence assuming homogenous prices. The **V'** matrix is so determined with a product by activity[8] format and is kept constant in the algorithm.
In an analogous way the matrix **U** is calculated. Using the use matrix of MSUTs and the collected physical trade data, the domestically used physical products are distributed

[8] Hereafter, when indicating activity we also include in domestic final consumers. Exports are excluded.

assuming homogenous prices. A default **U** matrix is determined too, with a product by activity format.

Emission table E

The emissions account **E** refers to the flows of materials from activities in the technosphere to the environment. Thereby the emission table excludes everything that is still included in the production system to be treated by human activities, i.e. materials for treatment.

The emissions table will be created by mean of emission factors. Emission factors may be defined relative to a certain input (product, material for treatment or resource) or to the output of products (supply) of an activity. The latter is often referred to as process emissions. An example where the latter is relevant is N_2O emissions from fertiliser production.

In some cases emission factors may also be defined mutually with activity-specific flow balances, e.g. animal metabolism balance of feed input (several feed products + grass resources) equals product output (meat + milk), respiratory water, CO_2 and CH_4, and excretion and urine.

The emission factors multiplied by specific inputs or outputs, which are accounted in the initial matrices **U** and **V**, determine a default emission table **E,** with a emission by activity format.

Natural resources table R

This account refers to the flows from biosphere entering the productive system. In this way the matrix **R** takes into account what the domestic human activities require to the environment to carry out their output and to satisfy their needs. The format of matrix **R** is natural resources by activities.

The **R** matrix is accounted as dry matter. Inputs of oxygen to combustion processes are included.

A complicating issue for combustion processes is to determine the proportion of nitrogen in NO_x emissions that originates from atmospheric nitrogen (this is a resource input) and how much that originates from the combusted product's content of nitrogen. For simplifying reasons, it is decided to assume that half of the nitrogen originates from the atmosphere and half from the combusted products. In cases where this causes mass balance problems, the assumption can be adjusted for the specific activity.

The table **R** is constructed in conjunction with the columns of the supply table which concern resource extracting activities. Hence, it is ensured that the proportion between the supplied products and the extracted natural resources reflects what is lost of the extracted natural resources as emissions and materials for treatment within the resource extracting activity. The format of **R** is resource by activity.

Use of waste account W_U

The table $\boldsymbol{W_U}$ is obtained multiplying the supply of waste services by activities for efficiency factors. E.g. usually 0.9 kg pulp (by-product) will be produced per 1 kg recycled paper waste in the recycling of waste paper activity. Hence, when the by-products are known (supply table) and the proportions between input of materials for treatment and by-products are known, the associated elements in the $\mathbf{W_U}$ table can be derived. The format is type of waste by activities.

6.4.2 The balancing algorithm

The balancing algorithm is thought in order to assure a mass balance within the economies. Mass balance is requested to activities and products. Hence, the algorithm modifies the default tables and, furthermore, generates the remaining accounts.

The main idea

The main idea behind the algorithm is that for each of the types of inputs there are only three plausible fates as described in Figure 6.3 (Schmidt et al., 2010).

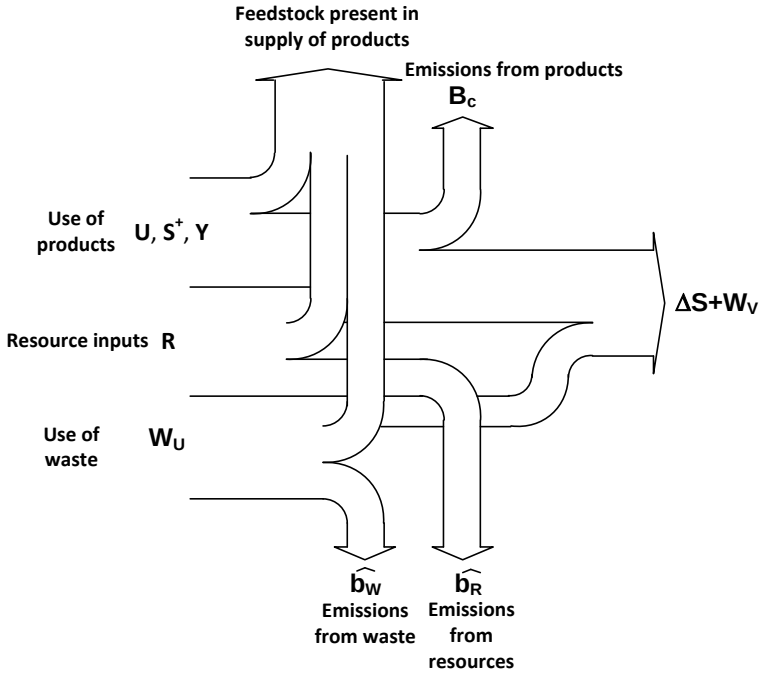

Figure 6.3: Principal fate of any input to an activity. Based on physical supply-use tables inclusive emissions and natural resources as well as some transfer-coefficients, the stock additions plus materials for treatment can be calculated.

Transfer coefficients and mass balance

Transfer coefficients, which also include the inverse of waste treatment efficiencies, determines how much of an input is embodied in the supply of products.
A transfer coefficient f_0 is defined to specify the proportion of the total mass of an input to an activity that is present in the supply of products of the same activity. f_0 falls in the interval [0;1]. A value equal to 0 can indicates:

1) that no of the extracted natural resources are present in the product output;
2) that no natural resources are extracted in the given activity.

In the algorithm upper and lower limits are introduced for each f_0. The algorithm determines the final values of transfer coefficients; therefore the latter are endogenous variables.
Likewise, emission factors *e* determines how much is emitted to the environment. Emission factors are exogenous and do not change in the algorithm. It follows that the upper limit of the transfer coefficient cannot be higher than (1-*e*) in order to have a plausible mass balance.

The mass balance is the constraint that shapes the transfer coefficients. In other words, it is assumed that the sum of inputs times the transfer coefficients must be equal to the mass of supplied products. This relation is valid for each and every activity. To obtain that, in most of the cases a redistribution of products is necessary and, therefore, the assumption of homogenous prices falls.

Waste tables and stock addition

The residual part of an input that is neither embodied in the final products nor emitted determines the supply of waste plus stock addition. This aggregate is defined as *potential waste.* For the determination of the stock addition matrix it is applied a generalized approach. In practice, it is assumed that stock addition can be also determined, other than in the proper column of stock addiction, within activities and final consumers. Stock addition within activities, and final consumers, occurs in relation to the input of specific *stock products*, such as machineries, construction works, vehicles, etc. Notice that the stock addition is disaggregated according to inputs embody in it.

Then, the algorithm can determine the supply of waste for the part that is generated by the exchange of intermediate products. This part, which is named *waste from intermediate products*, is obtained by removing the stock accumulation from the *potential waste*[9].

However, in a given accounting year, waste is not only produced by intermediate products but also by the obsolescence of products accounted in the stock addition in both the current and the previous accounting periods. This aggregate is defined as *waste from stock accumulation* and is equal to the waste discharged due to the degradation of new accumulated stocks, plus the part of stock accumulated in the previous years that is degraded in the current accounting period.

Be **L** as a *stock degradation matrix* (or product lifetime tables) that indicates how much of the stock addition becomes waste in a certain year of the lifetime of a specific type of stock. In other words, L indicates, for each year of the lifetime, the ratio of the stock that degrades becoming waste. Therefore, the format of L is number of lifetime years (y) by stock products (p). We assume that the stock products have the same classification adopted for products in the general framework. Because a stock product degrades completely during its lifetime, the sum of ratios for each of them is equal to 1.

$$\sum_y L[y,p] = 1 \qquad \nabla\, p \,\epsilon\, P$$

where P is the set of stock products. The adopted product lifetime table consist of average lifetimes of the products. With regard to the distribution of the degradation, as a default, we will use a symmetric triangular distribution around the average.

We can now move to calculate the total quantity of waste from stock accumulation in an accounting period. This amount is calculated according to the following formula:

$$Wstock_p^t = \sum_{k=1}^{t} (\Delta s_p^k \cdot L_p^{t-k+1})$$

Therefore, the *total supply of waste* is obtained summing up the supply of waste from intermediate products to the total quantity of waste from accumulated stocks. Notice that

[9] In case of final consumers as households, intermediate products indicate non-durable goods. Likewise, stock addition indicate durable goods.

the total supply of waste tables has so far a format product/resource/waste by activity. We need then to convert in a waste by activity format so that supply and use of waste tables have the same format. This is performed via a 3-dimensional conversion matrix **Q**, which has product by activity by waste format.
Finally, the algorithm determines the *supply of unregistered waste as* difference between the total supply of waste and the use of waste.

6.5 Data sources

For the construction of PSUTs many data sources are used. Some have already been described above (see Section 1.3 and Section 2). Other are derived derectly from MSUTs divided by prices. In particular, prices of the year 2007, which are included in EXIOBASE, are multiplied by price indices to get prices for the remaining years of the time series.
in the following text we include only some of the most important sources, which are missing above, and that are crucial for the construction of PSUTs and waste tables. An interested reader can see Merciai et al (2013) for a more exhaustive explanation of the sources.

Products of Agriculture, Fishery, Forestry and Food industry

The main source used for agricultural data is FAOSTAT (2014), which has the most reliable and complete data set for such accounts. Recently FAOSTAT. Yet additional information is sometimes required because the FAO focuses particularly on food production and for some categories only processed products are provided. This does not perfectly fit with the requirements of an input-output database, where also the raw materials have to be included in.
Therefore, additional data have been used for converting some of the transformed products, i.e. all the processed meat, which are outputs of food industry, in unprocessed materials produced by agricultural activities, which are accounted as live weight animals. These additional data consist of dressing percentages, i.e. the ratio of carcass weight to live animals expressed in percentages points, for the various animal categories taken into account. These values are assumed to be valid for all countries.
Table 6.1 shows the sources used for estimating the supply of products of Agriculture, Forestry, Fishery and Food Industry, while Table 6.2 the source of the dressing percentages.

No.	DESIRE name product code:	Source:
1	Paddy rice	FAOSTAT (2014)
2	Wheat	FAOSTAT (2014)
3	Cereal grains nec	FAOSTAT (2014)
4	Vegetables, fruit, nuts	FAOSTAT (2014)
5	Oil seeds	FAOSTAT (2014)
6	Sugar cane, sugar beet	FAOSTAT (2014)
7	Plant-based fibers	FAOSTAT (2014)
8	Crops nec	FAOSTAT (2014)
9	Cattle	own elaborations of FAOSTAT (2014)
10	Pigs	own elaborations of FAOSTAT (2014)
11	Poultry	own elaborations of FAOSTAT (2014)
12	Meat animals nec	own elaborations of FAOSTAT (2014)
13	Animal products nec	FAOSTAT (2014)
14	Raw milk	own elaborations of FAOSTAT (2014)
15	Wool, silk-worm cocoons	own elaborations of FAOSTAT (2014)
16	Products of forestry, logging and related services (02)	FAOSTAT (2014)
17	Fish and other fishing products; services incidental of fishing (05)	FAOSTAT (2014)
18	Products of meat cattle	FAOSTAT (2014)
19	Products of meat pigs	FAOSTAT (2014)
20	Products of meat poultry	FAOSTAT (2014)
21	Meat products nec	FAOSTAT (2014)
22	products of Vegetable oils and fats	FAOSTAT (2014)
23	Dairy products	FAOSTAT (2014)
24	Processed rice	derivaded from monetary data
25	Sugar	FAOSTAT (2014)
26	Food products nec	derivaded from monetary data
27	Beverages	derivaded from monetary data
28	Fish products	derivaded from monetary data
29	Tobacco products (16)	derivaded from monetary data

Table 6.1: Data sources of agricultural products

Animal:	Dressing percentage:	Source:
Beef	60	FAO (1991)
Pork	70	FAO (1991)
Lamb	50	FAO (1991)
Chicken, broilers	70	Verheijen et al. (1996)
Chicken, capon	68	Verheijen et al. (1996)
Turkey, broiler	77	Verheijen et al. (1996)
Duck, Peking	58	Verheijen et al. (1996)
Pheasant	78	Verheijen et al. (1996)
Horse	62	Badiani et al. (1993); Lacheretz et al. (1990)
Camel	55.8	Yousif and Babiker (1989)
Goat	43	Schoenian (2009)
Rabbit	60	MSU (2010)

Table 6.2: Dressing (carcass/live weight) percentages of various animals and references

Service of waste treatment

The accounting of waste treatment service supply is on of the most challenging task. Often, waste has no economic value, is composed of different fractions frequently mixed together, reused in industrial processes or illegally dumped. All this can give an idea on how the accounting of waste is a really difficult task.

It has not always possible to extract data from one source, so many different sources have been used simultaneously and many elaborations have been required.
For the European Union countries a very comprehensive source is the Eurostat database on waste accounts (Eurostat 2012). Here quite a detailed account of the different waste fractions divided according to the waste treatment is provided. Nonetheless some other further information needs to be collected since the detail required in DESIRE is higher than that reported by Eurostat.
Other good sources for the waste treatment service in particular of metals are represented by the US Geological Surveys, Associations of Producers such as the Worldsteel Association and the European Aggregates Association, and other international organizations such as the International Copper Study Group. These data can be directly incorporated in the DESIRE database.
For non-European countries some good comprehensive data are made available by some National Offices (for example United States and Canada), while in some cases alternative data sources are used. This consists of partial data provided by national studies, international organization reports (OECD, IEA and FAOSTAT), scientific journals and specialized web pages. All this amount of information is structured and further elaborated to match with the DESIRE framework.
Table 6.3 shows the main sources that are used for the supply of waste services for the year 2007. When waste treatment services data are not available for the required years of the time series, data of 2007 are projected to cover these missing periods.

	Waste treatment service:	Source:
1	Manure (conventional treatment)	FAOSTAT(2014); IPCC (2006); own elaborations;
2	Manure (biogas treatment)	FAOSTAT(2014); IPCC (2006); AEBIOM (2009); own elaborations;
3	Secondary paper for treatment, Re-processing of secondary paper into new pulp	EUROSTAT (2012); EPA (2008); WRAP (2011); Hyder consulting (2009); OECD (2010); Perele and Solovyeva (2011); DETEC-FOEN (2008); Ecolamancha (2008) ; own elaborations;
4	Wood material for treatment, Re-processing of secondary wood material into new wood material	EUROSTAT (2012); EPA (2008); Hyder consulting (2009); FAOSTAT(2014); Ecolamancha (2008) ; own elaborations;
5	Secondary plastic for treatment, Re-processing of secondary plastic into new plastic	EUROSTAT (2012); EPA (2008); Hyder consulting (2009); OECD (2010); CEMPRE (2010); Statistics Canada(2008); Perele R. and Solovyeva S. (2011); DETEC-FOEN (2008); Ecolamancha (2008) ; own elaborations;
6	Secondary glass for treatment, Re-processing of secondary glass into new glass	EUROSTAT (2012); EPA (2008); Hyder consulting (2009); CEMPRE (2010); Statistics Canada(2008); DETEC-FOEN (2008); Ecolamancha (2008) ; own elaborations;
7	Ash for treatment, Re-processing of ash into clinker	Smith I. (2005); own elaborations;
8	Secondary construction material for treatment, Re-processing of secondary construction material into aggregates	UEPG (2008); EPA (2003); Statistics Canada(2008); Hyder consulting (2009); BGS (2012); own elaborations;
9	Secondary steel for treatment, Re-processing of secondary steel into new steel	Worldsteel Association (2010); USGS (2012);
10	Secondary preciuos metals for treatment, Re-processing of secondary preciuos metals into new preciuos metals	USGS (2012);
11	Secondary aluminium for treatment, Re-processing of secondary aluminium into new aluminium	USGS (2012);
12	Secondary lead for treatment, Re-processing of secondary lead into new lead	USGS (2012);
13	Secondary copper for treatment, Re-processing of secondary copper into new copper	ICSG (2010); USGS (2012);
14	Secondary other non-ferrous metals for treatment, Re-processing of secondary other non-ferrous metals into new other non-ferrous metals	USGS (2012);
15	Bottles for treatment, Recycling of bottles by direct reuse	JCPRA(2013); Heinisch J. (2009); Brewers of Europe (2010); own elaborations;
16	Incineration of waste: Food	EUROSTAT (2012); EPA (2008);Hyder consulting (2009); Statistics Canada(2008); National Bureau of Statistics China (2008); Chen X. et al. (2010); Perele R. and Solovyeva S. (2011); IEA (2010); Christensen T. H. (1998); own elaborations;

Table 6.3: Sources used for the account of waste service supply (continued)

17	Incineration of waste: Paper	EUROSTAT (2012); EPA (2008); DETEC-FOEN (2008); Statistics Canada(2008); National Bureau of Statistics China (2008); Chen X. et al. (2010); Perele R. and Solovyeva S. (2011); IEA (2010); Christensen T. H. (1998); own elaborations;
18	Incineration of waste: Plastic	EUROSTAT (2012); EPA (2008); DETEC-FOEN (2008); Statistics Canada(2008); National Bureau of Statistics China (2008); Chen X. et al. (2010); Perele R. and Solovyeva S. (2011); IEA (2010); Christensen T. H. (1998); own elaborations;
19	Incineration of waste: Metals and Inert materials	EUROSTAT (2012); EPA (2008); DETEC-FOEN (2008); Statistics Canada(2008); National Bureau of Statistics China (2008); Chen X. et al. (2010); Perele R. and Solovyeva S. (2011); IEA (2010); Christensen T. H. (1998); own elaborations;
20	Incineration of waste: Textiles	EUROSTAT (2012); EPA (2008); DETEC-FOEN (2008); Statistics Canada(2008); National Bureau of Statistics China (2008); Chen X. et al. (2010); Perele R. and Solovyeva S. (2011); IEA (2010); Christensen T. H. (1998); own elaborations;
21	Incineration of waste: Wood	EUROSTAT (2012); EPA (2008);DETEC-FOEN (2008); Statistics Canada(2008); National Bureau of Statistics China (2008); Chen X. et al. (2010); Perele R. and Solovyeva S. (2011); IEA (2010); Christensen T. H. (1998); own elaborations;
22	Incineration of waste: Oil/Hazardous waste	EUROSTAT (2012); EPA (2008); DETEC-FOEN (2008); Statistics Canada(2008); National Bureau of Statistics China (2008); Chen X. et al. (2010); Perele R. and Solovyeva S. (2011); IEA (2010); Christensen T. H. (1998); own elaborations;
23	Biogasification of food waste, incl. land application	Levis J.W. et al., (2010); AEBIOM (2009); EUROSTAT (2012); EPA (2010; 2011); own elaborations;
24	Biogasification of paper, incl. land application	Levis J.W. et al., (2010); AEBIOM (2009); EUROSTAT (2012); EPA (2010; 2011); own elaborations;
25	Biogasification of sewage slugde, incl. land application	Levis J.W. et al., (2010); AEBIOM (2009); EUROSTAT (2012); EPA (2010; 2011); own elaborations;
26	Composting of food waste, incl. land application	EUROSTAT (2012); EPA (2008); OECD(2010); IBGE (2002); Statistics Canada(2008); Chen X. et al. (2010); own elaborations;
27	Composting of paper and wood, incl. land application	EUROSTAT (2012); EPA (2008); IBGE (2002); Statistics Canada(2008); Chen X. et al. (2010); own elaborations;
28	Waste water treatment, food	EUROSTAT (2012); EPA (2008); FAOSTAT(2014); DETEC-FOEN (2008); Statistics Canada(2008); own elaborations;
29	Waste water treatment, other	EUROSTAT (2012); EPA (2008); DETEC-FOEN (2008); Statistics Canada(2008); own elaborations;
30	Landfill of waste: Food	EUROSTAT (2012); EPA (2008); Hyder consulting (2009); Statistics Canada(2008); National Bureau of Statistics China (2008); Zhang D. Q et al. (2010); Jelenska E. (2010); CEMPRE (2010); Ecolamancha (2008) ; Christensen T. H. (1998); own elaborations;
31	Landfill of waste: Paper	EUROSTAT (2012); EPA (2008); Hyder consulting (2009); Statistics Canada(2008); National Bureau of Statistics China (2008); Zhang D. Q et al. (2010); Jelenska E. (2010); CEMPRE (2010); Ecolamancha (2008) ; Christensen T. H. (1998); own elaborations;
32	Landfill of waste: Plastic	EUROSTAT (2012); EPA (2008); Hyder consulting (2009); Statistics Canada(2008); National Bureau of Statistics China (2008); Zhang D. Q et al. (2010); Jelenska E. (2010); CEMPRE (2010); Ecolamancha (2008) ; Christensen T. H. (1998); own elaborations;
33	Landfill of waste: Inert/metal/hazardous	EUROSTAT (2012); EPA (2008); Hyder consulting (2009); Statistics Canada(2008); National Bureau of Statistics China (2008);Zhang D. Q et al. (2010); Jelenska E. (2010); CEMPRE (2010); Ecolamancha (2008) ; Christensen T. H. (1998); own elaborations;
34	Landfill of waste: Textiles	EUROSTAT (2012); EPA (2008); Hyder consulting (2009); Statistics Canada(2008); National Bureau of Statistics China (2008); Zhang D. Q et al. (2010); Jelenska E. (2010); CEMPRE (2010); Ecolamancha (2008) ; Christensen T. H. (1998); own elaborations;
35	Landfill of waste: Wood	EUROSTAT (2012); EPA (2008); Hyder consulting (2009); Statistics Canada(2008); National Bureau of Statistics China (2008); Zhang D. Q et al. (2010); Jelenska E. (2010); CEMPRE (2010); Ecolamancha (2008) ; Christensen T. H. (1998); own elaborations;

Table 5.4 (continued); Sources used for the account of waste service supply

7 Conclusion and next steps

Building a time series of MRIO is a data intensive task. Multiple data sources need to be read, refined and incorporated in the final MRIO table time series.

In DESIRE, we build upon the experiences from the previous CREEA project to update EXIOBASE 2 to EXIOBASE 3. The procedures set up first in CREEA are used as starting point for developing tools for automatic data reading and processing. However, inconsistencies found within and among international and national databases challenges the automation process. Especially varying classifications cause a lot of manual work in order to get the required information. This interim report describes how we solved these problems.

In general we followed the plan outlined in D5.1. Based on the results obtained so far the next steps and time plan for the remaining time of this work package consists of:

- November
  - Finish the monetary trade link cube
  - Incorporate trade linking and industry output into the MSUT compilation script
  - Material extensions until 2010
  - Refine FAOstat production data
  - Refined 2007 EXIOBASE 2 coefficents
  - Work for the other extensions ongoing
  - Draft the first now-casting procedure

- December:
  - Finalise all monetary and macro resource accounts
  - Compile the MRIO table time series in current prices
  - Test the now-casting procedure with the available data

- January:
  - Analyse and debug (if necessary) the MRIO time series
  - Gather price information (contant prices)
  - Calculate the now-casted MRIO tables

- February:
  - Update the database based on the debugging process and additional data
  - Build the constant price MRIO time series
  - Calculate the EE IO based 'macro resource' indicators based on the final MRIO time series and the now-casted data
  - Write the final report

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Appendix 2-A Macro economic database

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Version: 20131105

Current Git commit: 20f34102057db5ecd206b96797bf6dff52691c7a

Data inputs

- **UN SNA main agg**
  - Downloaded: 27.08.2013
  - Source: http://unstats.un.org/unsd/snaama/dnlList.asp
  - Latest update: December 2012
  - Available in current prices and constant 2005 USD
- **Taiwan economic data**
  - Downloaded: 26.08.2013
  - Source: http://eng.stat.gov.tw/ct.asp?xItem=25763&CtNode=5347&mp=5
  - Latest update: 23.11.2012
  - The detailed tables form the statistical office Taiwan were aggregated to the UN SNA main agg classification
  - Constant 2006 NTD were converted to constant 2005 NTD based on deflator values from the statistical office
  - NTD were converted to USD based on exchange rate given by the statistical office
- **EUROSTAT**
  - Only used for exchange rates USD - EURO
  - Downloaded: 14.10.2013
  - Source: http://epp.eurostat.ec.europa.eu/portal/page/portal/exchange_rates/data/database
    - Exchange rates (ert)
    - Bilateral exchange rates (ert_bil)
    - Euro/ECU exchange rates (ert_bil_eur)
    - Euro/ECU exchange rates - annual data (ert_bil_eur_a)
  - Last update: 07.10.13

Differenes including Taiwan in the final dataset

Including Taiwan reduced differences of the global sum compared to the sum of countries:

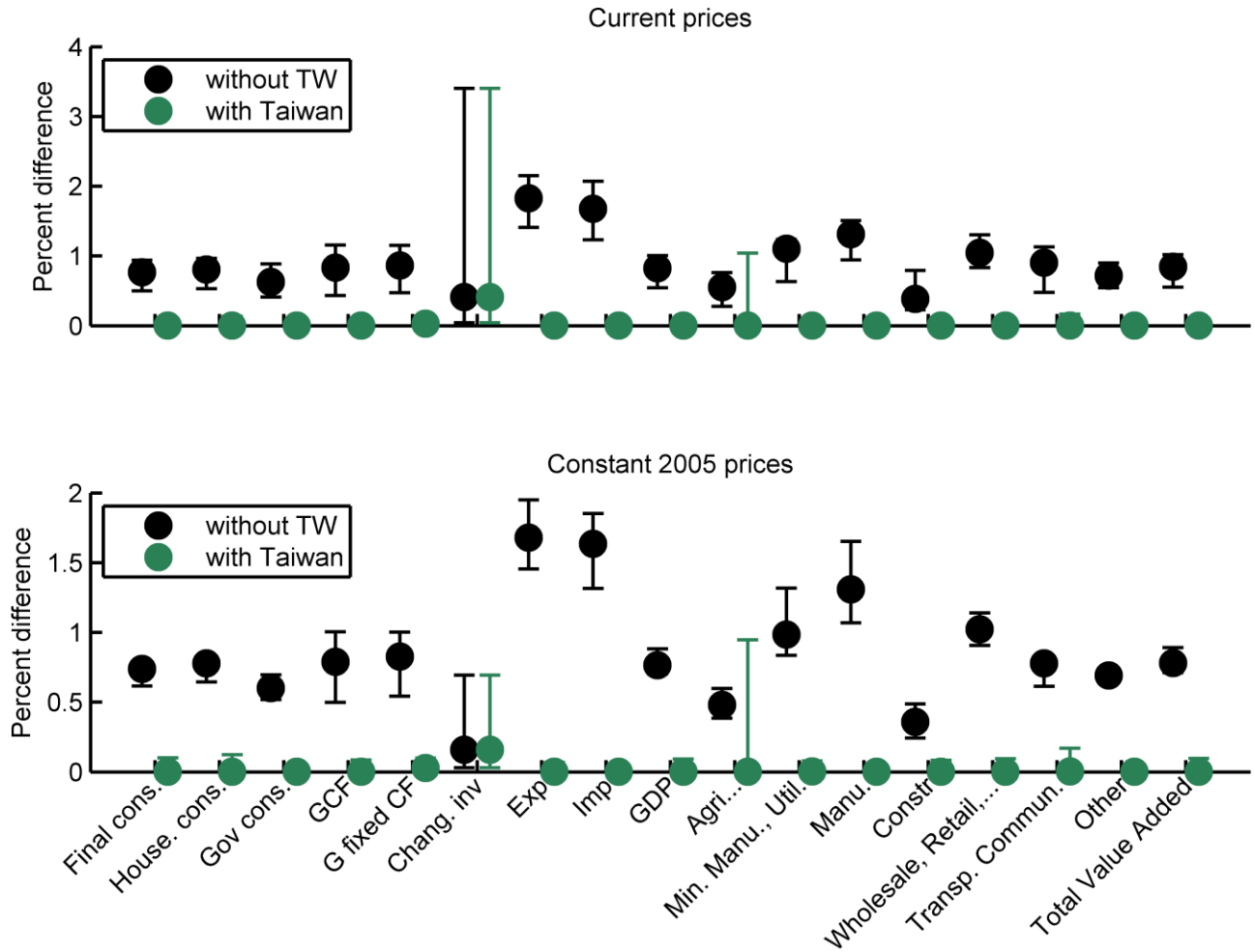

Figure 1: Percent differences global sum as given in the UN SNA main aggregates database vs. sum of all countries (all countries in the UN database with or without Taiwan data from the statistical office). Median value, errorbars: min value to max value

	Final cons.	House. cons.	Gov cons.	GCF	G fixed CF	Chang. inv	Exp	Imp	GDP	Agri...	Min. Manu., Util.	Manu.	Constr	Wholesale, Retail,...	Transp. Commun.	Other	Total Value Added
Current prices - without TW	0.77% (0.50% - 0.94%)	0.80% (0.53% - 0.97%)	0.63% (0.41% - 0.89%)	0.83% (0.43% - 1.15%)	0.86% (0.47% - 1.15%)	0.41% (0.04% - 3.40%)	1.82% (1.41% - 2.15%)	1.68% (1.23% - 2.07%)	0.83% (0.54% - 1.01%)	0.55% (0.28% - 0.76%)	1.10% (0.63% - 1.24%)	1.31% (0.94% - 1.51%)	0.38% (0.23% - 0.79%)	1.05% (0.83% - 1.30%)	0.90% (0.48% - 1.13%)	0.72% (0.54% - 0.90%)	0.84% (0.55% - 1.02%)
Current prices - with TW	0.00% (0.00% - 0.11%)	0.00% (0.00% - 0.13%)	0.00% (0.00% - 0.05%)	0.00% (0.00% - 0.10%)	0.03% (0.00% - 0.12%)	0.41% (0.04% - 3.40%)	0.00% (0.00% - 0.06%)	0.00% (0.00% - 0.07%)	0.00% (0.00% - 0.11%)	0.00% (0.00% - 1.04%)	0.00% (0.00% - 0.11%)	0.00% (0.00% - 0.06%)	0.00% (0.00% - 0.09%)	0.00% (0.00% - 0.11%)	0.00% (0.00% - 0.17%)	0.00% (0.00% - 0.05%)	0.00% (0.00% - 0.11%)
Constant prices	0.74% (0.62	0.78% (0.64	0.60% (0.52	0.79% (0.50	0.83% (0.54	0.16% (0.03	1.68% (1.45	1.64% (1.32	0.76% (0.70	0.48% (0.38	0.98% (0.84	1.31% (1.07	0.36% (0.24	1.02% (0.91% -	0.78% (0.61%	0.69% (0.63	0.78% (0.71

- without TW	% - 0.76%)	% - 0.80%)	% - 0.70%)	% - 1.00%)	% - 1.00%)	% - 0.69%)	% - 1.95%)	% - 1.85%)	% - 0.88%)	% - 0.60%)	% - 1.32%)	% - 1.65%)	% - 0.49%)	1.14%)	- 0.83%)	% - 0.71%)	% - 0.89%)
Constant prices - with TW	0.00% (0.00% - 0.10%)	0.00% (0.00% - 0.12%)	0.00% (0.00% - 0.03%)	0.00% (0.00% - 0.08%)	0.03% (0.00% - 0.10%)	0.16% (0.03% - 0.69%)	0.00% (0.00% - 0.07%)	0.00% (0.00% - 0.05%)	0.00% (0.00% - 0.09%)	0.00% (0.00% - 0.95%)	0.00% (0.00% - 0.08%)	0.00% (0.00% - 0.04%)	0.00% (0.00% - 0.08%)	0.00% (0.00% - 0.09%)	0.00% (0.00% - 0.17%)	0.00% (0.00% - 0.03%)	0.00% (0.00% - 0.10%)

Final dataset

Available in current prices and constant 2005 USD and EURO

Countries in the final Macro Economic Database

Afghanistan,Albania,Algeria,Andorra,Angola,Anguilla,Antigua and Barbuda,Argentina,Armenia,Aruba,Australia,Austria,Azerbaijan,Bahamas,Bahrain,Bangladesh,Barbados,Belarus,Belgium,Belize,Benin,Bermuda,Bhutan,Bolivia,Bosnia and Herzegovina,Botswana,Brazil,British Virgin Islands,Brunei Darussalam,Bulgaria,Burkina Faso,Burundi,Cambodia,Cameroon,Canada,Cape Verde,Cayman Islands,Central African Republic,Chad,Chile,China, People's Republic of,China: Hong Kong SAR,China: Macao SAR,Colombia,Comoros,Congo,Cook Islands,Costa Rica,Croatia,Cuba,Cyprus,Czech Republic,CÃ´te d'Ivoire,Democratic People's Republic of Korea,Democratic Republic of the Congo,Denmark,Djibouti,Dominica,Dominican Republic,Ecuador,Egypt,El Salvador,Equatorial Guinea,Eritrea,Estonia,Ethiopia,Fiji,Finland,France,French Polynesia,Gabon,Gambia,Georgia,Germany,Ghana,Greece,Greenland,Grenada,Guatemala,Guinea,Guinea-Bissau,Guyana,Haiti,Honduras,Hungary,Iceland,India,Indonesia,Iran (Islamic Republic of),Iraq,Ireland,Israel,Italy,Jamaica,Japan,Jordan,Kazakhstan,Kenya,Kiribati,Kosovo,Kuwait,Kyrgyzstan,Lao People's Democratic Republic,Latvia,Lebanon,Lesotho,Liberia,Libya,Liechtenstein,Lithuania,Luxembourg,Madagascar,Malawi,Malaysia,Maldives,Mali,Malta,Marshall Islands,Mauritania,Mauritius,Mexico,Micronesia (Federated States of),Monaco,Mongolia,Montenegro,Montserrat,Morocco,Mozambique,Myanmar,Namibia,Nauru,Nepal,Netherlands,Netherlands Antilles,New Caledonia,New Zealand,Nicaragua,Niger,Nigeria,Norway,Occupied Palestinian Territory,Oman,Pakistan,Palau,Panama,Papua New Guinea,Paraguay,Peru,Philippines,Poland,Portugal,Puerto Rico,Qatar,Republic of Korea,Republic of Moldova,Romania,Russian Federation,Rwanda,Saint Kitts and Nevis,Saint Lucia,Samoa,San Marino,Sao Tome and Principe,Saudi Arabia,Senegal,Serbia,Seychelles,Sierra Leone,Singapore,Slovakia,Slovenia,Solomon Islands,Somalia,South Africa,South Sudan,Spain,Sri Lanka,St. Vincent and the Grenadines,Sudan,Sudan (Former),Suriname,Swaziland,Sweden,Switzerland,Syrian Arab Republic,Tajikistan,Thailand,The Former Yugoslav Republic of Macedonia,Timor-Leste,Togo,Tonga,Trinidad and Tobago,Tunisia,Turkey,Turkmenistan,Turks and Caicos Islands,Tuvalu,Uganda,Ukraine,United Arab Emirates,United Kingdom,United Republic of Tanzania: Mainland,United States,Uruguay,Uzbekistan,Vanuatu,Venezuela,Viet Nam,Yemen,Zambia,Zanzibar,Zimbabwe,Taiwan,

Categories in the final Macro Economic Database

Final consumption expenditure

Household consumption expenditure (including Non-profit institutions serving households)

General government final consumption expenditure
Gross capital formation
Exports of goods and services
Imports of goods and services
Gross Domestic Product (GDP)
Agriculture, hunting, forestry, fishing (ISIC A-B)
Mining, Manufacturing, Utilities (ISIC C-E)
Manufacturing (ISIC D)
Construction (ISIC F)
Wholesale, retail trade, restaurants and hotels (ISIC G-H)
Transport, storage and communication (ISIC I)
Other Activities (ISIC J-P)

Data checks

Negative values were set to zero for

Constant prices

Nauru - Mining, Manufacturing, Utilities (ISIC C-E) - 1995
Nauru - Mining, Manufacturing, Utilities (ISIC C-E) - 1996
Nauru - Mining, Manufacturing, Utilities (ISIC C-E) - 1997
Nauru - Mining, Manufacturing, Utilities (ISIC C-E) - 2004
Nauru - Mining, Manufacturing, Utilities (ISIC C-E) - 2005
Swaziland - Gross capital formation - 2006
Nauru - Mining, Manufacturing, Utilities (ISIC C-E) - 2006
Nauru - Manufacturing (ISIC D) - 2006
Swaziland - Gross capital formation - 2007
Nauru - Transport, storage and communication (ISIC I) - 2007
Swaziland - Gross capital formation - 2008
Swaziland - Gross capital formation - 2010
Swaziland - Gross capital formation - 2011

Current prices

Nauru - Mining, Manufacturing, Utilities (ISIC C-E) - 1995
Nauru - Mining, Manufacturing, Utilities (ISIC C-E) - 1996
Nauru - Mining, Manufacturing, Utilities (ISIC C-E) - 1997
Nauru - Mining, Manufacturing, Utilities (ISIC C-E) - 2004
Nauru - Mining, Manufacturing, Utilities (ISIC C-E) - 2005
Nauru - Mining, Manufacturing, Utilities (ISIC C-E) - 2006
Nauru - Manufacturing (ISIC D) - 2006
Nauru - Transport, storage and communication (ISIC I) - 2007

Manufactoring bigger than Sector (Mining + Manufactoring and Utilities) - set to the max of both for

Constant prices

Lebanon - Mining, Manufacturing, Utilities (ISIC C-E) - 1995
Nauru - Mining, Manufacturing, Utilities (ISIC C-E) - 1995
Sudan (Former) - Mining, Manufacturing, Utilities (ISIC C-E) - 1995
Lebanon - Mining, Manufacturing, Utilities (ISIC C-E) - 1996

Nauru - Mining, Manufacturing, Utilities (ISIC C-E) - 1996
Sudan (Former) - Mining, Manufacturing, Utilities (ISIC C-E) - 1996
Lebanon - Mining, Manufacturing, Utilities (ISIC C-E) - 1997
Nauru - Mining, Manufacturing, Utilities (ISIC C-E) - 1997
Sudan (Former) - Mining, Manufacturing, Utilities (ISIC C-E) - 1997
Lebanon - Mining, Manufacturing, Utilities (ISIC C-E) - 1998
Nauru - Mining, Manufacturing, Utilities (ISIC C-E) - 1998
Sudan (Former) - Mining, Manufacturing, Utilities (ISIC C-E) - 1998
Lebanon - Mining, Manufacturing, Utilities (ISIC C-E) - 1999
Nauru - Mining, Manufacturing, Utilities (ISIC C-E) - 1999
Lebanon - Mining, Manufacturing, Utilities (ISIC C-E) - 2000
Nauru - Mining, Manufacturing, Utilities (ISIC C-E) - 2000
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Lebanon - Mining, Manufacturing, Utilities (ISIC C-E) - 2004
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Lebanon - Mining, Manufacturing, Utilities (ISIC C-E) - 2005
Nauru - Mining, Manufacturing, Utilities (ISIC C-E) - 2005
Lebanon - Mining, Manufacturing, Utilities (ISIC C-E) - 2006
Lebanon - Mining, Manufacturing, Utilities (ISIC C-E) - 2007
Lebanon - Mining, Manufacturing, Utilities (ISIC C-E) - 2008
Lebanon - Mining, Manufacturing, Utilities (ISIC C-E) - 2009
Lebanon - Mining, Manufacturing, Utilities (ISIC C-E) - 2010
Ireland - Mining, Manufacturing, Utilities (ISIC C-E) - 2011
Lebanon - Mining, Manufacturing, Utilities (ISIC C-E) - 2011

8.1.1.1 Current prices

Nauru - Mining, Manufacturing, Utilities (ISIC C-E) - 1995
Nauru - Mining, Manufacturing, Utilities (ISIC C-E) - 1996
Nauru - Mining, Manufacturing, Utilities (ISIC C-E) - 1997
Nauru - Mining, Manufacturing, Utilities (ISIC C-E) - 1998
Nauru - Mining, Manufacturing, Utilities (ISIC C-E) - 1999
Nauru - Mining, Manufacturing, Utilities (ISIC C-E) - 2000
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Nauru - Mining, Manufacturing, Utilities (ISIC C-E) - 2003
Nauru - Mining, Manufacturing, Utilities (ISIC C-E) - 2004
Lebanon - Mining, Manufacturing, Utilities (ISIC C-E) - 2005
Nauru - Mining, Manufacturing, Utilities (ISIC C-E) - 2005
Lebanon - Mining, Manufacturing, Utilities (ISIC C-E) - 2006
Lebanon - Mining, Manufacturing, Utilities (ISIC C-E) - 2007
Lebanon - Mining, Manufacturing, Utilities (ISIC C-E) - 2008
Lebanon - Mining, Manufacturing, Utilities (ISIC C-E) - 2009
Lebanon - Mining, Manufacturing, Utilities (ISIC C-E) - 2010
Lebanon - Mining, Manufacturing, Utilities (ISIC C-E) - 2011

Balance global trade

Global trade was balance for equal imports / exports for each year - differences were compensated by changing gross cap formation

Required change per year (in USD)

Current prices (USD)

Year	Absolute change	Global trade
1995	1.41e+11	6.48e+12
1996	1.38e+11	6.80e+12
1997	1.61e+11	7.06e+12
1998	9.99e+10	6.95e+12
1999	7.39e+10	7.23e+12
2000	3.37e+10	8.03e+12
2001	1.69e+10	7.76e+12
2002	5.79e+10	8.15e+12
2003	7.50e+10	9.45e+12
2004	1.03e+11	1.14e+13
2005	1.65e+11	1.30e+13
2006	2.84e+11	1.50e+13
2007	3.71e+11	1.74e+13
2008	3.89e+11	1.99e+13
2009	3.56e+11	1.59e+13
2010	5.32e+11	1.91e+13
2011	6.08e+11	2.25e+13

Constant 2005 prices (USD)

Year	Absolute change	Global trade
1995	3.46e+11	6.83e+12
1996	3.39e+11	7.32e+12
1997	4.07e+11	8.07e+12
1998	3.51e+11	8.44e+12
1999	2.99e+11	8.88e+12
2000	3.25e+11	1.00e+13
2001	2.94e+11	1.01e+13
2002	3.10e+11	1.04e+13
2003	2.35e+11	1.09e+13
2004	1.94e+11	1.21e+13
2005	1.65e+11	1.30e+13
2006	2.04e+11	1.43e+13
2007	1.62e+11	1.53e+13
2008	2.18e+11	1.57e+13

2009	3.06e+11	1.43e+13
2010	2.85e+11	1.62e+13
2011	2.88e+11	1.73e+13

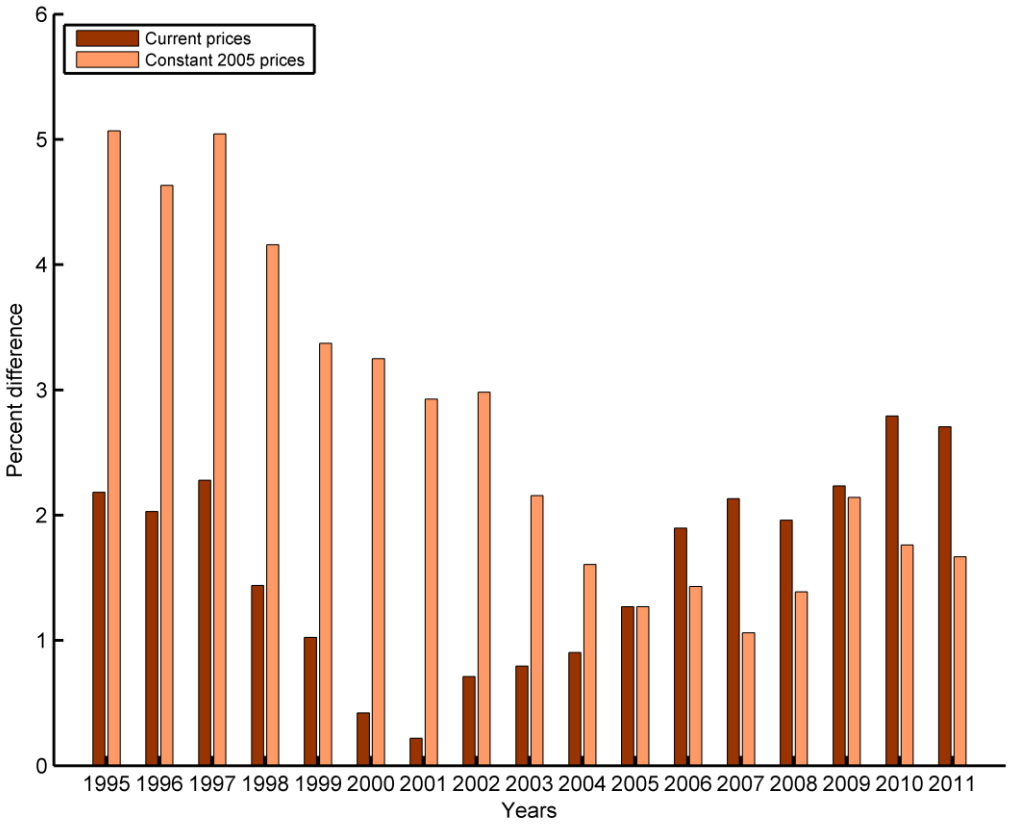


Figure 2: Relative change in trade required to balance global trade

Missing subcategories

Sub-category data missing for

Current prices

Democratic People's Republic of Korea

Constant prices

Democratic People's Republic of Korea
Swaziland

Missing data was estimated based on global shares

Balancing the dataset

All years balanced without problems

Current prices dataset

year	modelstat	solverstat
1995	1	1
1996	1	1
1997	1	1
1998	1	1
1999	1	1
2000	1	1
2001	1	1
2002	1	1
2003	1	1
2004	1	1
2005	1	1
2006	1	1
2007	1	1
2008	1	1
2009	1	1
2010	1	1
2011	1	1

Constant prices dataset

year	modelstat	solverstat
1995	1	1
1996	1	1
1997	1	1
1998	1	1
1999	1	1
2000	1	1
2001	1	1
2002	1	1
2003	1	1
2004	1	1
2005	1	1
2006	1	1
2007	1	1
2008	1	1
2009	1	1
2010	1	1
2011	1	1

Overall differences per country due to balancing of the dataset

Current prices - relative differences (absolute change / UN SNA initial entry: median (min - max)) over all years ()

Country	Final cons.	House. cons.	Gov cons.	GCF	Exp	Imp	GDP	Agri...	Min. Manu., Util.	Manu.	Constr	Wholesale, Retail,...	Transp. Commun.	Other
Afghanistan	0.32% (0.06% - 1.26%)	0.28% (0.02% - 1.34%)	0.33% (0.11% - 0.76%)	31.21% (5.10% - 78.56%)	0.15% (0.02% - 1.38%)	10.68% (0.17% - 14.01%)	0.01% (0.00% - 0.88%)	4.19% (0.38% - 16.07%)	6.47% (2.03% - 19.21%)	3.50% (0.25% - 8.48%)	1.81% (0.05% - 10.88%)	3.22% (0.71% - 14.41%)	1.05% (0.05% - 10.88%)	7.44% (2.39% - 21.46%)
Albania	0.26% (0.06% - 1.17%)	0.28% (0.01% - 1.26%)	0.22% (0.01% - 0.57%)	8.24% (0.63% - 27.72%)	0.19% (0.04% - 1.46%)	10.53% (0.10% - 14.53%)	0.01% (0.00% - 0.88%)	9.02% (1.48% - 14.80%)	12.12% (2.81% - 16.53%)	3.77% (0.01% - 8.64%)	5.53% (0.41% - 9.22%)	7.71% (3.14% - 9.17%)	3.74% (0.68% - 6.07%)	13.91% (2.04% - 16.81%)
Algeria	0.27% (0.04% - 1.14%)	0.30% (0.02% - 1.36%)	0.28% (0.02% - 0.66%)	7.48% (1.81% - 12.37%)	0.23% (0.04% - 1.41%)	10.51% (0.14% - 14.68%)	0.00% (0.00% - 0.87%)	2.27% (0.37% - 4.34%)	5.62% (4.06% - 6.89%)	3.77% (0.03% - 8.68%)	2.54% (0.06% - 4.96%)	2.56% (0.38% - 7.19%)	2.74% (0.07% - 6.17%)	6.61% (2.86% - 11.08%)
Andorra	0.28% (0.07% - 1.13%)	0.31% (0.03% - 1.32%)	0.25% (0.03% - 0.63%)	11.50% (2.23% - 21.27%)	0.20% (0.05% - 1.41%)	10.47% (0.14% - 14.58%)	0.01% (0.00% - 0.88%)	8.90% (7.69% - 18.47%)	12.94% (10.73% - 22.14%)	3.74% (0.08% - 8.37%)	6.19% (2.96% - 18.49%)	7.54% (4.97% - 22.43%)	3.83% (1.68% - 17.51%)	14.54% (11.60% - 21.48%)
Angola	0.33% (0.01% - 1.00%)	0.38% (0.01% - 1.20%)	0.31% (0.10% - 0.51%)	34.17% (9.48% - 60.24%)	0.21% (0.01% - 1.33%)	10.27% (0.23% - 14.39%)	0.01% (0.00% - 0.87%)	1.34% (0.00% - 3.64%)	2.60% (0.68% - 6.78%)	3.77% (0.03% - 8.68%)	2.25% (0.13% - 7.46%)	2.50% (0.47% - 4.33%)	5.29% (1.45% - 8.73%)	3.35% (1.15% - 8.72%)
Anguilla	0.32% (0.03% - 0.98%)	0.28% (0.02% - 1.12%)	0.30% (0.07% - 0.79%)	20.74% (2.96% - 63.09%)	0.16% (0.01% - 1.40%)	10.39% (0.13% - 14.24%)	0.02% (0.01% - 0.88%)	11.25% (8.08% - 23.08%)	15.55% (12.28% - 25.53%)	3.52% (0.26% - 8.38%)	10.40% (6.77% - 18.38%)	13.53% (7.32% - 19.79%)	9.15% (4.72% - 15.86%)	17.68% (10.63% - 25.68%)
Antigua and Barbuda	0.28% (0.02% - 1.13%)	0.34% (0.01% - 1.32%)	0.28% (0.07% - 0.61%)	17.20% (4.61% - 32.34%)	0.23% (0.03% - 1.39%)	10.39% (0.16% - 14.52%)	0.01% (0.01% - 0.88%)	12.04% (8.27% - 18.46%)	15.23% (11.66% - 20.64%)	3.74% (0.02% - 8.61%)	9.30% (8.05% - 12.59%)	11.21% (8.45% - 16.18%)	8.03% (4.97% - 11.87%)	16.17% (13.36% - 20.84%)
Argentina	0.28% (0.01% - 1.18%)	0.30% (0.02% - 1.32%)	0.27% (0.01% - 0.63%)	7.35% (0.64% - 11.41%)	0.27% (0.03% - 1.41%)	10.50% (0.14% - 14.68%)	0.01% (0.00% - 0.88%)	4.66% (2.03% - 11.41%)	8.21% (4.45% - 13.11%)	3.77% (0.03% - 8.68%)	3.48% (0.12% - 5.83%)	4.61% (1.15% - 8.50%)	1.40% (0.23% - 4.04%)	9.41% (6.65% - 12.56%)
Armenia	0.19% (0.04% - 1.18%)	0.21% (0.03% - 1.28%)	0.25% (0.06% - 0.59%)	13.28% (1.71% - 57.44%)	0.13% (0.01% - 1.22%)	10.41% (0.33% - 14.67%)	0.01% (0.00% - 0.88%)	7.95% (0.91% - 12.00%)	10.84% (5.24% - 15.33%)	3.77% (0.02% - 8.66%)	5.94% (1.98% - 7.45%)	6.83% (4.79% - 9.25%)	3.18% (1.05% - 5.09%)	12.66% (4.43% - 15.37%)
Aruba	0.28% (0.01% - 1.04%)	0.29% (0.04% - 1.25%)	0.29% (0.10% - 0.55%)	24.28% (4.54% - 41.24%)	0.13% (0.00% - 1.39%)	10.34% (0.16% - 14.38%)	0.00% (0.00% - 0.88%)	0.81% (0.10% - 7.98%)	4.06% (1.80% - 9.98%)	3.76% (0.01% - 8.60%)	1.15% (0.02% - 4.08%)	1.27% (0.12% - 4.79%)	2.26% (0.45% - 5.96%)	6.52% (3.17% - 7.66%)
Australia	0.00% (0.00% - 0.22%)	0.00% (0.00% - 0.22%)	0.00% (0.00% - 0.22%)	0.00% (0.00% - 0.22%)	0.00% (0.00% - 0.22%)	0.00% (0.00% - 0.22%)	0.00% (0.00% - 0.00%)	8.67% (7.13% - 9.65%)	8.67% (7.13% - 9.65%)	8.67% (7.13% - 9.65%)	8.67% (7.13% - 9.65%)	8.67% (7.13% - 9.65%)	8.67% (7.13% - 9.65%)	8.67% (7.13% - 9.65%)
Austria	0.15% (0.00% - 0.24%)	0.15% (0.00% - 0.24%)	0.15% (0.00% - 0.24%)	0.15% (0.00% - 0.24%)	0.15% (0.00% - 0.24%)	0.15% (0.00% - 0.24%)	0.00% (0.00% - 0.00%)	10.63% (10.34% - 11.73%)	10.63% (10.34% - 11.73%)	10.63% (10.34% - 11.73%)	10.63% (10.34% - 11.73%)	10.63% (10.34% - 11.73%)	10.63% (10.34% - 11.73%)	10.63% (10.34% - 11.73%)
Azerbaijan	0.26% (0.01% - 1.19%)	0.27% (0.03% - 1.33%)	0.24% (0.04% - 0.64%)	4.82% (0.16% - 29.31%)	0.22% (0.02% - 1.40%)	10.61% (0.15% - 14.71%)	0.01% (0.00% - 0.88%)	5.89% (1.53% - 8.11%)	8.25% (4.27% - 12.01%)	3.77% (0.03% - 8.68%)	2.28% (0.57% - 8.62%)	4.04% (0.01% - 12.21%)	1.64% (0.25% - 7.90%)	8.45% (5.50% - 13.77%)
Bahamas	0.29% (0.05% -	0.33% (0.01% -	0.28% (0.02% -	15.05% (0.73% -	0.22% (0.00% -	10.37% (0.15% -	0.00% (0.00% -	1.40% (0.12% -	3.87% (1.23% - 6.55%)	3.76% (0.02% - 8.62%)	2.63% (0.22% -	1.66% (0.01% - 6.39%)	4.47% (0.66% - 7.35%)	5.96% (1.10% -

Country	Final cons.	House. cons.	Gov cons.	GCF	Exp	Imp	GDP	Agri...	Min. Manu., Util.	Manu.	Constr	Wholesale, Retail,...	Transp. Commun.	Other
	1.12%)	1.25%)	0.55%)	30.11%)	1.41%)	14.49%)	0.87%)	5.52%)			5.32%)			7.88%)
Bahrain	0.26% (0.02% - 1.04%)	0.26% (0.01% - 1.25%)	0.27% (0.07% - 0.56%)	23.06% (9.03% - 41.75%)	0.16% (0.01% - 1.34%)	10.37% (0.21% - 14.49%)	0.01% (0.00% - 0.86%)	11.74% (3.62% - 13.82%)	8.33% (1.88% - 10.60%)	3.77% (0.03% - 8.68%)	13.48% (9.16% - 17.38%)	12.34% (7.90% - 15.09%)	16.20% (11.72% - 17.74%)	7.47% (4.48% - 9.62%)
Bangladesh	0.30% (0.07% - 1.15%)	0.31% (0.04% - 1.19%)	0.27% (0.05% - 0.53%)	15.51% (1.31% - 32.28%)	0.18% (0.00% - 1.46%)	10.28% (0.09% - 14.53%)	0.00% (0.00% - 0.87%)	2.23% (1.64% - 5.87%)	5.97% (4.25% - 7.59%)	3.77% (0.03% - 8.67%)	1.82% (0.00% - 2.74%)	1.33% (0.01% - 6.33%)	2.48% (0.10% - 3.74%)	6.94% (4.63% - 9.72%)
Barbados	0.28% (0.02% - 1.01%)	0.28% (0.06% - 1.17%)	0.29% (0.08% - 0.59%)	22.50% (1.95% - 49.05%)	0.14% (0.00% - 1.40%)	10.24% (0.16% - 14.28%)	0.01% (0.01% - 0.89%)	14.05% (9.85% - 21.74%)	16.69% (13.77% - 23.64%)	3.76% (0.01% - 8.60%)	11.58% (9.24% - 16.31%)	13.66% (11.71% - 15.54%)	9.98% (6.73% - 13.18%)	19.52% (12.34% - 21.82%)
Belarus	0.31% (0.01% - 1.09%)	0.33% (0.01% - 1.25%)	0.32% (0.09% - 0.56%)	23.90% (1.45% - 35.33%)	0.23% (0.00% - 1.45%)	10.36% (0.10% - 14.50%)	0.01% (0.01% - 0.88%)	12.46% (3.90% - 15.41%)	14.53% (8.20% - 17.57%)	3.77% (0.03% - 8.67%)	8.97% (4.98% - 12.80%)	11.65% (5.75% - 14.47%)	7.43% (3.22% - 9.56%)	16.34% (7.42% - 21.27%)
Belgium	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	11.87% (10.99% - 12.34%)	11.87% (10.99% - 12.34%)	11.87% (10.99% - 12.34%)	11.87% (10.99% - 12.34%)	11.87% (10.99% - 12.34%)	11.87% (10.99% - 12.34%)	11.87% (10.99% - 12.34%)
Belize	0.33% (0.06% - 1.04%)	0.34% (0.02% - 1.18%)	0.27% (0.03% - 0.63%)	14.83% (1.93% - 45.61%)	0.21% (0.02% - 1.49%)	10.29% (0.07% - 14.28%)	0.01% (0.01% - 0.88%)	9.49% (7.75% - 12.40%)	12.77% (11.56% - 15.93%)	3.75% (0.02% - 8.44%)	6.77% (3.19% - 12.69%)	7.37% (4.40% - 16.24%)	3.89% (2.32% - 12.43%)	14.33% (11.17% - 16.92%)
Benin	0.29% (0.02% - 1.17%)	0.31% (0.05% - 1.27%)	0.26% (0.05% - 0.57%)	14.24% (2.71% - 21.29%)	0.20% (0.03% - 1.41%)	10.44% (0.14% - 14.62%)	0.01% (0.00% - 0.88%)	7.58% (4.44% - 10.92%)	10.86% (7.46% - 13.04%)	3.76% (0.03% - 8.53%)	5.07% (3.22% - 6.99%)	6.74% (4.19% - 9.75%)	2.97% (1.62% - 5.50%)	11.81% (7.34% - 15.05%)
Bermuda	0.33% (0.02% - 1.05%)	0.39% (0.05% - 1.20%)	0.37% (0.10% - 0.88%)	31.73% (13.11% - 80.24%)	0.22% (0.02% - 2.18%)	10.30% (0.63% - 14.38%)	0.01% (0.00% - 0.87%)	4.60% (1.18% - 8.37%)	1.91% (0.17% - 4.25%)	3.76% (0.00% - 8.50%)	7.55% (0.66% - 12.59%)	5.91% (1.44% - 11.73%)	10.32% (1.38% - 13.57%)	1.96% (0.23% - 4.55%)
Bhutan	0.25% (0.04% - 0.87%)	0.31% (0.04% - 1.13%)	0.26% (0.02% - 0.47%)	16.07% (3.60% - 53.97%)	0.18% (0.05% - 1.26%)	10.11% (0.28% - 14.58%)	0.00% (0.00% - 0.87%)	1.36% (0.38% - 5.12%)	5.22% (3.31% - 6.88%)	3.76% (0.01% - 8.62%)	1.38% (0.16% - 3.09%)	1.63% (0.20% - 5.39%)	2.88% (0.28% - 4.32%)	6.17% (3.77% - 10.27%)
Bolivia	0.28% (0.07% - 1.12%)	0.31% (0.00% - 1.24%)	0.29% (0.06% - 0.55%)	18.82% (2.90% - 29.21%)	0.21% (0.01% - 1.40%)	10.37% (0.15% - 14.51%)	0.02% (0.00% - 0.89%)	9.19% (5.51% - 24.50%)	13.10% (8.68% - 26.30%)	3.77% (0.03% - 8.68%)	8.71% (5.05% - 18.91%)	12.10% (6.68% - 19.33%)	8.08% (2.67% - 16.76%)	15.59% (10.79% - 26.18%)
Bosnia and Herzegovina	0.20% (0.03% - 1.40%)	0.27% (0.06% - 1.54%)	0.25% (0.09% - 0.85%)	16.65% (0.90% - 41.85%)	0.30% (0.03% - 1.41%)	10.76% (0.14% - 14.97%)	0.02% (0.01% - 0.89%)	17.11% (14.34% - 22.82%)	20.61% (17.88% - 24.75%)	3.77% (0.03% - 8.67%)	14.95% (11.46% - 20.24%)	16.12% (12.28% - 23.83%)	11.74% (9.74% - 19.90%)	22.54% (17.69% - 25.86%)
Botswana	0.30% (0.07% - 0.95%)	0.41% (0.04% - 1.20%)	0.33% (0.02% - 0.58%)	41.14% (2.31% - 76.61%)	0.18% (0.00% - 1.97%)	9.82% (0.41% - 14.35%)	0.00% (0.00% - 0.87%)	1.44% (0.16% - 6.67%)	5.01% (2.60% - 8.39%)	3.77% (0.03% - 8.67%)	1.92% (0.39% - 3.73%)	0.82% (0.04% - 6.17%)	2.99% (0.39% - 5.20%)	6.52% (3.60% - 9.62%)
Brazil	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	16.08% (13.06% - 17.51%)	16.08% (13.06% - 17.51%)	16.08% (13.06% - 17.51%)	16.08% (13.06% - 17.51%)	16.08% (13.06% - 17.51%)	16.08% (13.06% - 17.51%)	16.08% (13.06% - 17.51%)
British Virgin Islands	0.29% (0.02% - 1.00%)	0.27% (0.01% - 1.13%)	0.28% (0.07% - 0.68%)	33.21% (6.23% - 48.73%)	0.15% (0.03% - 1.37%)	10.20% (0.18% - 14.24%)	0.01% (0.00% - 0.87%)	3.36% (0.12% - 4.99%)	1.06% (0.18% - 4.57%)	3.50% (0.17% - 8.10%)	4.82% (3.07% - 8.77%)	4.17% (0.12% - 5.32%)	7.15% (3.83% - 10.05%)	1.82% (0.29% - 3.46%)
Brunei Darussalam	0.33% (0.00%	0.42% (0.06	0.34% (0.03	22.83% (6.02%	0.30% (0.11%	10.34% (0.22%	0.01% (0.00	3.15% (0.29%	0.46% (0.01%	3.77% (0.03%	5.81% (2.40%	4.25% (1.07%	8.19% (2.71%	1.88% (0.00%

Country	Final cons.	House. cons.	Gov cons.	GCF	Exp	Imp	GDP	Agri...	Min. Manu., Util.	Manu.	Constr	Wholesale, Retail,...	Transp. Commun.	Other
	-1.07%)	%-1.41%)	%-0.72%)	--70.79%)	-1.33%)	-15.05%)	%-0.87%)	--4.88%)	1.47%)	8.68%)	-8.34%)	8.22%)	10.07%)	-3.87%)
Bulgaria	0.00% (0.00%-2.87%)	0.00% (0.00%-2.40%)	0.00% (0.00%-2.40%)	0.00% (0.00%--2.87%)	0.00% (0.00%--2.87%)	0.00% (0.00%--2.87%)	0.00% (0.00%-0.00%)	16.13% (12.66%-28.56%)	16.13% (12.66%-28.56%)	16.13% (12.66%--28.56%)	16.13% (12.66%-28.56%)	16.13% (12.66%-28.56%)	16.13% (12.66%--28.56%)	16.13% (12.66%-28.56%)
Burkina Faso	0.28% (0.01%-1.14%)	0.32% (0.03%-1.31%)	0.27% (0.01%-0.61%)	6.33% (2.11%--13.41%)	0.30% (0.04%--1.41%)	10.47% (0.14%--14.72%)	0.01% (0.00%-0.88%)	6.98% (4.50%--9.41%)	10.63% (7.68%-12.30%)	3.76% (0.01%-8.67%)	3.83% (1.16%--9.11%)	5.32% (0.01%-12.48%)	1.80% (0.20%-8.17%)	10.97% (5.49%--14.01%)
Burundi	0.28% (0.07%-1.03%)	0.31% (0.00%-1.26%)	0.29% (0.02%-0.58%)	16.27% (0.41%--57.03%)	0.12% (0.01%--1.52%)	9.91% (0.03%--14.42%)	0.01% (0.00%-0.88%)	8.71% (3.40%--12.90%)	11.90% (6.66%-17.23%)	3.68% (0.07%-8.38%)	5.87% (1.56%--13.97%)	7.44% (1.88%-17.52%)	3.69% (1.47%--13.71%)	11.82% (9.74%--16.84%)
Cambodia	0.28% (0.00%-1.05%)	0.28% (0.03%-1.10%)	0.29% (0.01%-0.60%)	32.87% (5.29%--51.44%)	0.14% (0.00%--1.38%)	10.29% (0.17%--14.33%)	0.00% (0.00%-0.88%)	4.53% (2.45%--8.48%)	7.72% (5.44%-10.52%)	3.74% (0.04%-8.52%)	2.51% (0.09%--5.55%)	3.54% (1.36%-7.36%)	0.85% (0.19%-3.25%)	9.83% (5.69%--11.63%)
Cameroon	0.28% (0.01%-1.18%)	0.31% (0.04%-1.27%)	0.25% (0.04%-0.57%)	10.80% (2.11%--17.76%)	0.19% (0.05%--1.41%)	10.42% (0.14%--14.69%)	0.01% (0.00%-0.88%)	5.99% (3.64%--9.77%)	8.84% (7.87%-11.48%)	3.77% (0.03%-8.67%)	4.05% (0.70%--5.97%)	5.19% (2.64%-9.00%)	1.53% (0.13%-4.44%)	10.47% (7.08%--13.18%)
Canada	0.04% (0.01%-0.15%)	0.04% (0.01%-0.15%)	0.04% (0.01%-0.15%)	0.04% (0.01%--0.15%)	0.04% (0.01%--0.15%)	0.04% (0.01%--0.15%)	0.00% (0.00%-0.00%)	7.46% (6.24%-8.08%)	7.46% (6.24%-8.08%)	7.46% (6.24%-8.08%)	7.46% (6.24%-8.08%)	7.46% (6.24%-8.08%)	7.46% (6.24%-8.08%)	7.46% (6.24%-8.08%)
Cape Verde	0.29% (0.05%-1.18%)	0.32% (0.02%-1.31%)	0.27% (0.07%-0.62%)	15.38% (1.77%--24.20%)	0.19% (0.03%--1.41%)	10.39% (0.13%--14.55%)	0.01% (0.00%-0.88%)	8.64% (2.28%--13.24%)	11.83% (5.88%-14.99%)	3.75% (0.09%-8.49%)	5.62% (2.18%--7.69%)	7.41% (5.50%-8.99%)	3.93% (1.21%-5.18%)	12.95% (5.18%--16.05%)
Cayman Islands	0.26% (0.02%-1.09%)	0.30% (0.04%-1.22%)	0.27% (0.07%-0.53%)	23.46% (1.02%--34.98%)	0.20% (0.00%--1.35%)	10.34% (0.21%--14.41%)	0.01% (0.00%-0.86%)	11.62% (5.20%--13.01%)	8.18% (3.59%-10.68%)	3.77% (0.04%-8.67%)	12.83% (10.58%-17.63%)	12.84% (6.99%-15.15%)	16.32% (11.20%-18.91%)	6.78% (5.91%-8.60%)
Central African Republic	0.28% (0.01%-1.09%)	0.28% (0.02%-1.14%)	0.29% (0.06%-0.56%)	20.92% (4.06%--38.37%)	0.19% (0.00%--1.39%)	10.34% (0.15%--14.51%)	0.00% (0.00%-0.88%)	5.29% (3.45%--7.37%)	9.01% (5.99%-11.35%)	3.75% (0.01%-8.45%)	2.51% (0.21%--7.13%)	3.88% (0.63%-9.51%)	1.25% (0.12%-5.66%)	10.04% (5.93%--11.94%)
Chad	0.26% (0.00%-0.98%)	0.34% (0.02%-1.32%)	0.33% (0.09%-0.62%)	15.78% (1.25%--42.18%)	0.13% (0.03%--1.42%)	10.46% (0.13%--14.64%)	0.00% (0.00%-0.88%)	2.23% (0.18%--9.53%)	5.70% (3.28%-13.08%)	3.77% (0.22%-8.67%)	2.67% (0.50%--7.00%)	2.44% (0.64%-7.47%)	2.64% (0.26%-6.49%)	7.10% (2.54%--12.87%)
Chile	0.29% (0.04%-1.15%)	0.32% (0.04%-1.27%)	0.26% (0.04%-0.58%)	10.71% (2.28%--21.07%)	0.24% (0.04%--1.40%)	10.43% (0.15%--14.59%)	0.01% (0.00%-0.88%)	7.21% (5.88%--10.79%)	10.43% (9.25%-12.50%)	3.77% (0.03%-8.68%)	5.15% (1.09%--8.95%)	5.98% (2.93%-12.50%)	1.93% (0.29%-8.68%)	11.67% (9.23%--14.29%)
China, People's Republic of	0.03% (0.00%-0.86%)	0.03% (0.00%-0.86%)	0.03% (0.00%-0.86%)	0.03% (0.00%--0.86%)	0.03% (0.00%--0.86%)	0.03% (0.00%--0.86%)	0.00% (0.00%-0.00%)	1.19% (0.01%--4.69%)	1.19% (0.01%-4.69%)	0.00% (0.00%-2.74%)	1.19% (0.01%--4.69%)	1.19% (0.01%-4.69%)	1.19% (0.01%-4.69%)	1.19% (0.01%-4.69%)
China: Hong Kong SAR	0.43% (0.03%-1.14%)	0.44% (0.02%-1.09%)	0.39% (0.18%-1.58%)	46.31% (7.20%--99.99%)	0.39% (0.03%--1.86%)	9.69% (0.19%--12.55%)	0.00% (0.00%-0.88%)	0.76% (0.13%--6.23%)	3.37% (2.26%-8.59%)	3.77% (0.03%-8.68%)	1.00% (0.09%--5.46%)	1.61% (0.21%-4.95%)	2.77% (0.03%-6.96%)	5.54% (1.73%--7.39%)
China: Macao SAR	0.25% (0.00%-1.06%)	0.28% (0.01%-1.25%)	0.25% (0.09%-0.61%)	22.66% (12.67%--57.16%)	0.15% (0.00%--1.30%)	10.38% (0.25%--14.25%)	0.03% (0.02%-0.92%)	0.00% (0.00%--0.00%)	29.32% (20.04%-56.42%)	3.77% (0.02%-8.65%)	22.60% (16.40%-48.77%)	25.10% (19.41%-49.09%)	20.09% (15.42%--46.56%)	33.01% (19.39%--55.29%)
Colombia	0.29%	0.31%	0.26%	5.73%	0.38%	10.50%	0.01%	5.87%	8.98%	3.77%	2.84%	4.46%	1.37%	10.59%

Country	Final cons.	House. cons.	Gov cons.	GCF	Exp	Imp	GDP	Agri...	Min. Manu., Util.	Manu.	Constr	Wholesale, Retail,...	Transp. Commun.	Other
	(0.01% - 1.17%)	(0.01% - 1.32%)	(0.03% - 0.62%)	(1.83% - 12.98%)	(0.04% - 1.41%)	(0.14% - 14.67%)	(0.00% - 0.88%)	(0.02% - 11.26%)	(2.13% - 12.96%)	(0.03% - 8.68%)	(0.11% - 5.68%)	(1.50% - 6.24%)	(0.03% - 3.13%)	(1.77% - 13.29%)
Comoros	0.35% (0.00% - 0.83%)	0.30% (0.06% - 0.92%)	0.24% (0.01% - 0.77%)	25.56% (4.74% - 52.18%)	0.26% (0.01% - 1.37%)	9.78% (0.11% - 14.12%)	0.01% (0.00% - 0.87%)	3.98% (1.87% - 4.88%)	0.32% (0.02% - 1.39%)	3.21% (0.65% - 6.98%)	6.52% (2.58% - 9.99%)	4.02% (0.01% - 8.63%)	9.03% (3.81% - 10.63%)	1.40% (0.17% - 3.87%)
Congo	0.28% (0.00% - 1.12%)	0.33% (0.04% - 1.30%)	0.27% (0.05% - 0.61%)	14.72% (4.48% - 24.78%)	0.23% (0.02% - 1.39%)	10.41% (0.16% - 14.74%)	0.00% (0.00% - 0.87%)	1.05% (0.14% - 2.53%)	3.46% (2.50% - 5.54%)	3.77% (0.03% - 8.67%)	2.49% (0.15% - 6.00%)	2.81% (0.01% - 5.88%)	5.00% (1.07% - 7.73%)	4.83% (0.85% - 8.55%)
Cook Islands	0.33% (0.21% - 1.10%)	0.42% (0.05% - 1.10%)	0.32% (0.03% - 1.28%)	33.14% (8.85% - 63.25%)	0.39% (0.22% - 1.40%)	9.08% (0.12% - 13.62%)	0.01% (0.00% - 0.87%)	4.62% (0.42% - 6.77%)	1.36% (0.17% - 3.14%)	2.97% (0.08% - 6.38%)	7.44% (4.33% - 9.77%)	5.67% (2.13% - 8.23%)	9.07% (5.96% - 10.76%)	1.66% (0.17% - 3.74%)
Costa Rica	0.28% (0.02% - 1.08%)	0.28% (0.01% - 1.22%)	0.29% (0.08% - 0.52%)	20.94% (3.69% - 30.15%)	0.21% (0.01% - 1.40%)	10.38% (0.15% - 14.51%)	0.00% (0.00% - 0.87%)	3.75% (2.29% - 7.90%)	6.93% (5.85% - 9.85%)	3.77% (0.03% - 8.66%)	1.42% (0.21% - 4.70%)	2.87% (0.24% - 8.29%)	1.60% (0.01% - 3.98%)	8.92% (5.64% - 10.55%)
Croatia	0.00% (0.00% - 0.73%)	0.00% (0.00% - 0.73%)	0.00% (0.00% - 0.73%)	0.00% (0.00% - 0.73%)	0.00% (0.00% - 0.73%)	0.00% (0.00% - 0.73%)	0.00% (0.00% - 0.00%)	18.73% (16.31% - 22.22%)	18.73% (16.31% - 22.22%)	18.73% (16.31% - 22.22%)	18.73% (16.31% - 22.22%)	18.73% (16.31% - 22.22%)	18.73% (16.31% - 22.22%)	18.73% (16.31% - 22.22%)
Cuba	0.26% (0.06% - 1.06%)	0.34% (0.02% - 1.37%)	0.28% (0.05% - 0.67%)	12.88% (2.07% - 35.92%)	0.20% (0.03% - 1.40%)	10.42% (0.15% - 14.57%)	0.02% (0.01% - 0.89%)	19.31% (15.78% - 24.12%)	23.07% (18.02% - 28.41%)	3.77% (0.03% - 8.68%)	15.69% (14.56% - 25.19%)	18.20% (14.69% - 28.74%)	14.30% (11.85% - 24.92%)	24.22% (21.04% - 27.64%)
Cyprus	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	10.10% (7.09% - 13.20%)	10.10% (7.09% - 13.20%)	10.10% (7.09% - 13.20%)	10.10% (7.09% - 13.20%)	10.10% (7.09% - 13.20%)	10.10% (7.09% - 13.20%)	10.10% (7.09% - 13.20%)
Czech Republic	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	10.31% (9.52% - 10.98%)	10.31% (9.52% - 10.98%)	10.31% (9.52% - 10.98%)	10.31% (9.52% - 10.98%)	10.31% (9.52% - 10.98%)	10.31% (9.52% - 10.98%)	10.31% (9.52% - 10.98%)
CÃ´te d'Ivoire	0.27% (0.02% - 1.00%)	0.27% (0.05% - 1.12%)	0.28% (0.04% - 0.67%)	28.03% (5.93% - 62.47%)	0.18% (0.01% - 1.36%)	10.22% (0.19% - 14.21%)	0.01% (0.00% - 0.88%)	8.85% (2.01% - 12.00%)	11.74% (5.18% - 15.45%)	3.77% (0.02% - 8.67%)	6.29% (2.12% - 9.36%)	7.69% (2.10% - 12.95%)	3.94% (0.38% - 8.64%)	11.34% (7.31% - 18.01%)
Democratic People's Republic of Korea	23.03% (20.72% - 25.08%)	Inf% (Inf% - Inf%)	Inf% (Inf% - Inf%)	Inf% (Inf% - Inf%)	0.30% (0.02% - 1.42%)	10.54% (0.13% - 14.72%)	0.01% (0.00% - 0.87%)	2.66% (0.21% - 3.71%)	0.70% (0.18% - 1.92%)	3.77% (0.03% - 8.67%)	5.37% (1.59% - 7.74%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	2.57% (0.08% - 4.22%)
Democratic Republic of the Congo	0.32% (0.13% - 1.08%)	0.33% (0.09% - 1.16%)	0.37% (0.01% - 0.64%)	31.52% (7.56% - 81.93%)	0.22% (0.04% - 1.35%)	10.13% (0.20% - 14.33%)	0.00% (0.00% - 0.88%)	2.16% (0.21% - 6.90%)	5.34% (2.17% - 10.23%)	3.77% (0.03% - 8.67%)	0.94% (0.02% - 6.57%)	1.14% (0.18% - 10.17%)	2.44% (0.00% - 5.85%)	6.81% (2.61% - 9.90%)
Denmark	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	16.77% (15.70% - 18.28%)	16.77% (15.70% - 18.28%)	16.77% (15.70% - 18.28%)	16.77% (15.70% - 18.28%)	16.77% (15.70% - 18.28%)	16.77% (15.70% - 18.28%)	16.77% (15.70% - 18.28%)
Djibouti	0.32% (0.00% - 0.95%)	0.31% (0.05% - 1.09%)	0.28% (0.08% - 0.65%)	33.08% (7.35% - 50.05%)	0.20% (0.00% - 1.37%)	10.20% (0.18% - 14.27%)	0.01% (0.01% - 0.88%)	12.66% (9.85% - 15.02%)	15.86% (13.42% - 17.70%)	3.75% (0.00% - 8.53%)	9.87% (6.70% - 14.47%)	11.33% (7.01% - 18.02%)	7.62% (4.49% - 14.21%)	16.92% (13.21% - 20.27%)
Dominica	0.28% (0.02% - 0.91%)	0.28% (0.01% - 1.02%)	0.29% (0.06% - 0.65%)	29.08% (4.35% - 61.55%)	0.16% (0.02% - 1.39%)	10.17% (0.15% - 14.33%)	0.01% (0.00% - 0.89%)	7.32% (3.87% - 22.25%)	10.90% (7.05% - 24.00%)	3.66% (0.07% - 8.59%)	6.73% (2.61% - 16.39%)	10.33% (3.92% - 15.56%)	6.03% (0.29% - 13.52%)	13.97% (7.39% - 21.08%)

Country	Final cons.	House. cons.	Gov cons.	GCF	Exp	Imp	GDP	Agri...	Min. Manu., Util.	Manu.	Constr	Wholesale, Retail,...	Transp. Commun.	Other
Dominican Republic	0.29% (0.05% - 1.14%)	0.29% (0.04% - 1.20%)	0.29% (0.07% - 0.52%)	22.03% (3.15% - 31.25%)	0.23% (0.01% - 1.40%)	10.36% (0.15% - 14.48%)	0.00% (0.00% - 0.88%)	3.98% (1.97% - 8.72%)	7.12% (5.07% - 10.66%)	3.77% (0.03% - 8.66%)	1.64% (0.08% - 5.64%)	2.63% (0.24% - 9.18%)	2.32% (0.70% - 5.37%)	8.79% (4.79% - 10.72%)
Ecuador	0.29% (0.04% - 1.16%)	0.31% (0.04% - 1.27%)	0.26% (0.05% - 0.57%)	14.12% (2.29% - 21.69%)	0.20% (0.04% - 1.41%)	10.45% (0.14% - 14.59%)	0.00% (0.00% - 0.87%)	2.62% (0.60% - 5.22%)	6.02% (3.70% - 7.65%)	3.77% (0.03% - 8.68%)	3.06% (0.34% - 5.65%)	2.72% (0.39% - 7.36%)	3.11% (0.67% - 5.87%)	6.42% (3.15% - 11.52%)
Egypt	0.29% (0.04% - 1.15%)	0.32% (0.03% - 1.24%)	0.28% (0.04% - 0.55%)	13.53% (2.64% - 21.27%)	0.20% (0.01% - 1.41%)	10.40% (0.15% - 14.58%)	0.00% (0.00% - 0.88%)	4.18% (1.56% - 6.55%)	7.48% (5.25% - 8.90%)	3.77% (0.03% - 8.68%)	1.61% (0.23% - 6.76%)	3.31% (0.06% - 7.10%)	1.76% (0.17% - 3.35%)	9.12% (4.60% - 12.06%)
El Salvador	0.28% (0.04% - 1.09%)	0.28% (0.06% - 1.16%)	0.30% (0.04% - 0.60%)	23.31% (3.48% - 46.87%)	0.13% (0.03% - 1.40%)	10.24% (0.15% - 14.32%)	0.00% (0.00% - 0.87%)	1.63% (0.02% - 7.27%)	5.55% (2.91% - 9.02%)	3.76% (0.02% - 8.64%)	1.07% (0.30% - 3.33%)	0.55% (0.07% - 6.25%)	2.43% (0.45% - 4.61%)	6.13% (3.52% - 8.51%)
Equatorial Guinea	0.29% (0.06% - 1.12%)	0.32% (0.04% - 1.39%)	0.29% (0.02% - 0.68%)	11.05% (1.90% - 19.52%)	0.20% (0.03% - 1.42%)	10.48% (0.14% - 14.66%)	0.00% (0.00% - 0.87%)	1.61% (0.27% - 7.76%)	1.81% (0.68% - 12.03%)	3.79% (0.48% - 8.68%)	4.70% (0.47% - 8.81%)	4.00% (0.76% - 12.34%)	6.87% (0.67% - 9.59%)	5.29% (0.02% - 11.23%)
Eritrea	0.30% (0.01% - 0.97%)	0.29% (0.02% - 1.11%)	0.28% (0.09% - 0.55%)	22.11% (1.20% - 40.81%)	0.16% (0.00% - 1.41%)	10.31% (0.13% - 14.38%)	0.01% (0.00% - 0.87%)	7.11% (2.09% - 10.97%)	10.14% (6.02% - 13.77%)	3.70% (0.16% - 8.36%)	4.20% (0.05% - 9.74%)	6.58% (0.03% - 13.39%)	2.16% (0.78% - 9.48%)	12.17% (5.42% - 17.94%)
Estonia	0.00% (0.00% - 1.57%)	0.00% (0.00% - 1.57%)	0.00% (0.00% - 1.57%)	0.00% (0.00% - 1.57%)	0.00% (0.00% - 1.57%)	0.00% (0.00% - 1.57%)	0.00% (0.00% - 0.00%)	13.00% (11.26% - 15.64%)	13.00% (11.26% - 15.64%)	13.00% (11.26% - 15.64%)	13.00% (11.26% - 15.64%)	13.00% (11.26% - 15.64%)	13.00% (11.26% - 15.64%)	13.00% (11.26% - 15.64%)
Ethiopia	0.24% (0.01% - 1.16%)	0.25% (0.00% - 1.22%)	0.26% (0.01% - 0.54%)	19.27% (0.06% - 43.39%)	0.16% (0.01% - 1.42%)	10.34% (0.13% - 14.68%)	0.01% (0.00% - 0.88%)	5.72% (2.20% - 8.97%)	8.26% (6.10% - 11.02%)	3.76% (0.02% - 8.66%)	3.06% (0.78% - 5.46%)	4.95% (2.12% - 8.00%)	1.43% (0.24% - 3.26%)	9.74% (4.68% - 14.42%)
Fiji	0.28% (0.02% - 1.02%)	0.27% (0.01% - 1.14%)	0.29% (0.03% - 0.62%)	36.22% (5.27% - 53.29%)	0.16% (0.03% - 1.38%)	10.16% (0.17% - 14.27%)	0.02% (0.01% - 0.89%)	15.08% (5.86% - 19.29%)	18.32% (9.79% - 21.31%)	3.76% (0.01% - 8.57%)	11.68% (6.37% - 16.15%)	12.57% (9.23% - 16.50%)	9.88% (5.65% - 12.75%)	18.54% (8.35% - 23.61%)
Finland	0.00% (0.00% - 0.77%)	0.00% (0.00% - 0.77%)	0.00% (0.00% - 0.77%)	0.00% (0.00% - 0.77%)	0.00% (0.00% - 0.77%)	0.00% (0.00% - 0.77%)	0.00% (0.00% - 0.00%)	14.95% (14.19% - 15.89%)	14.95% (14.19% - 15.89%)	14.95% (14.19% - 15.89%)	14.95% (14.19% - 15.89%)	14.95% (14.19% - 15.89%)	14.95% (14.19% - 15.89%)	14.95% (14.19% - 15.89%)
France	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	11.60% (10.85% - 12.26%)	11.60% (10.85% - 12.26%)	11.60% (10.85% - 12.26%)	11.60% (10.85% - 12.26%)	11.60% (10.85% - 12.26%)	11.60% (10.85% - 12.26%)	11.60% (10.85% - 12.26%)
French Polynesia	0.45% (0.00% - 0.91%)	0.45% (0.02% - 0.96%)	0.38% (0.09% - 0.76%)	52.14% (20.78% - 73.62%)	0.34% (0.01% - 1.73%)	9.92% (0.17% - 14.02%)	0.01% (0.00% - 0.88%)	5.11% (0.54% - 11.16%)	8.22% (0.62% - 12.94%)	3.76% (0.01% - 8.61%)	1.97% (0.37% - 5.61%)	3.44% (0.02% - 4.98%)	1.50% (0.56% - 3.92%)	9.64% (0.01% - 11.91%)
Gabon	0.28% (0.03% - 4.35%)	0.32% (0.00% - 4.10%)	0.26% (0.02% - 4.59%)	9.37% (2.77% - 99.97%)	0.21% (0.00% - 8.08%)	8.31% (0.16% - 14.67%)	0.01% (0.00% - 0.88%)	5.10% (0.13% - 10.33%)	8.45% (4.90% - 12.80%)	3.77% (0.03% - 8.67%)	3.28% (0.14% - 10.80%)	5.70% (0.02% - 12.17%)	2.59% (0.69% - 8.27%)	8.97% (3.70% - 15.62%)
Gambia	0.29% (0.00% - 1.14%)	0.29% (0.02% - 1.20%)	0.25% (0.03% - 0.58%)	23.04% (2.86% - 38.43%)	0.18% (0.02% - 1.40%)	10.23% (0.14% - 14.56%)	0.01% (0.00% - 0.88%)	5.86% (2.50% - 11.59%)	1.79% (0.22% - 13.40%)	3.49% (0.31% - 8.37%)	3.95% (2.06% - 6.11%)	3.98% (1.66% - 6.19%)	5.83% (0.78% - 8.62%)	4.28% (0.30% - 13.59%)
Georgia	0.26% (0.03% - 0.99%)	0.29% (0.02% - 1.15%	0.15% (0.02% - 0.51%	17.83% (0.12% - 46.39%	0.24% (0.00% - 1.26%)	10.31% (0.30% - 14.46%	0.01% (0.00% - 0.88%	4.96% (0.52% - 17.47%	8.10% (4.44% - 19.20%)	3.76% (0.02% - 8.66%)	4.28% (1.03% - 11.89%	7.74% (3.57% 11.49%)	2.82% (0.19% - 8.91%)	11.94% (3.01% - 18.00%

Country	Final cons.	House. cons.	Gov cons.	GCF	Exp	Imp	GDP	Agri...	Min. Manu., Util.	Manu.	Constr	Wholesale, Retail,...	Transp. Commun.	Other
Germany	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	11.01% (10.42% - 12.14%)	11.01% (10.42% - 12.14%)	11.01% (10.42% - 12.14%)	11.01% (10.42% - 12.14%)	11.01% (10.42% - 12.14%)	11.01% (10.42% - 12.14%)	11.01% (10.42% - 12.14%)
Ghana	0.32% (0.00% - 1.03%)	0.31% (0.02% - 1.11%)	0.24% (0.04% - 0.51%)	20.22% (2.61% - 43.85%)	0.26% (0.06% - 1.46%)	10.34% (0.09% - 14.50%)	0.01% (0.00% - 0.87%)	5.65% (1.57% - 9.80%)	8.79% (5.13% - 13.70%)	3.77% (0.03% - 8.67%)	3.30% (0.48% - 10.31%)	3.45% (0.48% - 13.90%)	1.84% (0.08% - 9.59%)	10.11% (4.92% - 12.44%)
Greece	0.18% (0.00% - 0.82%)	0.18% (0.00% - 0.82%)	0.18% (0.00% - 0.82%)	0.18% (0.00% - 0.82%)	0.18% (0.00% - 0.82%)	0.18% (0.00% - 0.82%)	0.00% (0.00% - 0.00%)	12.87% (10.87% - 14.09%)	12.87% (10.87% - 14.09%)	12.87% (10.87% - 14.09%)	12.87% (10.87% - 14.09%)	12.87% (10.87% - 14.09%)	12.87% (10.87% - 14.09%)	12.87% (10.87% - 14.09%)
Greenland	0.28% (0.01% - 1.01%)	0.34% (0.04% - 1.38%)	0.33% (0.09% - 0.68%)	20.03% (3.29% - 44.77%)	0.17% (0.02% - 1.40%)	10.39% (0.15% - 14.54%)	0.00% (0.00% - 0.87%)	1.86% (0.18% - 6.63%)	4.39% (2.70% - 8.46%)	3.75% (0.03% - 8.48%)	1.21% (0.41% - 3.99%)	0.93% (0.08% - 4.56%)	2.26% (0.25% - 5.44%)	6.09% (2.59% - 8.40%)
Grenada	0.29% (0.05% - 1.07%)	0.32% (0.03% - 1.18%)	0.26% (0.05% - 0.59%)	17.64% (2.37% - 33.26%)	0.18% (0.06% - 1.41%)	10.37% (0.14% - 14.40%)	0.01% (0.00% - 0.88%)	12.45% (6.51% - 18.05%)	16.21% (9.70% - 19.93%)	3.74% (0.04% - 8.39%)	9.75% (7.50% - 13.17%)	11.43% (7.88% - 17.12%)	7.51% (4.13% - 12.21%)	16.96% (11.81% - 20.27%)
Guatemala	0.29% (0.05% - 1.11%)	0.29% (0.06% - 1.18%)	0.29% (0.06% - 0.56%)	20.72% (1.76% - 39.66%)	0.17% (0.01% - 1.40%)	10.33% (0.15% - 14.40%)	0.00% (0.00% - 0.87%)	3.04% (1.56% - 6.39%)	6.70% (5.11% - 8.33%)	3.77% (0.03% - 8.67%)	1.45% (0.26% - 3.77%)	2.58% (0.50% - 7.13%)	1.97% (0.36% - 3.66%)	8.05% (4.81% - 10.88%)
Guinea	0.27% (0.03% - 1.18%)	0.31% (0.01% - 1.30%)	0.26% (0.02% - 0.61%)	9.30% (2.14% - 19.94%)	0.29% (0.02% - 1.33%)	10.44% (0.22% - 14.82%)	0.01% (0.00% - 0.88%)	6.48% (1.78% - 11.10%)	9.91% (2.19% - 13.53%)	3.77% (0.03% - 8.66%)	3.74% (1.75% - 8.95%)	5.17% (1.86% - 10.22%)	2.01% (0.27% - 6.63%)	10.33% (2.96% - 18.07%)
Guinea-Bissau	0.32% (0.02% - 1.82%)	0.37% (0.01% - 1.77%)	0.29% (0.01% - 2.23%)	20.81% (4.33% - 94.81%)	0.23% (0.06% - 3.16%)	10.07% (0.15% - 12.24%)	0.00% (0.00% - 0.88%)	3.21% (0.30% - 14.10%)	8.08% (4.27% - 16.98%)	2.78% (0.80% - 7.31%)	2.55% (0.20% - 6.58%)	2.27% (0.03% - 9.16%)	3.00% (0.12% - 5.34%)	7.68% (3.19% - 12.70%)
Guyana	0.36% (0.06% - 1.07%)	0.37% (0.01% - 1.18%)	0.34% (0.05% - 0.64%)	37.67% (2.31% - 56.54%)	0.22% (0.01% - 1.50%)	10.20% (0.05% - 14.31%)	0.01% (0.00% - 0.88%)	7.44% (5.07% - 13.30%)	10.75% (7.99% - 15.24%)	3.76% (0.02% - 8.63%)	6.08% (1.46% - 8.01%)	6.48% (3.46% - 11.60%)	3.62% (0.17% - 7.29%)	12.35% (9.17% - 14.65%)
Haiti	0.22% (0.09% - 1.11%)	0.27% (0.07% - 1.17%)	0.23% (0.05% - 0.59%)	17.29% (0.41% - 41.75%)	0.15% (0.02% - 1.26%)	10.29% (0.29% - 14.36%)	0.00% (0.00% - 0.87%)	1.93% (0.02% - 3.59%)	5.15% (2.05% - 7.17%)	3.43% (0.05% - 7.46%)	3.21% (0.25% - 5.87%)	2.68% (0.08% - 7.44%)	3.46% (0.09% - 8.71%)	6.59% (0.65% - 8.88%)
Honduras	0.29% (0.06% - 1.05%)	0.32% (0.04% - 1.18%)	0.30% (0.07% - 0.53%)	18.27% (3.36% - 40.83%)	0.20% (0.02% - 1.40%)	10.34% (0.15% - 14.43%)	0.00% (0.00% - 0.87%)	3.63% (0.00% - 5.90%)	6.70% (3.49% - 9.59%)	3.76% (0.02% - 8.59%)	3.18% (0.12% - 6.38%)	2.91% (0.34% - 9.78%)	2.91% (0.00% - 5.47%)	8.40% (2.94% - 11.19%)
Hungary	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	16.82% (15.48% - 18.39%)	16.82% (15.48% - 18.39%)	16.82% (15.48% - 18.39%)	16.82% (15.48% - 18.39%)	16.82% (15.48% - 18.39%)	16.82% (15.48% - 18.39%)	16.82% (15.48% - 18.39%)
Iceland	0.29% (0.04% - 0.99%)	0.34% (0.04% - 1.23%)	0.27% (0.06% - 0.56%)	15.68% (3.41% - 51.32%)	0.15% (0.03% - 1.40%)	10.39% (0.15% - 14.29%)	0.02% (0.01% - 0.88%)	16.29% (11.31% - 21.53%)	18.76% (14.86% - 23.47%)	3.77% (0.03% - 8.66%)	13.92% (8.68% - 18.73%)	16.50% (9.00% - 20.40%)	13.29% (6.48% - 15.49%)	20.86% (14.66% - 25.15%)
India	0.91% (0.03% - 2.28%)	0.91% (0.03% - 2.28%)	0.91% (0.03% - 2.28%)	0.91% (0.03% - 2.28%)	0.91% (0.03% - 2.28%)	0.91% (0.03% - 2.28%)	0.00% (0.00% - 0.00%)	7.09% (4.37% - 8.08%)	7.09% (4.37% - 8.08%)	7.09% (4.37% - 8.08%)	7.09% (4.37% - 8.08%)	7.09% (4.37% - 8.08%)	7.09% (4.37% - 8.08%)	7.09% (4.37% - 8.08%)
Indonesia	2.31% (0.10% -	2.31% (0.10% -	2.31% (0.10% -	2.31% (0.10% -	2.31% (0.10% -	2.31% (0.10% -	0.00% (0.00% -	0.00% (0.00% -	0.00% (0.00% - 1.53%)	0.00% (0.00% - 1.53%)	0.00% (0.00% -	0.00% (0.00% - 1.53%)	0.00% (0.00% - 1.53%)	0.00% (0.00% -

Country	Final cons.	House. cons.	Gov cons.	GCF	Exp	Imp	GDP	Agri...	Min. Manu., Util.	Manu.	Constr	Wholesale, Retail,...	Transp. Commun.	Other
	8.43%)	8.43%)	8.43%)	8.43%)	8.43%)	8.43%)	0.00%)	1.53%)			1.53%)			1.53%)
Iran (Islamic Republic of)	0.34% (0.01% - 1.19%)	0.38% (0.02% - 1.34%)	0.29% (0.02% - 0.65%)	7.28% (2.31% - 25.73%)	0.31% (0.01% - 1.51%)	10.53% (0.04% - 14.71%)	0.01% (0.00% - 0.87%)	0.99% (0.42% - 4.24%)	1.71% (0.34% - 3.93%)	3.77% (0.03% - 8.68%)	4.49% (0.26% - 9.23%)	2.85% (0.83% - 7.59%)	7.00% (1.63% - 9.43%)	1.59% (0.09% - 6.12%)
Iraq	0.35% (0.03% - 1.39%)	0.37% (0.02% - 1.20%)	0.28% (0.11% - 1.96%)	22.64% (0.40% - 97.64%)	0.20% (0.04% - 2.94%)	7.82% (0.14% - 14.79%)	0.03% (0.01% - 0.85%)	21.89% (12.49% - 47.39%)	17.24% (10.79% - 43.10%)	3.77% (0.03% - 8.68%)	23.59% (16.97% - 46.28%)	22.30% (16.63% - 42.77%)	25.78% (20.38% - 46.58%)	16.61% (11.74% - 43.87%)
Ireland	0.75% (0.06% - 2.97%)	0.75% (0.06% - 2.97%)	0.75% (0.06% - 2.97%)	0.75% (0.06% - 2.97%)	0.75% (0.06% - 2.97%)	0.75% (0.06% - 2.97%)	0.00% (0.00% - 0.00%)	12.02% (9.57% - 14.19%)	12.02% (9.57% - 14.19%)	12.02% (9.57% - 14.19%)	12.02% (9.57% - 14.19%)	12.02% (9.57% - 14.19%)	12.02% (9.57% - 14.19%)	12.02% (9.57% - 14.19%)
Israel	0.29% (0.04% - 1.08%)	0.36% (0.03% - 1.28%)	0.29% (0.04% - 0.59%)	16.64% (3.27% - 31.49%)	0.23% (0.01% - 1.40%)	10.36% (0.15% - 14.50%)	0.01% (0.00% - 0.88%)	8.01% (5.81% - 11.26%)	10.97% (9.26% - 14.49%)	3.77% (0.03% - 8.68%)	5.01% (1.72% - 10.85%)	5.96% (2.46% - 14.79%)	2.50% (0.61% - 9.87%)	12.30% (9.64% - 15.42%)
Italy	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	11.20% (10.66% - 12.11%)	11.20% (10.66% - 12.11%)	11.20% (10.66% - 12.11%)	11.20% (10.66% - 12.11%)	11.20% (10.66% - 12.11%)	11.20% (10.66% - 12.11%)	11.20% (10.66% - 12.11%)
Jamaica	0.29% (0.04% - 1.09%)	0.30% (0.04% - 1.21%)	0.30% (0.07% - 0.53%)	21.40% (2.66% - 35.49%)	0.21% (0.01% - 1.41%)	10.28% (0.14% - 14.44%)	0.01% (0.00% - 0.88%)	6.47% (3.07% - 14.12%)	9.57% (6.97% - 15.84%)	3.77% (0.03% - 8.66%)	4.76% (2.86% - 8.54%)	6.74% (4.77% - 8.90%)	2.86% (0.35% - 5.39%)	12.54% (5.56% - 14.41%)
Japan	0.00% (0.00% - 0.08%)	0.00% (0.00% - 0.08%)	0.00% (0.00% - 0.08%)	0.00% (0.00% - 0.08%)	0.00% (0.00% - 0.08%)	0.00% (0.00% - 0.08%)	0.00% (0.00% - 0.00%)	0.72% (0.07% - 1.03%)	0.72% (0.07% - 1.03%)	0.72% (0.07% - 1.03%)	0.72% (0.07% - 1.03%)	0.72% (0.07% - 1.03%)	0.72% (0.07% - 1.03%)	0.72% (0.07% - 1.03%)
Jordan	0.28% (0.00% - 1.06%)	0.31% (0.02% - 1.22%)	0.29% (0.09% - 0.53%)	26.66% (3.76% - 40.20%)	0.18% (0.01% - 1.40%)	10.28% (0.15% - 14.45%)	0.01% (0.00% - 0.88%)	9.63% (3.21% - 14.04%)	12.06% (7.64% - 17.94%)	3.77% (0.03% - 8.67%)	4.95% (0.26% - 14.62%)	7.45% (0.13% - 18.14%)	2.54% (0.42% - 13.83%)	13.93% (7.04% - 18.90%)
Kazakhstan	0.30% (0.00% - 1.10%)	0.31% (0.00% - 1.24%)	0.24% (0.02% - 0.60%)	19.15% (7.22% - 53.51%)	0.31% (0.04% - 1.51%)	10.50% (0.04% - 14.53%)	0.00% (0.00% - 0.87%)	2.70% (0.07% - 7.05%)	5.78% (2.98% - 8.75%)	3.77% (0.03% - 8.68%)	2.33% (0.21% - 4.10%)	3.28% (0.32% - 5.92%)	1.69% (0.20% - 5.16%)	7.89% (2.78% - 11.29%)
Kenya	0.23% (0.04% - 1.14%)	0.26% (0.02% - 1.26%)	0.23% (0.03% - 0.57%)	15.60% (4.73% - 38.89%)	0.20% (0.02% - 1.28%)	10.20% (0.27% - 14.61%)	0.01% (0.01% - 0.88%)	9.75% (7.77% - 14.22%)	13.00% (11.40% - 15.95%)	3.77% (0.03% - 8.66%)	8.13% (4.88% - 10.03%)	8.65% (7.21% - 12.82%)	5.58% (3.48% - 8.57%)	14.55% (11.21% - 16.74%)
Kiribati	0.28% (0.03% - 0.91%)	0.34% (0.03% - 1.11%)	0.29% (0.08% - 0.62%)	20.79% (0.94% - 31.01%)	0.59% (0.03% - 3.11%)	10.17% (0.06% - 14.38%)	0.01% (0.00% - 0.87%)	2.75% (0.17% - 5.85%)	9.21% (4.49% - 12.48%)	2.56% (0.33% - 7.46%)	3.67% (1.17% - 8.38%)	3.26% (0.18% - 9.66%)	3.39% (0.13% - 7.93%)	5.85% (2.21% - 12.40%)
Kosovo	0.23% (0.00% - 1.13%)	0.31% (0.00% - 1.23%)	0.24% (0.08% - 0.54%)	21.27% (7.56% - 32.27%)	0.25% (0.00% - 1.28%)	10.37% (0.27% - 14.52%)	0.01% (0.00% - 0.89%)	14.73% (1.04% - 21.42%)	17.81% (1.37% - 23.42%)	3.76% (0.02% - 8.56%)	11.60% (0.02% - 15.36%)	12.96% (0.32% - 17.11%)	9.43% (1.74% - 13.81%)	18.98% (0.32% - 25.01%)
Kuwait	0.27% (0.00% - 1.08%)	0.34% (0.05% - 1.33%)	0.28% (0.09% - 0.63%)	16.84% (5.77% - 48.71%)	0.10% (0.00% - 1.38%)	10.45% (0.17% - 14.57%)	0.01% (0.01% - 0.86%)	6.62% (3.37% - 8.25%)	3.34% (0.57% - 4.76%)	3.77% (0.03% - 8.68%)	9.33% (3.91% - 12.20%)	7.83% (0.36% - 11.60%)	12.10% (4.17% - 13.45%)	1.64% (0.13% - 4.66%)
Kyrgyzstan	0.28% (0.03% - 1.06%)	0.30% (0.00% - 1.19%)	0.29% (0.08% - 0.60%)	26.21% (3.85% - 49.16%)	0.11% (0.06% - 1.40%)	10.25% (0.15% - 14.33%)	0.01% (0.00% - 0.88%)	7.12% (3.90% - 13.65%)	10.43% (8.07% - 15.61%)	3.76% (0.01% - 8.62%)	5.63% (2.74% - 7.59%)	7.20% (3.06% - 9.57%)	3.61% (0.54% - 6.04%)	11.90% (7.42% - 16.26%)
Lao People's Democratic	0.28% (0.00%	0.28% (0.02	0.23% (0.02	10.75% (1.43%	0.16% (0.05%	10.49% (0.16%	0.00% (0.00	4.61% (1.64%	6.15% (0.47%	3.76% (0.01%	1.53% (0.03%	2.07% (0.04%	1.36% (0.06%	7.61% (0.20%

Country	Final cons.	House. cons.	Gov cons.	GCF	Exp	Imp	GDP	Agri...	Min. Manu., Util.	Manu.	Constr	Wholesale, Retail,...	Transp. Commun.	Other
Republic	-1.18%)	%-1.31%)	%-0.62%)	--29.76%)	-1.39%)	-14.65%)	%-0.87%)	--6.25%)	8.34%)	8.66%)	-4.52%)	3.81%)	4.93%)	-11.67%)
Latvia	0.00%(0.00%-0.00%)	0.00%(0.00%-0.00%)	0.00%(0.00%-0.00%)	0.00%(0.00%--0.00%)	0.00%(0.00%--0.00%)	0.00%(0.00%--0.00%)	0.00%(0.00%-0.00%)	11.89%(10.82%-13.66%)	11.89%(10.82%-13.66%)	11.89%(10.82%-13.66%)	11.89%(10.82%-13.66%)	11.89%(10.82%-13.66%)	11.89%(10.82%-13.66%)	11.89%(10.82%-13.66%)
Lebanon	0.29%(0.01%-1.16%)	0.29%(0.05%-1.26%)	0.28%(0.06%-0.57%)	15.64%(1.96%--21.95%)	0.22%(0.00%--1.42%)	10.40%(0.14%--14.64%)	0.01%(0.00%-0.87%)	2.79%(0.03%--6.54%)	1.14%(0.09%-64.93%)	2.26%(0.00%-7.55%)	4.91%(0.96%--7.98%)	3.62%(0.19%-7.46%)	7.58%(2.20%-9.31%)	2.33%(0.27%--5.29%)
Lesotho	0.36%(0.01%-0.97%)	0.42%(0.03%-1.16%)	0.34%(0.02%-0.63%)	25.90%(1.03%--64.11%)	0.23%(0.03%--1.42%)	10.20%(0.13%--14.18%)	0.00%(0.00%-0.88%)	4.04%(2.78%--8.96%)	7.84%(5.16%-12.07%)	3.75%(0.02%-8.63%)	1.73%(0.21%--5.45%)	2.89%(0.40%-9.23%)	1.14%(0.10%-5.18%)	8.95%(5.46%--11.75%)
Liberia	0.34%(0.02%-0.88%)	0.32%(0.05%-0.95%)	0.27%(0.00%-0.77%)	24.25%(6.20%--57.69%)	0.20%(0.07%--1.35%)	10.11%(0.19%--14.13%)	0.01%(0.00%-0.88%)	3.90%(0.55%--9.94%)	8.09%(2.15%-17.48%)	3.77%(2.04%-8.32%)	3.89%(0.47%--5.52%)	4.73%(1.77%-6.83%)	2.58%(1.08%-6.79%)	8.55%(4.96%--13.26%)
Libya	0.28%(0.04%-1.06%)	0.36%(0.01%-1.24%)	0.29%(0.07%-0.54%)	20.67%(2.11%--44.48%)	0.17%(0.03%--1.38%)	10.32%(0.17%--14.38%)	0.01%(0.00%-0.85%)	12.95%(8.44%--19.55%)	9.91%(6.18%-14.73%)	3.77%(0.03%-8.68%)	16.48%(9.14%--23.03%)	13.98%(6.59%-22.90%)	18.72%(11.50%--24.75%)	8.13%(2.36%--15.72%)
Liechtenstein	0.29%(0.06%-1.12%)	0.33%(0.01%-1.23%)	0.29%(0.06%-0.54%)	16.11%(3.29%--29.51%)	0.21%(0.00%--1.40%)	10.38%(0.15%--14.50%)	0.01%(0.01%-0.87%)	5.37%(2.32%--8.32%)	1.81%(0.29%-5.25%)	3.61%(0.03%-7.81%)	7.85%(3.03%--11.79%)	6.35%(0.65%-11.66%)	10.56%(4.96%-13.51%)	1.82%(0.02%--4.49%)
Lithuania	0.00%(0.00%-0.00%)	0.00%(0.00%-0.00%)	0.00%(0.00%-0.00%)	0.00%(0.00%--0.00%)	0.00%(0.00%--0.00%)	0.00%(0.00%--0.00%)	0.00%(0.00%-0.00%)	11.54%(10.53%-14.09%)	11.54%(10.53%-14.09%)	11.54%(10.53%-14.09%)	11.54%(10.53%-14.09%)	11.54%(10.53%-14.09%)	11.54%(10.53%-14.09%)	11.54%(10.53%-14.09%)
Luxembourg	0.00%(0.00%-0.00%)	0.00%(0.00%-0.00%)	0.00%(0.00%-0.00%)	0.00%(0.00%--0.00%)	0.00%(0.00%--0.00%)	0.00%(0.00%--0.00%)	0.00%(0.00%-0.00%)	11.19%(10.14%-12.11%)	11.19%(10.14%-12.11%)	11.19%(10.14%-12.11%)	11.19%(10.14%-12.11%)	11.19%(10.14%-12.11%)	11.19%(10.14%-12.11%)	11.19%(10.14%-12.11%)
Madagascar	0.29%(0.04%-1.16%)	0.28%(0.06%-1.23%)	0.28%(0.06%-0.57%)	17.40%(3.41%--40.03%)	0.16%(0.01%--1.40%)	10.44%(0.15%--14.44%)	0.01%(0.00%-0.88%)	7.32%(3.98%--11.81%)	10.50%(7.18%-13.87%)	3.75%(0.01%-8.57%)	5.05%(2.50%--8.34%)	6.40%(3.77%-9.25%)	3.33%(0.71%-4.93%)	12.21%(6.91%--14.98%)
Malawi	0.32%(0.02%-1.12%)	0.34%(0.02%-1.19%)	0.28%(0.06%-0.88%)	19.82%(1.47%--79.76%)	0.23%(0.01%--1.42%)	10.38%(0.13%--14.49%)	0.00%(0.00%-0.87%)	1.55%(0.07%--4.27%)	4.11%(0.96%-6.77%)	3.76%(0.01%-8.55%)	1.76%(0.18%--4.43%)	1.58%(0.07%-5.31%)	3.55%(1.50%-6.30%)	5.15%(0.58%--9.66%)
Malaysia	0.28%(0.02%-1.01%)	0.36%(0.05%-1.15%)	0.27%(0.04%-0.56%)	21.09%(3.98%--47.16%)	0.17%(0.05%--1.36%)	10.23%(0.20%--14.34%)	0.01%(0.00%-0.87%)	1.89%(0.68%--4.69%)	2.12%(0.25%-4.24%)	3.77%(0.03%-8.68%)	4.21%(0.80%--6.26%)	2.85%(1.39%-5.36%)	6.41%(1.07%-7.95%)	1.95%(0.44%--5.27%)
Maldives	0.28%(0.01%-0.99%)	0.34%(0.04%-1.45%)	0.30%(0.10%-0.71%)	19.31%(4.44%--29.76%)	0.20%(0.02%--1.39%)	10.41%(0.16%--14.53%)	0.01%(0.00%-0.87%)	4.31%(0.66%--5.56%)	0.70%(0.13%-1.65%)	3.45%(0.14%-8.01%)	6.20%(3.16%--10.01%)	4.33%(0.59%-8.01%)	9.04%(4.62%-10.51%)	1.88%(0.55%--3.87%)
Mali	0.29%(0.04%-1.15%)	0.32%(0.04%-1.30%)	0.28%(0.06%-0.61%)	12.51%(2.30%--25.33%)	0.20%(0.03%--1.41%)	10.46%(0.14%--14.62%)	0.01%(0.00%-0.88%)	8.36%(6.44%--12.75%)	10.99%(9.36%-14.46%)	3.77%(0.02%-8.66%)	6.67%(2.21%--8.84%)	7.38%(5.22%-11.06%)	4.01%(1.58%-7.24%)	12.66%(9.05%--15.77%)
Malta	0.00%(0.00%-2.33%)	0.00%(0.00%-2.33%)	0.00%(0.00%-2.33%)	0.00%(0.00%--2.33%)	0.00%(0.00%--2.33%)	0.00%(0.00%--2.33%)	0.00%(0.00%-0.00%)	14.54%(10.76%-16.55%)	14.54%(10.76%-16.55%)	14.54%(10.76%-16.55%)	14.54%(10.76%-16.55%)	14.54%(10.76%-16.55%)	14.54%(10.76%-16.55%)	14.54%(10.76%-16.55%)
Marshall	0.28%	0.35%	0.29%	21.46%	0.35%	10.27%	0.00%	2.07%	6.60%	2.40%	3.06%	1.73%	3.24%	6.25%

Country	Final cons.	House. cons.	Gov cons.	GCF	Exp	Imp	GDP	Agri...	Min. Manu., Util.	Manu.	Constr	Wholesale, Retail,...	Transp. Commun.	Other
Islands	(0.00% - 0.99%)	(0.01% - 1.28%)	(0.06% - 0.55%)	(0.79% - 29.57%)	(0.01% - 1.29%)	(0.11% - 14.42%)	(0.00% - 0.87%)	(0.53% - 6.47%)	(0.92% - 10.17%)	(0.48% - 12.22%)	(0.28% - 4.66%)	(0.05% - 8.25%)	(0.21% - 6.97%)	(4.47% - 8.29%)
Mauritania	0.29% (0.02% - 0.99%)	0.29% (0.06% - 1.16%)	0.28% (0.05% - 0.58%)	18.63% (2.63% - 57.81%)	0.09% (0.01% - 1.41%)	10.36% (0.14% - 14.31%)	0.00% (0.00% - 0.88%)	3.77% (2.23% - 7.69%)	7.28% (4.65% - 9.54%)	3.76% (0.02% - 8.66%)	1.23% (0.10% - 5.51%)	2.31% (0.02% - 9.45%)	1.41% (0.35% - 4.53%)	8.38% (6.44% - 11.41%)
Mauritius	0.28% (0.02% - 1.08%)	0.28% (0.05% - 1.19%)	0.29% (0.08% - 0.54%)	25.27% (5.06% - 38.99%)	0.19% (0.03% - 1.38%)	10.33% (0.17% - 14.41%)	0.01% (0.01% - 0.88%)	11.58% (10.11% - 15.68%)	15.35% (12.62% - 17.45%)	3.76% (0.02% - 8.63%)	9.15% (6.20% - 13.28%)	10.83% (7.38% - 16.22%)	6.71% (4.96% - 11.86%)	16.45% (13.48% - 19.53%)
Mexico	0.00% (0.00% - 0.72%)	0.00% (0.00% - 0.72%)	0.00% (0.00% - 0.72%)	0.00% (0.00% - 0.72%)	0.00% (0.00% - 0.72%)	0.00% (0.00% - 0.72%)	0.00% (0.00% - 0.00%)	2.21% (0.14% - 5.90%)	2.21% (0.14% - 5.90%)	2.21% (0.14% - 5.90%)	2.21% (0.14% - 5.90%)	2.21% (0.14% - 5.90%)	2.21% (0.14% - 5.90%)	2.21% (0.14% - 5.90%)
Micronesia (Federated States of)	8.30% (7.07% - 8.61%)	8.39% (7.95% - 9.67%)	8.22% (7.92% - 8.89%)	5.64% (0.21% - 31.36%)	0.48% (0.08% - 1.07%)	10.55% (0.43% - 14.68%)	0.00% (0.00% - 0.88%)	3.39% (1.13% - 9.09%)	6.55% (4.10% - 15.73%)	3.48% (0.15% - 11.54%)	1.76% (0.16% - 3.61%)	2.92% (0.19% - 6.13%)	0.97% (0.02% - 4.27%)	8.08% (3.75% - 11.15%)
Monaco	0.28% (0.06% - 1.11%)	0.33% (0.02% - 1.31%)	0.26% (0.03% - 0.62%)	13.74% (2.85% - 21.29%)	0.20% (0.04% - 1.41%)	10.45% (0.15% - 14.57%)	0.00% (0.00% - 0.87%)	0.00% (0.00% - 0.00%)	3.38% (1.56% - 9.02%)	1.99% (0.27% - 5.45%)	3.59% (1.45% - 6.22%)	2.56% (0.86% - 4.11%)	5.69% (2.95% - 7.63%)	3.07% (0.02% - 5.31%)
Mongolia	0.24% (0.04% - 1.12%)	0.30% (0.00% - 1.26%)	0.25% (0.03% - 0.57%)	12.79% (0.47% - 21.14%)	0.24% (0.02% - 1.31%)	10.45% (0.24% - 14.59%)	0.01% (0.01% - 0.88%)	10.34% (2.92% - 13.37%)	13.48% (1.38% - 15.62%)	3.77% (0.02% - 8.67%)	7.44% (1.85% - 12.14%)	9.24% (1.70% - 12.53%)	5.35% (2.11% - 9.43%)	13.40% (0.60% - 19.45%)
Montenegro	0.29% (0.01% - 1.07%)	0.30% (0.05% - 1.22%)	0.30% (0.10% - 0.60%)	24.53% (3.17% - 48.58%)	0.17% (0.04% - 1.40%)	10.34% (0.15% - 14.36%)	0.02% (0.01% - 0.89%)	14.59% (7.31% - 27.48%)	17.70% (10.31% - 29.42%)	3.76% (0.01% - 8.63%)	10.27% (7.03% - 20.27%)	13.48% (7.52% - 22.47%)	8.47% (3.84% - 19.89%)	21.39% (10.53% - 28.86%)
Montserrat	0.26% (0.06% - 1.46%)	0.37% (0.09% - 1.34%)	0.28% (0.02% - 1.62%)	23.36% (2.09% - 39.39%)	0.15% (0.03% - 1.31%)	8.14% (0.05% - 13.85%)	0.01% (0.01% - 0.88%)	9.69% (5.92% - 16.42%)	13.66% (10.61% - 21.18%)	3.61% (0.62% - 13.33%)	6.31% (2.25% - 12.92%)	9.03% (3.79% - 12.76%)	4.82% (1.25% - 9.13%)	12.52% (9.44% - 18.84%)
Morocco	0.28% (0.05% - 1.14%)	0.32% (0.03% - 1.31%)	0.26% (0.05% - 0.62%)	12.77% (2.29% - 19.60%)	0.19% (0.05% - 1.41%)	10.45% (0.14% - 14.60%)	0.00% (0.00% - 0.88%)	4.46% (3.03% - 7.93%)	7.70% (7.31% - 9.63%)	3.77% (0.03% - 8.68%)	2.35% (0.45% - 5.94%)	3.22% (0.32% - 9.73%)	1.68% (0.07% - 4.87%)	9.54% (6.69% - 12.04%)
Mozambique	0.29% (0.04% - 1.10%)	0.29% (0.03% - 1.19%)	0.29% (0.06% - 0.50%)	18.88% (1.98% - 37.25%)	0.23% (0.01% - 1.42%)	10.34% (0.14% - 14.58%)	0.01% (0.00% - 0.88%)	6.77% (1.88% - 11.69%)	9.93% (2.76% - 15.00%)	3.77% (0.02% - 8.66%)	3.04% (0.23% - 12.04%)	4.90% (1.55% - 13.99%)	0.94% (0.09% - 9.67%)	11.85% (1.63% - 17.84%)
Myanmar	0.29% (0.05% - 1.33%)	0.30% (0.01% - 1.41%)	0.24% (0.00% - 0.71%)	2.27% (0.07% - 15.01%)	0.44% (0.03% - 1.35%)	9.85% (0.11% - 14.73%)	0.00% (0.00% - 0.87%)	0.58% (0.08% - 2.51%)	3.08% (1.99% - 4.65%)	3.73% (0.03% - 8.62%)	3.06% (0.07% - 5.35%)	1.17% (0.18% - 4.22%)	5.16% (0.79% - 6.22%)	4.58% (1.14% - 7.31%)
Namibia	0.28% (0.03% - 1.10%)	0.29% (0.02% - 1.31%)	0.25% (0.14% - 0.61%)	22.96% (8.56% - 53.60%)	0.21% (0.02% - 1.26%)	10.50% (0.29% - 14.56%)	0.00% (0.00% - 0.88%)	5.01% (2.48% - 8.73%)	8.77% (5.58% - 10.44%)	3.77% (0.03% - 8.67%)	2.50% (0.15% - 7.52%)	3.30% (0.39% - 10.13%)	1.25% (0.00% - 6.32%)	9.27% (7.49% - 11.80%)
Nauru	0.31% (0.01% - 0.98%)	0.27% (0.02% - 1.05%)	0.24% (0.06% - 1.06%)	17.74% (0.93% - 30.78%)	0.71% (0.09% - 8.10%)	8.92% (0.26% - 14.29%)	0.01% (0.00% - 0.87%)	5.94% (1.42% - 13.53%)	113.43% (1.71% - 1571.83%)	9.02% (2.94% - 100.00%)	7.29% (3.61% - 18.42%)	4.95% (3.24% - 15.03%)	8.17% (6.92% - 100.00%)	1.54% (0.14% - 8.26%)
Nepal	0.29% (0.00% - 1.19%)	0.29% (0.05% - 1.27%)	0.24% (0.04% - 0.57%)	12.79% (2.37% - 26.84%)	0.19% (0.06% - 1.41%)	10.47% (0.14% - 14.65%)	0.00% (0.00% - 0.88%)	3.04% (1.07% - 9.46%)	6.17% (4.05% - 11.20%)	3.76% (0.01% - 8.63%)	1.92% (0.01% - 3.88%)	1.99% (0.13% - 6.33%)	1.71% (0.35% - 3.20%)	7.61% (3.99% - 9.86%)

Country	Final cons.	House. cons.	Gov cons.	GCF	Exp	Imp	GDP	Agri...	Min. Manu., Util.	Manu.	Constr	Wholesale, Retail,...	Transp. Commun.	Other
Netherlands	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	12.16% (10.73% - 12.78%)	12.16% (10.73% - 12.78%)	12.16% (10.73% - 12.78%)	12.16% (10.73% - 12.78%)	12.16% (10.73% - 12.78%)	12.16% (10.73% - 12.78%)	12.16% (10.73% - 12.78%)
Netherlands Antilles	0.29% (0.00% - 1.07%)	0.30% (0.05% - 1.21%)	0.30% (0.09% - 0.53%)	27.63% (3.07% - 47.32%)	0.15% (0.01% - 1.40%)	10.31% (0.15% - 14.40%)	0.01% (0.00% - 0.88%)	4.12% (1.02% - 11.18%)	7.32% (5.33% - 13.14%)	3.76% (0.01% - 8.58%)	2.92% (0.41% - 5.80%)	4.02% (2.27% - 6.93%)	1.30% (0.21% - 2.65%)	10.14% (4.00% - 11.25%)
New Caledonia	0.28% (0.04% - 1.13%)	0.33% (0.03% - 1.33%)	0.27% (0.06% - 0.63%)	12.82% (2.18% - 20.83%)	0.20% (0.04% - 1.41%)	10.47% (0.14% - 14.63%)	0.00% (0.00% - 0.88%)	5.47% (1.64% - 11.30%)	8.66% (1.89% - 13.13%)	3.76% (0.00% - 8.59%)	3.06% (0.30% - 6.33%)	4.29% (2.21% - 10.27%)	0.85% (0.30% - 5.35%)	10.35% (0.86% - 12.52%)
New Zealand	0.28% (0.06% - 1.12%)	0.32% (0.03% - 1.30%)	0.26% (0.04% - 0.60%)	14.14% (3.00% - 22.93%)	0.21% (0.06% - 1.41%)	10.43% (0.15% - 14.57%)	0.00% (0.00% - 0.88%)	5.41% (4.33% - 10.34%)	9.09% (7.00% - 12.04%)	3.77% (0.03% - 8.68%)	3.15% (0.27% - 6.17%)	4.04% (2.06% - 9.76%)	1.07% (0.14% - 5.65%)	9.89% (8.15% - 11.81%)
Nicaragua	0.29% (0.06% - 1.07%)	0.32% (0.04% - 1.20%)	0.30% (0.07% - 0.52%)	17.47% (1.93% - 39.31%)	0.21% (0.00% - 1.42%)	10.34% (0.14% - 14.43%)	0.01% (0.00% - 0.88%)	6.44% (4.00% - 10.61%)	10.18% (7.60% - 12.35%)	3.76% (0.02% - 8.64%)	3.16% (0.18% - 8.63%)	4.68% (1.13% - 11.59%)	1.58% (0.06% - 7.04%)	11.60% (7.35% - 13.45%)
Niger	0.29% (0.05% - 1.15%)	0.32% (0.04% - 1.28%)	0.25% (0.06% - 0.58%)	13.04% (2.91% - 22.31%)	0.19% (0.05% - 1.40%)	10.47% (0.14% - 14.60%)	0.00% (0.00% - 0.88%)	5.14% (0.20% - 9.80%)	8.21% (4.50% - 11.52%)	3.76% (0.00% - 8.64%)	2.14% (0.33% - 4.70%)	4.63% (1.79% - 6.05%)	0.95% (0.05% - 1.83%)	8.98% (3.72% - 12.92%)
Nigeria	0.25% (0.04% - 1.09%)	0.25% (0.02% - 1.20%)	0.26% (0.08% - 0.57%)	29.71% (4.97% - 48.71%)	0.12% (0.00% - 1.34%)	10.29% (0.21% - 14.41%)	0.00% (0.00% - 0.87%)	1.08% (0.17% - 2.81%)	4.52% (2.70% - 5.37%)	3.77% (0.03% - 8.68%)	2.77% (0.03% - 5.59%)	3.34% (0.47% - 5.69%)	4.37% (0.40% - 5.97%)	4.91% (1.57% - 9.17%)
Norway	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	13.11% (11.34% - 16.08%)	13.11% (11.34% - 16.08%)	13.11% (11.34% - 16.08%)	13.11% (11.34% - 16.08%)	13.11% (11.34% - 16.08%)	13.11% (11.34% - 16.08%)	13.11% (11.34% - 16.08%)
Occupied Palestinian Territory	0.29% (0.04% - 1.01%)	0.31% (0.05% - 1.14%)	0.30% (0.06% - 0.54%)	22.58% (1.57% - 43.56%)	0.14% (0.02% - 1.42%)	10.22% (0.13% - 14.39%)	0.01% (0.01% - 0.89%)	13.36% (3.96% - 18.48%)	16.94% (8.26% - 20.55%)	3.76% (0.02% - 8.63%)	10.95% (5.03% - 15.42%)	11.77% (6.48% - 18.62%)	9.30% (1.99% - 13.71%)	17.25% (7.48% - 21.68%)
Oman	0.27% (0.05% - 1.11%)	0.27% (0.02% - 1.34%)	0.28% (0.04% - 0.65%)	12.10% (3.54% - 49.90%)	0.17% (0.01% - 1.39%)	10.47% (0.17% - 14.65%)	0.01% (0.00% - 0.87%)	3.94% (1.44% - 5.44%)	0.76% (0.11% - 1.73%)	3.77% (0.03% - 8.68%)	7.02% (2.46% - 9.73%)	5.42% (0.07% - 8.30%)	9.26% (3.06% - 10.83%)	1.67% (0.24% - 2.83%)
Pakistan	0.28% (0.03% - 1.19%)	0.30% (0.01% - 1.25%)	0.24% (0.03% - 0.56%)	8.64% (1.30% - 21.82%)	0.26% (0.04% - 1.41%)	10.47% (0.14% - 14.58%)	0.01% (0.00% - 0.88%)	6.21% (1.58% - 8.50%)	8.64% (6.61% - 12.80%)	3.77% (0.03% - 8.68%)	2.85% (0.29% - 9.58%)	5.33% (1.12% - 13.12%)	1.32% (0.20% - 9.31%)	10.48% (5.40% - 13.25%)
Palau	0.34% (0.00% - 0.74%)	0.36% (0.04% - 1.07%)	0.29% (0.07% - 0.92%)	23.18% (4.15% - 49.34%)	0.27% (0.03% - 1.40%)	9.73% (0.13% - 14.07%)	0.00% (0.00% - 0.87%)	1.10% (0.04% - 6.00%)	3.72% (1.59% - 8.83%)	3.50% (0.03% - 23.91%)	1.60% (0.12% - 4.95%)	1.32% (0.23% - 2.74%)	3.80% (1.07% - 6.71%)	4.89% (0.90% - 7.35%)
Panama	0.27% (0.00% - 1.07%)	0.28% (0.03% - 1.22%)	0.28% (0.09% - 0.55%)	28.04% (6.15% - 44.18%)	0.16% (0.02% - 1.37%)	10.31% (0.18% - 14.35%)	0.00% (0.00% - 0.88%)	1.75% (0.10% - 8.18%)	5.50% (2.35% - 9.90%)	3.77% (0.03% - 8.67%)	1.60% (0.03% - 3.10%)	1.12% (0.04% - 6.37%)	1.75% (0.37% - 4.80%)	6.94% (4.16% - 8.44%)
Papua New Guinea	0.30% (0.01% - 1.01%)	0.35% (0.04% - 1.15%)	0.29% (0.02% - 0.71%)	23.27% (4.38% - 69.66%)	0.16% (0.06% - 1.39%)	10.20% (0.16% - 14.18%)	0.00% (0.00% - 0.87%)	1.34% (0.08% - 3.55%)	4.60% (3.73% - 5.63%)	3.77% (0.03% - 8.67%)	2.09% (0.17% - 4.56%)	2.04% (0.19% - 5.96%)	3.93% (0.69% - 5.28%)	6.02% (2.31% - 8.95%)
Paraguay	0.28% (0.02% - 1.05%)	0.28% (0.04% - 1.15%	0.29% (0.06% - 0.60%	27.16% (3.65% - 48.14%	0.13% (0.06% - 1.40%)	10.27% (0.15% - 14.31%	0.01% (0.00% - 0.88%	7.65% (6.09% - 13.49%	11.70% (9.23% - 15.22%)	3.76% (0.02% - 8.65%)	6.85% (3.93% - 8.48%)	7.45% (5.80% - 12.03%)	3.97% (1.41% - 8.21%)	12.98% (9.47% - 15.66%

Country	Final cons.	House. cons.	Gov cons.	GCF	Exp	Imp	GDP	Agri...	Min. Manu., Util.	Manu.	Constr	Wholesale, Retail,...	Transp. Commun.	Other
Peru	0.28% (0.00% - 1.19%)	0.30% (0.03% - 1.29%)	0.24% (0.03% - 0.59%)	9.68% (1.54% - 13.71%)	0.25% (0.04% - 1.41%)	10.49% (0.14% - 14.66%)	0.01% (0.00% - 0.88%)	7.77% (6.34% - 11.39%)	11.11% (9.36% - 13.09%)	3.77% (0.03% - 8.68%)	4.85% (2.67% - 8.84%)	6.30% (4.00% - 12.39%)	2.66% (1.29% - 8.57%)	12.56% (9.69% - 14.51%)
Philippines	0.28% (0.03% - 1.13%)	0.33% (0.00% - 1.22%)	0.29% (0.07% - 0.52%)	19.04% (3.62% - 28.89%)	0.23% (0.02% - 1.40%)	10.37% (0.15% - 14.53%)	0.01% (0.00% - 0.87%)	2.03% (0.87% - 2.68%)	1.54% (0.05% - 3.72%)	3.77% (0.03% - 8.68%)	4.29% (1.61% - 6.82%)	3.02% (0.68% - 5.59%)	6.72% (1.88% - 8.23%)	2.67% (0.33% - 4.85%)
Poland	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	13.43% (12.13% - 14.31%)	13.43% (12.13% - 14.31%)	13.43% (12.13% - 14.31%)	13.43% (12.13% - 14.31%)	13.43% (12.13% - 14.31%)	13.43% (12.13% - 14.31%)	13.43% (12.13% - 14.31%)
Portugal	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	14.42% (13.32% - 16.27%)	14.42% (13.32% - 16.27%)	14.42% (13.32% - 16.27%)	14.42% (13.32% - 16.27%)	14.42% (13.32% - 16.27%)	14.42% (13.32% - 16.27%)	14.42% (13.32% - 16.27%)
Puerto Rico	0.33% (0.00% - 0.93%)	0.30% (0.03% - 1.04%)	0.28% (0.01% - 0.74%)	34.51% (6.79% - 78.67%)	0.17% (0.01% - 1.37%)	10.06% (0.18% - 14.02%)	0.01% (0.00% - 0.87%)	3.24% (0.05% - 4.46%)	0.44% (0.02% - 2.96%)	3.76% (0.03% - 7.38%)	5.62% (1.02% - 8.84%)	4.13% (0.04% - 7.32%)	8.54% (3.16% - 9.84%)	1.75% (0.08% - 3.79%)
Qatar	0.24% (0.01% - 1.11%)	0.32% (0.01% - 1.41%)	0.25% (0.00% - 0.71%)	8.69% (2.46% - 16.87%)	0.22% (0.04% - 1.40%)	10.52% (0.15% - 14.67%)	0.01% (0.01% - 0.87%)	5.05% (1.28% - 5.83%)	1.46% (0.28% - 3.27%)	3.77% (0.03% - 8.68%)	7.29% (4.59% - 9.30%)	5.61% (1.08% - 9.17%)	9.07% (4.95% - 11.30%)	1.68% (0.10% - 2.89%)
Republic of Korea	0.05% (0.01% - 0.23%)	0.05% (0.01% - 0.23%)	0.05% (0.01% - 0.23%)	0.05% (0.01% - 0.23%)	0.05% (0.01% - 0.23%)	0.05% (0.01% - 0.23%)	0.00% (0.00% - 0.00%)	11.52% (9.98% - 12.87%)	11.52% (9.98% - 12.87%)	11.52% (9.98% - 12.87%)	11.52% (9.98% - 12.87%)	11.52% (9.98% - 12.87%)	11.52% (9.98% - 12.87%)	11.52% (9.98% - 12.87%)
Republic of Moldova	0.28% (0.00% - 1.03%)	0.29% (0.04% - 1.18%)	0.29% (0.08% - 0.60%)	25.34% (3.78% - 49.53%)	0.16% (0.02% - 1.40%)	10.33% (0.15% - 14.29%)	0.01% (0.00% - 0.89%)	12.00% (3.34% - 20.11%)	15.19% (6.52% - 21.85%)	3.76% (0.02% - 8.63%)	9.72% (4.36% - 14.52%)	12.19% (4.70% - 13.98%)	8.38% (0.95% - 11.61%)	18.20% (8.64% - 20.64%)
Romania	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	11.71% (5.81% - 13.59%)	11.71% (5.81% - 13.59%)	11.71% (5.81% - 13.59%)	11.71% (5.81% - 13.59%)	11.71% (5.81% - 13.59%)	11.71% (5.81% - 13.59%)	11.71% (5.81% - 13.59%)
Russian Federation	0.58% (0.06% - 2.18%)	0.58% (0.06% - 2.18%)	0.58% (0.06% - 2.18%)	0.58% (0.06% - 2.18%)	0.58% (0.06% - 2.18%)	0.58% (0.06% - 2.18%)	0.00% (0.00% - 0.00%)	13.83% (8.59% - 17.84%)	13.83% (8.59% - 17.84%)	13.83% (8.59% - 17.84%)	13.83% (8.59% - 17.84%)	13.83% (8.59% - 17.84%)	13.83% (8.59% - 17.84%)	13.83% (8.59% - 17.84%)
Rwanda	0.29% (0.03% - 1.15%)	0.33% (0.02% - 1.26%)	0.27% (0.06% - 0.57%)	15.53% (2.79% - 30.88%)	0.20% (0.03% - 1.40%)	10.44% (0.14% - 14.56%)	0.00% (0.00% - 0.88%)	5.82% (4.60% - 9.61%)	9.38% (6.90% - 13.63%)	3.70% (0.07% - 8.51%)	3.35% (0.29% - 10.12%)	4.55% (2.27% - 13.71%)	0.62% (0.10% - 9.39%)	11.09% (7.75% - 13.17%)
Saint Kitts and Nevis	0.29% (0.05% - 1.19%)	0.31% (0.01% - 1.28%)	0.21% (0.04% - 0.64%)	14.12% (0.97% - 20.50%)	0.19% (0.04% - 1.42%)	10.42% (0.12% - 14.54%)	0.01% (0.01% - 0.88%)	12.25% (6.97% - 16.32%)	16.45% (9.92% - 19.13%)	3.49% (0.25% - 8.09%)	8.74% (6.39% - 15.59%)	10.35% (6.76% - 19.17%)	7.05% (3.34% - 14.87%)	17.08% (13.32% - 19.55%)
Saint Lucia	0.29% (0.00% - 1.10%)	0.28% (0.00% - 1.25%)	0.28% (0.10% - 0.56%)	21.82% (3.26% - 33.86%)	0.19% (0.01% - 1.40%)	10.33% (0.15% - 14.49%)	0.01% (0.01% - 0.88%)	10.51% (5.44% - 19.23%)	13.85% (9.30% - 21.11%)	3.75% (0.02% - 8.45%)	7.29% (5.63% - 13.80%)	9.63% (7.19% - 12.70%)	5.97% (4.62% - 10.70%)	15.17% (8.63% - 18.83%)
Samoa	0.31% (0.07% - 1.04%)	0.41% (0.03% - 1.06%)	0.29% (0.14% - 1.33%)	33.83% (4.69% - 72.45%)	0.41% (0.00% - 1.39%)	9.23% (0.14% - 13.46%)	0.01% (0.00% - 0.87%)	2.36% (1.14% - 3.44%)	1.62% (0.03% - 4.23%)	3.61% (0.21% - 8.28%)	4.59% (2.08% - 6.85%)	3.25% (1.13% - 5.25%)	6.43% (2.64% - 8.47%)	2.31% (0.08% - 4.68%)
San Marino	0.40% (0.11% -	0.49% (0.08% -	0.31% (0.01% -	57.30% (0.49% -	0.34% (0.05% -	9.17% (0.11% -	0.01% (0.00% -	4.80% (0.17% -	9.98% (5.23% - 19.99%)	3.50% (0.36% - 7.05%)	3.62% (1.84% -	6.68% (1.42% - 13.24%)	1.83% (0.08% - 10.25%)	9.80% (5.64% -

Country	Final cons.	House. cons.	Gov cons.	GCF	Exp	Imp	GDP	Agri...	Min. Manu., Util.	Manu.	Constr	Wholesale, Retail,...	Transp. Commun.	Other
	0.85%)	1.00%)	1.32%)	98.43%)	1.74%)	13.58%)	0.88%)	12.04%)			10.66%)			20.30%)
Sao Tome and Principe	0.33% (0.03% - 0.83%)	0.35% (0.05% - 0.93%)	0.19% (0.01% - 0.85%)	17.75% (2.00% - 41.13%)	0.17% (0.04% - 1.22%)	9.53% (0.06% - 14.21%)	0.01% (0.00% - 0.87%)	2.67% (1.02% - 6.17%)	7.36% (2.56% - 10.42%)	2.99% (0.19% - 7.11%)	1.34% (0.37% - 4.67%)	2.08% (0.02% - 5.32%)	2.23% (0.80% - 5.57%)	5.11% (0.45% - 12.55%)
Saudi Arabia	0.26% (0.03% - 1.06%)	0.34% (0.01% - 1.34%)	0.29% (0.04% - 0.64%)	16.03% (2.77% - 24.38%)	0.19% (0.03% - 1.40%)	10.43% (0.15% - 14.56%)	0.01% (0.00% - 0.87%)	3.65% (0.08% - 4.74%)	0.52% (0.04% - 1.62%)	3.77% (0.03% - 8.68%)	6.07% (2.61% - 8.66%)	4.80% (0.63% - 8.09%)	8.38% (3.18% - 10.05%)	1.66% (0.13% - 3.06%)
Senegal	0.29% (0.04% - 1.13%)	0.28% (0.01% - 1.23%)	0.28% (0.06% - 0.54%)	18.54% (3.35% - 32.68%)	0.21% (0.02% - 1.40%)	10.41% (0.15% - 14.54%)	0.01% (0.01% - 0.88%)	12.20% (8.31% - 17.59%)	15.42% (12.26% - 19.53%)	3.77% (0.02% - 8.66%)	9.67% (8.00% - 12.39%)	11.46% (9.20% - 13.62%)	7.90% (6.19% - 9.98%)	16.67% (11.83% - 20.22%)
Serbia	0.28% (0.03% - 1.07%)	0.29% (0.00% - 1.21%)	0.29% (0.09% - 0.55%)	22.95% (2.99% - 44.24%)	0.14% (0.00% - 1.39%)	10.38% (0.17% - 14.37%)	0.01% (0.00% - 0.89%)	13.67% (1.33% - 18.44%)	17.77% (5.62% - 20.37%)	3.77% (0.02% - 8.68%)	10.18% (2.40% - 12.43%)	10.95% (4.72% - 15.13%)	8.48% (1.23% - 10.84%)	17.38% (4.84% - 21.95%)
Seychelles	0.29% (0.00% - 0.79%)	0.41% (0.04% - 1.04%)	0.28% (0.07% - 0.62%)	30.24% (5.89% - 50.09%)	0.20% (0.01% - 1.38%)	10.07% (0.17% - 14.28%)	0.02% (0.01% - 0.89%)	16.15% (12.74% - 22.10%)	20.16% (16.27% - 24.80%)	3.51% (0.06% - 8.11%)	15.19% (7.92% - 20.06%)	16.71% (9.45% - 21.37%)	12.82% (7.59% - 16.89%)	19.52% (16.55% - 29.24%)
Sierra Leone	0.33% (0.02% - 1.01%)	0.35% (0.03% - 1.08%)	0.27% (0.05% - 0.57%)	23.60% (0.09% - 49.11%)	0.20% (0.02% - 1.42%)	10.24% (0.11% - 14.58%)	0.00% (0.00% - 0.88%)	2.95% (0.14% - 4.52%)	6.11% (3.41% - 8.82%)	3.76% (0.03% - 8.56%)	1.98% (0.12% - 5.59%)	2.38% (0.09% - 9.14%)	2.40% (0.00% - 5.33%)	6.65% (2.41% - 10.59%)
Singapore	0.45% (0.00% - 0.87%)	0.47% (0.03% - 1.02%)	0.40% (0.06% - 1.18%)	46.82% (9.03% - 99.97%)	0.41% (0.01% - 1.35%)	9.93% (0.21% - 13.24%)	0.00% (0.00% - 0.88%)	3.74% (2.66% - 9.10%)	7.04% (5.13% - 10.90%)	3.77% (0.03% - 8.67%)	2.01% (0.02% - 5.07%)	2.48% (0.24% - 8.53%)	1.61% (0.02% - 4.72%)	8.44% (6.57% - 10.88%)
Slovakia	0.00% (0.00% - 0.06%)	0.00% (0.00% - 0.06%)	0.00% (0.00% - 0.06%)	0.00% (0.00% - 0.06%)	0.00% (0.00% - 0.06%)	0.00% (0.00% - 0.06%)	0.00% (0.00% - 0.00%)	10.93% (10.01% - 12.58%)	10.93% (10.01% - 12.58%)	10.93% (10.01% - 12.58%)	10.93% (10.01% - 12.58%)	10.93% (10.01% - 12.58%)	10.93% (10.01% - 12.58%)	10.93% (10.01% - 12.58%)
Slovenia	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	14.76% (13.92% - 16.82%)	14.76% (13.92% - 16.82%)	14.76% (13.92% - 16.82%)	14.76% (13.92% - 16.82%)	14.76% (13.92% - 16.82%)	14.76% (13.92% - 16.82%)	14.76% (13.92% - 16.82%)
Solomon Islands	0.47% (0.02% - 0.96%)	0.46% (0.04% - 1.21%)	0.32% (0.08% - 1.29%)	33.50% (4.83% - 76.10%)	0.18% (0.01% - 1.40%)	10.02% (0.15% - 14.57%)	0.01% (0.00% - 0.87%)	1.44% (0.02% - 3.83%)	4.21% (1.26% - 8.07%)	3.01% (0.22% - 7.85%)	4.21% (2.65% - 6.53%)	4.02% (0.43% - 8.35%)	5.67% (1.01% - 7.69%)	6.19% (1.29% - 8.99%)
Somalia	0.27% (0.04% - 1.24%)	0.29% (0.01% - 1.31%)	0.24% (0.01% - 0.65%)	0.98% (0.06% - 2.08%)	0.72% (0.27% - 12.94%)	10.40% (0.05% - 14.64%)	0.01% (0.00% - 0.89%)	12.81% (2.28% - 15.72%)	15.94% (0.17% - 18.32%)	3.51% (0.08% - 7.29%)	8.92% (3.30% - 10.48%)	9.89% (0.09% - 12.67%)	6.92% (0.11% - 8.94%)	16.31% (1.01% - 19.59%)
South Africa	0.24% (0.01% - 0.86%)	0.24% (0.01% - 0.86%)	0.24% (0.01% - 0.86%)	0.24% (0.01% - 0.86%)	0.24% (0.01% - 0.86%)	0.24% (0.01% - 0.86%)	0.00% (0.00% - 0.00%)	10.16% (9.28% - 12.51%)	10.16% (9.28% - 12.51%)	10.16% (9.28% - 12.51%)	10.16% (9.28% - 12.51%)	10.16% (9.28% - 12.51%)	10.16% (9.28% - 12.51%)	10.16% (9.28% - 12.51%)
South Sudan	0.00% (0.00% - 1.05%)	0.00% (0.00% - 1.24%)	0.00% (0.00% - 0.55%)	0.00% (0.00% - 48.13%)	0.00% (0.00% - 0.45%)	0.00% (0.00% - 14.34%)	0.00% (0.00% - 0.87%)	0.00% (0.00% - 2.84%)	0.00% (0.00% - 5.25%)	0.00% (0.00% - 8.67%)	0.00% (0.00% - 5.91%)	0.00% (0.00% - 5.79%)	0.00% (0.00% - 7.64%)	0.00% (0.00% - 4.09%)
Spain	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	10.19% (7.67% - 12.43%)	10.19% (7.67% - 12.43%)	10.19% (7.67% - 12.43%)	10.19% (7.67% - 12.43%)	10.19% (7.67% - 12.43%)	10.19% (7.67% - 12.43%)	10.19% (7.67% - 12.43%)
Sri Lanka	0.29% (0.03%	0.33% (0.05	0.28% (0.05	14.24% (3.20%	0.24% (0.00%	10.42% (0.15%	0.01% (0.00	1.81% (0.53%	3.80% (1.21%	3.77% (0.03%	5.73% (2.66%	4.02% (1.88%	6.94% (5.79%	5.76% (1.68%

Country	Final cons.	House. cons.	Gov cons.	GCF	Exp	Imp	GDP	Agri...	Min. Manu., Util.	Manu.	Constr	Wholesale, Retail,...	Transp. Commun.	Other
	-1.15%)	% - 1.30%)	% - 0.60%)	- 20.43%)	-1.40%)	- 14.61%)	% - 0.87%)	- 15.74%)	20.03%)	8.67%)	- 16.81%)	20.36%)	16.54%)	- 19.26%)
St. Vincent and the Grenadines	0.28% (0.08% - 1.02%)	0.32% (0.03% - 1.13%)	0.29% (0.03% - 0.57%)	14.60% (3.26% - 32.48%)	0.19% (0.00% - 1.40%)	10.32% (0.14% - 14.41%)	0.01% (0.01% - 0.89%)	13.52% (11.55% - 20.23%)	16.72% (14.22% - 22.16%)	3.74% (0.05% - 8.33%)	12.33% (7.59% - 14.71%)	12.88% (11.13% - 17.76%)	10.13% (6.62% - 13.32%)	18.98% (15.39% - 20.32%)
Sudan	0.00% (0.00% - 1.23%)	0.00% (0.00% - 1.28%)	0.00% (0.00% - 0.58%)	0.00% (0.00% - 8.21%)	0.00% (0.00% - 0.81%)	0.00% (0.00% - 14.74%)	0.00% (0.00% - 0.87%)	0.00% (0.00% - 2.84%)	0.00% (0.00% - 5.25%)	0.00% (0.00% - 8.68%)	0.00% (0.00% - 5.91%)	0.00% (0.00% - 5.79%)	0.00% (0.00% - 7.64%)	0.00% (0.00% - 4.09%)
Sudan (Former)	0.28% (0.00% - 1.20%)	0.30% (0.00% - 1.27%)	0.22% (0.00% - 0.58%)	7.18% (0.00% - 13.05%)	0.20% (0.00% - 1.41%)	8.30% (0.00% - 14.66%)	0.00% (0.00% - 0.87%)	2.96% (0.00% - 5.92%)	5.48% (0.00% - 9.09%)	3.55% (0.00% - 6.08%)	3.30% (0.00% - 6.94%)	2.11% (0.00% - 9.09%)	3.53% (0.00% - 7.64%)	7.89% (0.00% - 11.22%)
Suriname	0.20% (0.00% - 1.16%)	0.27% (0.02% - 1.34%)	0.25% (0.03% - 0.65%)	11.92% (0.33% - 37.83%)	0.19% (0.02% - 1.30%)	10.46% (0.25% - 14.71%)	0.01% (0.00% - 0.88%)	5.86% (2.24% - 10.09%)	10.09% (0.07% - 12.09%)	3.76% (0.02% - 8.65%)	3.16% (0.19% - 5.61%)	4.24% (0.38% - 7.40%)	2.06% (0.14% - 5.78%)	9.45% (0.10% - 15.48%)
Swaziland	0.37% (0.02% - 0.82%)	0.43% (0.02% - 0.83%)	0.30% (0.05% - 1.24%)	49.74% (5.96% - 88.12%)	0.28% (0.02% - 1.38%)	9.87% (0.18% - 13.56%)	0.02% (0.01% - 0.90%)	17.42% (13.03% - 30.75%)	20.53% (17.01% - 33.75%)	3.76% (0.01% - 8.62%)	16.86% (13.71% - 25.40%)	18.00% (15.92% - 28.96%)	13.83% (11.30% - 25.42%)	24.21% (15.70% - 36.02%)
Sweden	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	14.19% (13.87% - 14.97%)	14.19% (13.87% - 14.97%)	14.19% (13.87% - 14.97%)	14.19% (13.87% - 14.97%)	14.19% (13.87% - 14.97%)	14.19% (13.87% - 14.97%)	14.19% (13.87% - 14.97%)
Switzerland	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	5.93% (4.55% - 6.51%)	5.93% (4.55% - 6.51%)	5.93% (4.55% - 6.51%)	5.93% (4.55% - 6.51%)	5.93% (4.55% - 6.51%)	5.93% (4.55% - 6.51%)	5.93% (4.55% - 6.51%)
Syrian Arab Republic	0.29% (0.03% - 1.18%)	0.31% (0.06% - 1.29%)	0.28% (0.05% - 0.60%)	13.00% (3.45% - 20.37%)	0.19% (0.01% - 1.40%)	10.46% (0.15% - 14.64%)	0.00% (0.00% - 0.87%)	1.37% (0.67% - 2.51%)	2.23% (1.03% - 3.98%)	3.77% (0.03% - 8.68%)	3.30% (0.56% - 6.11%)	2.02% (0.22% - 5.11%)	6.00% (1.70% - 7.15%)	3.72% (0.38% - 6.22%)
Tajikistan	1.15% (0.11% - 4.35%)	1.19% (0.00% - 4.25%)	1.43% (0.14% - 4.80%)	93.88% (11.80% - 99.97%)	2.11% (0.01% - 8.71%)	4.85% (0.09% - 13.90%)	0.01% (0.00% - 0.88%)	10.14% (2.22% - 15.01%)	13.17% (2.27% - 17.62%)	3.49% (0.12% - 8.31%)	6.93% (2.71% - 12.02%)	8.28% (6.32% - 11.72%)	5.54% (2.00% - 12.29%)	14.23% (4.70% - 17.16%)
Thailand	0.31% (0.04% - 1.06%)	0.36% (0.08% - 1.22%)	0.32% (0.06% - 0.57%)	17.67% (0.82% - 47.84%)	0.22% (0.02% - 1.44%)	10.30% (0.11% - 14.37%)	0.01% (0.00% - 0.87%)	2.24% (0.62% - 3.31%)	1.20% (0.13% - 2.79%)	3.77% (0.03% - 8.68%)	4.49% (1.46% - 6.90%)	2.99% (0.50% - 5.98%)	6.89% (2.51% - 8.16%)	2.82% (0.16% - 5.04%)
The Former Yugoslav Republic of Macedonia	0.28% (0.02% - 1.09%)	0.32% (0.05% - 1.23%)	0.29% (0.09% - 0.56%)	21.71% (4.13% - 42.72%)	0.14% (0.05% - 1.39%)	10.29% (0.16% - 14.40%)	0.02% (0.01% - 0.88%)	14.29% (10.05% - 18.26%)	17.49% (12.53% - 20.71%)	3.77% (0.02% - 8.65%)	10.94% (8.98% - 16.11%)	12.82% (9.54% - 17.38%)	9.43% (7.69% - 12.89%)	18.16% (13.67% - 25.25%)
Timor-Leste	0.30% (0.01% - 1.16%)	0.40% (0.01% - 1.32%)	0.27% (0.02% - 1.13%)	18.92% (1.00% - 75.03%)	0.19% (0.05% - 1.45%)	9.86% (0.12% - 14.29%)	0.00% (0.00% - 0.87%)	2.38% (0.85% - 5.39%)	0.85% (0.00% - 1.64%)	3.78% (0.19% - 8.64%)	5.65% (1.04% - 8.86%)	3.23% (0.24% - 8.74%)	7.77% (3.64% - 10.58%)	2.74% (0.08% - 5.04%)
Togo	0.28% (0.00% - 1.06%)	0.28% (0.01% - 1.16%)	0.29% (0.07% - 0.58%)	31.08% (4.09% - 50.56%)	0.19% (0.02% - 1.39%)	10.26% (0.16% - 14.33%)	0.01% (0.00% - 0.88%)	9.64% (5.92% - 20.38%)	13.20% (9.21% - 24.67%)	3.76% (0.01% - 8.62%)	7.06% (4.16% - 21.44%)	8.03% (6.01% - 24.99%)	5.02% (2.17% - 21.18%)	14.48% (11.41% - 23.89%)
Tonga	0.33% (0.04% - 0.84%)	0.33% (0.02% - 0.96%)	0.29% (0.02% - 0.58%)	23.26% (4.94% - 35.36%)	0.16% (0.07% - 1.40%)	10.06% (0.03% - 14.49%)	0.01% (0.01% - 0.88%)	10.83% (8.15% - 16.29%)	14.84% (11.48% - 19.85%)	3.48% (0.36% - 8.04%)	8.59% (5.30% - 11.81%)	10.49% (6.58% - 15.34%)	6.08% (4.03% - 11.53%)	14.88% (12.36% - 19.01%)
Trinidad and	0.29%	0.34%	0.30%	19.19%	0.20%	9.91%	0.01%	1.78%	1.56%	3.77%	3.78%	2.98%	6.74%	3.18%

Country	Final cons.	House. cons.	Gov cons.	GCF	Exp	Imp	GDP	Agri...	Min. Manu., Util.	Manu.	Constr	Wholesale, Retail,...	Transp. Commun.	Other
Tobago	(0.05% - 1.09%)	(0.03% - 1.22%)	(0.06% - 0.54%)	(3.31% - 67.30%)	(0.00% - 1.40%)	(0.15% - 14.46%)	(0.00% - 0.87%)	(0.56% - 2.98%)	(0.33% - 3.58%)	(0.03% - 8.68%)	(0.08% - 6.90%)	(0.71% - 6.24%)	(1.02% - 8.41%)	(0.59% - 5.36%)
Tunisia	0.29% (0.05% - 1.11%)	0.34% (0.01% - 1.25%)	0.30% (0.07% - 0.56%)	17.99% (2.93% - 33.44%)	0.22% (0.00% - 1.41%)	10.35% (0.15% - 14.47%)	0.01% (0.00% - 0.88%)	7.83% (3.72% - 9.34%)	10.87% (8.75% - 11.91%)	3.77% (0.03% - 8.68%)	4.53% (0.24% - 9.44%)	7.03% (0.37% - 11.82%)	2.02% (0.06% - 6.91%)	11.46% (7.54% - 15.43%)
Turkey	0.00% (0.00% - 5.03%)	0.00% (0.00% - 5.03%)	0.00% (0.00% - 5.03%)	0.00% (0.00% - 5.03%)	0.00% (0.00% - 5.03%)	0.00% (0.00% - 5.03%)	0.00% (0.00% - 0.00%)	10.55% (2.30% - 13.51%)	10.55% (2.30% - 13.51%)	10.55% (2.30% - 13.51%)	10.55% (2.30% - 13.51%)	10.55% (2.30% - 13.51%)	10.55% (2.30% - 13.51%)	10.55% (2.30% - 13.51%)
Turkmenistan	0.28% (0.01% - 1.20%)	0.33% (0.07% - 1.32%)	0.29% (0.07% - 0.62%)	13.12% (3.78% - 49.93%)	0.21% (0.01% - 1.40%)	10.70% (0.16% - 14.71%)	0.01% (0.00% - 0.90%)	2.67% (0.42% - 25.71%)	5.69% (1.13% - 29.15%)	3.72% (0.47% - 8.67%)	2.37% (0.32% - 23.09%)	2.88% (0.93% - 23.52%)	4.83% (0.92% - 20.99%)	7.84% (2.86% - 28.95%)
Turks and Caicos Islands	0.27% (0.03% - 1.12%)	0.27% (0.00% - 1.30%)	0.28% (0.08% - 0.60%)	19.52% (4.24% - 47.96%)	0.20% (0.02% - 1.39%)	10.39% (0.15% - 14.50%)	0.00% (0.00% - 0.87%)	6.31% (1.28% - 9.96%)	6.12% (1.92% - 10.86%)	3.73% (0.09% - 8.61%)	2.59% (0.04% - 9.48%)	3.38% (0.08% - 6.47%)	3.10% (0.53% - 10.21%)	7.51% (1.98% - 14.37%)
Tuvalu	0.15% (0.03% - 1.54%)	1.24% (0.09% - 6.18%)	0.24% (0.03% - 1.15%)	8.70% (0.30% - 13.36%)	5.53% (0.52% - 30.78%)	7.98% (0.25% - 14.38%)	0.01% (0.00% - 0.88%)	3.62% (1.55% - 8.50%)	17.36% (9.38% - 30.35%)	7.48% (0.43% - 13.39%)	1.93% (0.37% - 9.54%)	1.80% (0.29% - 13.23%)	2.21% (0.36% - 9.39%)	8.02% (6.17% - 11.95%)
Uganda	0.28% (0.03% - 1.17%)	0.29% (0.01% - 1.25%)	0.26% (0.05% - 0.55%)	14.81% (2.11% - 36.09%)	0.22% (0.01% - 1.41%)	10.42% (0.14% - 14.57%)	0.00% (0.00% - 0.88%)	5.84% (4.45% - 9.61%)	9.13% (7.42% - 11.33%)	3.77% (0.02% - 8.66%)	3.44% (0.71% - 7.32%)	4.35% (2.52% - 11.26%)	1.10% (0.23% - 6.35%)	11.09% (6.94% - 12.58%)
Ukraine	0.28% (0.02% - 1.05%)	0.34% (0.04% - 1.22%)	0.29% (0.07% - 0.53%)	20.46% (4.18% - 41.69%)	0.18% (0.02% - 1.39%)	10.38% (0.16% - 14.40%)	0.01% (0.00% - 0.88%)	9.97% (5.65% - 16.86%)	12.68% (9.19% - 20.03%)	3.77% (0.03% - 8.68%)	6.76% (1.94% - 17.88%)	8.56% (3.39% - 18.22%)	5.02% (0.67% - 14.47%)	14.55% (9.00% - 22.16%)
United Arab Emirates	0.28% (0.00% - 1.09%)	0.31% (0.06% - 1.19%)	0.29% (0.06% - 0.55%)	25.89% (3.76% - 38.27%)	0.19% (0.03% - 1.40%)	10.27% (0.15% - 14.41%)	0.01% (0.00% - 0.87%)	4.69% (2.34% - 6.59%)	1.64% (0.63% - 3.58%)	3.77% (0.03% - 8.68%)	7.92% (4.26% - 9.99%)	5.69% (1.40% - 9.87%)	9.95% (5.21% - 11.97%)	2.21% (0.25% - 3.58%)
United Kingdom	0.00% (0.00% - 0.07%)	0.00% (0.00% - 0.07%)	0.00% (0.00% - 0.07%)	0.00% (0.00% - 0.07%)	0.00% (0.00% - 0.07%)	0.00% (0.00% - 0.07%)	0.00% (0.00% - 0.00%)	12.21% (10.35% - 13.09%)	12.21% (10.35% - 13.09%)	12.21% (10.35% - 13.09%)	12.21% (10.35% - 13.09%)	12.21% (10.35% - 13.09%)	12.21% (10.35% - 13.09%)	12.21% (10.35% - 13.09%)
United Republic of Tanzania: Mainland	0.29% (0.04% - 1.15%)	0.32% (0.04% - 1.29%)	0.26% (0.05% - 0.60%)	8.69% (2.09% - 18.81%)	0.21% (0.05% - 1.41%)	10.45% (0.14% - 14.61%)	0.01% (0.00% - 0.88%)	5.22% (1.17% - 11.32%)	8.32% (5.46% - 13.04%)	3.77% (0.03% - 8.67%)	3.67% (0.79% - 5.74%)	4.75% (3.98% - 8.22%)	1.98% (0.49% - 3.30%)	10.97% (4.69% - 13.73%)
United States	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.16% (0.00% - 1.13%)	0.16% (0.00% - 1.13%)	0.16% (0.00% - 1.13%)	0.16% (0.00% - 1.13%)	0.16% (0.00% - 1.13%)	0.16% (0.00% - 1.13%)	0.16% (0.00% - 1.13%)
Uruguay	0.29% (0.04% - 1.15%)	0.32% (0.04% - 1.27%)	0.27% (0.04% - 0.57%)	12.81% (2.40% - 20.96%)	0.20% (0.03% - 1.40%)	10.43% (0.15% - 14.59%)	0.01% (0.00% - 0.88%)	6.39% (3.96% - 14.39%)	9.76% (6.52% - 16.10%)	3.77% (0.03% - 8.67%)	5.77% (2.02% - 8.80%)	7.13% (3.29% - 10.05%)	4.28% (0.27% - 5.95%)	12.48% (8.00% - 16.53%)
Uzbekistan	0.28% (0.06% - 1.13%)	0.33% (0.01% - 1.30%)	0.29% (0.03% - 0.60%)	15.03% (0.76% - 35.29%)	0.20% (0.00% - 1.43%)	10.33% (0.12% - 14.47%)	0.01% (0.01% - 0.88%)	12.02% (5.52% - 15.57%)	14.54% (9.06% - 18.75%)	3.77% (0.03% - 8.67%)	10.50% (3.01% - 15.48%)	12.35% (3.46% - 16.79%)	8.36% (0.92% - 12.89%)	15.91% (8.86% - 22.15%)
Vanuatu	0.26% (0.01% - 1.13%)	0.32% (0.01% - 1.27%)	0.29% (0.00% - 0.59%)	20.66% (3.79% - 39.29%)	0.11% (0.01% - 1.48%)	10.38% (0.05% - 14.50%)	0.01% (0.00% - 0.88%)	7.30% (4.05% - 12.31%)	10.54% (8.15% - 15.34%)	3.47% (0.31% - 7.97%)	5.11% (1.63% - 8.99%)	6.24% (5.11% - 9.37%)	3.57% (0.10% - 5.61%)	12.41% (7.31% - 14.06%)

Country	Final cons.	House. cons.	Gov cons.	GCF	Exp	Imp	GDP	Agri...	Min. Manu., Util.	Manu.	Constr	Wholesale, Retail,...	Transp. Commun.	Other
Venezuela	0.28% (0.01% - 1.18%)	0.30% (0.02% - 1.31%)	0.25% (0.03% - 0.61%)	7.88% (1.44% - 17.75%)	0.21% (0.04% - 1.42%)	10.51% (0.13% - 14.67%)	0.00% (0.00% - 0.88%)	2.34% (0.06% - 10.05%)	6.57% (3.33% - 11.75%)	3.77% (0.03% - 8.68%)	1.12% (0.19% - 4.47%)	2.54% (0.06% - 7.78%)	1.65% (0.23% - 5.89%)	7.47% (3.46% - 10.63%)
Viet Nam	0.29% (0.06% - 1.15%)	0.29% (0.06% - 1.21%)	0.28% (0.06% - 0.68%)	19.52% (3.08% - 63.17%)	0.15% (0.02% - 1.40%)	10.30% (0.15% - 14.48%)	0.00% (0.00% - 0.87%)	1.83% (0.85% - 2.68%)	1.68% (0.50% - 3.31%)	3.77% (0.03% - 8.68%)	3.97% (1.06% - 6.38%)	2.47% (0.12% - 5.41%)	6.43% (1.88% - 7.69%)	3.22% (0.27% - 5.48%)
Yemen	0.29% (0.03% - 1.14%)	0.30% (0.05% - 1.25%)	0.26% (0.05% - 0.78%)	15.02% (2.92% - 81.46%)	0.20% (0.04% - 1.41%)	10.43% (0.15% - 14.42%)	0.00% (0.00% - 0.87%)	0.52% (0.11% - 3.38%)	3.54% (2.26% - 5.19%)	3.77% (0.03% - 8.68%)	2.20% (0.02% - 5.39%)	1.86% (0.28% - 5.49%)	4.94% (0.57% - 6.61%)	4.76% (1.49% - 7.44%)
Zambia	0.29% (0.03% - 1.12%)	0.29% (0.05% - 1.29%)	0.28% (0.05% - 0.59%)	17.59% (2.88% - 33.36%)	0.18% (0.01% - 1.41%)	10.45% (0.15% - 14.57%)	0.00% (0.00% - 0.87%)	3.37% (0.90% - 4.96%)	6.01% (2.63% - 8.60%)	3.76% (0.02% - 8.67%)	3.31% (0.71% - 5.21%)	3.61% (0.40% - 8.80%)	3.42% (0.13% - 6.80%)	7.67% (1.24% - 10.61%)
Zanzibar	0.46% (0.03% - 1.81%)	0.52% (0.01% - 1.70%)	0.31% (0.05% - 2.20%)	36.01% (1.93% - 85.58%)	0.41% (0.07% - 3.14%)	9.60% (0.38% - 13.79%)	0.02% (0.01% - 0.89%)	15.49% (12.98% - 21.07%)	18.26% (16.54% - 23.69%)	3.63% (0.17% - 8.20%)	10.59% (8.24% - 21.48%)	13.11% (9.38% - 22.90%)	9.33% (7.29% - 18.96%)	19.75% (14.77% - 26.34%)
Zimbabwe	0.27% (0.08% - 1.67%)	0.40% (0.06% - 1.67%)	0.31% (0.02% - 1.60%)	18.88% (5.40% - 95.12%)	0.36% (0.04% - 2.58%)	8.80% (0.18% - 14.35%)	0.01% (0.00% - 0.88%)	7.21% (0.77% - 16.79%)	10.92% (2.70% - 19.97%)	3.77% (0.02% - 8.67%)	6.45% (0.09% - 11.83%)	7.55% (0.11% - 15.29%)	5.55% (1.69% - 10.56%)	10.39% (2.13% - 23.37%)
Taiwan	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	3.24% (1.95% - 4.30%)	3.24% (1.95% - 4.30%)	3.24% (1.95% - 4.30%)	3.24% (1.95% - 4.30%)	3.24% (1.95% - 4.30%)	3.24% (1.95% - 4.30%)	3.24% (1.95% - 4.30%)

Constant 2005 prices - relative differences (absolute change / UN SNA initial entry: median (min - max)) over all years

Country	Final cons.	House. cons.	Gov cons.	GCF	Exp	Imp	GDP	Agri...	Min. Manu., Util.	Manu.	Constr	Wholesale, Retail,...	Transp. Commun.	Other
Afghanistan	0.37% (0.04% - 1.08%)	0.88% (0.05% - 2.47%)	1.13% (0.13% - 3.05%)	19.57% (0.21% - 82.10%)	0.64% (0.01% - 2.78%)	14.45% (5.04% - 31.68%)	0.01% (0.00% - 0.83%)	3.18% (0.16% - 7.12%)	8.35% (4.36% - 10.42%)	1.78% (0.06% - 6.24%)	2.60% (0.77% - 6.12%)	4.48% (2.06% - 7.62%)	1.18% (0.32% - 4.21%)	11.65% (8.17% - 16.38%)
Albania	0.40% (0.10% - 2.36%)	0.36% (0.02% - 1.71%)	0.27% (0.07% - 2.11%)	13.90% (0.63% - 43.28%)	0.51% (0.07% - 3.11%)	14.12% (5.93% - 32.14%)	0.01% (0.00% - 0.83%)	6.34% (0.56% - 10.43%)	11.60% (3.13% - 13.57%)	1.43% (0.02% - 6.42%)	5.33% (1.17% - 9.17%)	7.24% (0.40% - 10.28%)	3.30% (0.04% - 5.30%)	14.91% (5.03% - 18.14%)
Algeria	0.56% (0.06% - 1.70%)	0.29% (0.03% - 1.74%)	0.46% (0.08% - 2.31%)	19.54% (5.85% - 43.63%)	0.36% (0.02% - 2.54%)	14.18% (5.85% - 31.59%)	0.00% (0.00% - 0.82%)	1.10% (0.01% - 7.74%)	5.09% (0.04% - 6.94%)	1.41% (0.02% - 6.44%)	4.06% (0.43% - 10.02%)	3.38% (1.21% - 7.81%)	3.57% (0.54% - 10.41%)	7.58% (0.71% - 11.91%)
Andorra	0.48% (0.02% - 1.74%)	0.33% (0.01% - 1.60%)	0.50% (0.04% - 2.18%)	15.94% (6.76% - 44.46%)	0.36% (0.03% - 2.56%)	14.14% (5.85% - 31.55%)	0.01% (0.00% - 0.83%)	4.92% (0.39% - 13.82%)	10.41% (4.54% - 19.93%)	1.59% (0.05% - 6.03%)	3.47% (0.65% - 17.97%)	6.14% (2.72% - 17.20%)	2.30% (0.01% - 12.49%)	13.17% (10.46% - 21.83%)
Angola	0.37% (0.01% - 2.48%)	0.67% (0.03% - 2.48%)	0.31% (0.06% - 1.85%)	41.75% (11.84% - 99.95%)	0.39% (0.05% - 4.27%)	13.46% (5.76% - 31.45%)	0.01% (0.00% - 0.84%)	4.07% (0.09% - 11.40%)	8.72% (3.26% - 15.79%)	1.41% (0.02% - 6.44%)	3.04% (0.33% - 12.55%)	3.39% (0.19% - 11.92%)	3.80% (0.13% - 8.83%)	11.61% (5.61% - 23.87%)
Anguilla	0.39% (0.00% - 1.46%)	0.40% (0.02% - 1.52%)	0.33% (0.07% - 1.15%)	36.84% (10.23% - 95.64%)	0.23% (0.01% - 4.02%)	13.83% (5.76% - 25.36%)	0.02% (0.01% - 0.84%)	10.01% (7.08% - 20.22%)	16.43% (11.38% - 23.46%)	2.13% (0.20% - 5.58%)	11.16% (6.53% - 19.97%)	13.36% (7.93% - 19.95%)	8.64% (3.08% - 14.57%)	18.04% (15.07% - 28.68%)
Antigua and	0.45%	0.29%	0.35%	37.20%	0.29%	13.92%	0.01%	8.77%	13.54%	1.59%	9.21%	10.20%	6.63%	17.57%

Country	Final cons.	House. cons.	Gov cons.	GCF	Exp	Imp	GDP	Agri...	Min. Manu., Util.	Manu.	Constr	Wholesale, Retail,...	Transp. Commun.	Other
Barbuda	(0.04% - 1.50%)	(0.01% - 1.38%)	(0.02% - 1.78%)	(11.05% - 82.36%)	(0.00% - 1.85%)	(5.80% - 31.25%)	(0.01% - 0.84%)	(4.75% - 15.88%)	(11.35% - 19.74%)	(0.05% - 6.17%)	(7.86% - 11.46%)	(8.61% - 14.48%)	(2.71% - 11.40%)	(13.24% - 22.13%)
Argentina	0.39% (0.02% - 1.68%)	0.32% (0.00% - 1.61%)	0.56% (0.09% - 2.18%)	17.31% (0.84% - 53.73%)	0.43% (0.03% - 2.51%)	14.26% (5.81% - 31.46%)	0.00% (0.00% - 0.83%)	3.01% (0.83% - 6.93%)	9.03% (4.79% - 12.23%)	1.41% (0.02% - 6.44%)	4.70% (0.97% - 7.08%)	5.09% (3.59% - 6.53%)	1.90% (0.06% - 3.51%)	11.39% (10.10% - 18.48%)
Armenia	0.28% (0.00% - 1.56%)	0.28% (0.04% - 1.00%)	0.46% (0.04% - 1.57%)	23.55% (2.76% - 96.78%)	0.35% (0.06% - 1.78%)	13.97% (5.85% - 30.44%)	0.01% (0.00% - 0.84%)	6.62% (0.82% - 10.63%)	11.02% (4.23% - 15.64%)	1.44% (0.02% - 6.41%)	7.07% (1.78% - 8.81%)	8.11% (0.98% - 10.07%)	2.38% (0.67% - 6.75%)	14.74% (6.61% - 21.22%)
Aruba	0.45% (0.05% - 1.60%)	0.23% (0.04% - 1.45%)	0.46% (0.05% - 1.86%)	33.35% (2.35% - 81.56%)	0.27% (0.02% - 2.08%)	13.97% (5.77% - 31.42%)	0.00% (0.00% - 0.83%)	2.48% (0.21% - 3.36%)	3.51% (0.75% - 6.60%)	1.44% (0.03% - 6.34%)	2.01% (0.31% - 3.81%)	0.45% (0.02% - 1.26%)	4.15% (2.07% - 7.56%)	6.66% (5.36% - 11.00%)
Australia	0.16% (0.00% - 0.89%)	0.20% (0.00% - 1.00%)	0.20% (0.00% - 1.00%)	0.16% (0.00% - 0.89%)	0.16% (0.00% - 0.89%)	0.16% (0.00% - 0.89%)	0.00% (0.00% - 0.00%)	8.46% (7.94% - 8.90%)	8.46% (7.94% - 8.90%)	8.46% (7.94% - 8.90%)	8.46% (7.94% - 8.90%)	8.46% (7.94% - 8.90%)	8.46% (7.94% - 8.90%)	8.46% (7.94% - 8.90%)
Austria	0.29% (0.05% - 1.53%)	0.29% (0.04% - 1.53%)	0.29% (0.04% - 1.53%)	0.29% (0.05% - 1.53%)	0.29% (0.05% - 1.53%)	0.29% (0.05% - 1.53%)	0.00% (0.00% - 0.00%)	11.18% (9.83% - 11.83%)	11.18% (9.83% - 11.83%)	11.18% (9.83% - 11.83%)	11.18% (9.83% - 11.83%)	11.18% (9.83% - 11.83%)	11.18% (9.83% - 11.83%)	11.18% (9.83% - 11.83%)
Azerbaijan	0.47% (0.05% - 1.38%)	0.33% (0.03% - 1.40%)	0.44% (0.08% - 1.66%)	18.89% (0.13% - 99.82%)	0.34% (0.01% - 3.45%)	14.20% (5.84% - 31.04%)	0.01% (0.00% - 0.83%)	4.68% (0.45% - 15.78%)	6.78% (1.51% - 12.06%)	1.41% (0.02% - 6.44%)	3.19% (0.38% - 11.93%)	4.95% (0.62% - 12.75%)	2.49% (0.05% - 15.82%)	9.21% (1.23% - 19.99%)
Bahamas	0.41% (0.03% - 1.59%)	0.30% (0.02% - 1.35%)	0.51% (0.05% - 1.88%)	29.04% (10.32% - 81.19%)	0.31% (0.00% - 2.12%)	14.01% (5.82% - 31.30%)	0.00% (0.00% - 0.82%)	1.79% (0.22% - 7.38%)	2.98% (1.05% - 4.60%)	1.43% (0.03% - 6.39%)	3.16% (0.26% - 8.69%)	1.57% (0.19% - 6.85%)	5.00% (2.52% - 9.94%)	6.29% (2.45% - 8.23%)
Bahrain	0.38% (0.07% - 1.25%)	0.49% (0.01% - 1.35%)	0.17% (0.01% - 0.78%)	48.84% (10.11% - 99.98%)	0.31% (0.00% - 3.38%)	13.81% (5.82% - 27.52%)	0.01% (0.00% - 0.81%)	15.15% (11.81% - 17.92%)	9.82% (6.49% - 12.23%)	1.41% (0.02% - 6.44%)	13.95% (11.46% - 19.92%)	13.56% (9.81% - 17.71%)	18.23% (15.40% - 20.75%)	7.38% (3.12% - 9.41%)
Bangladesh	0.37% (0.00% - 1.67%)	0.47% (0.01% - 1.80%)	0.59% (0.10% - 2.37%)	21.02% (9.61% - 51.35%)	0.39% (0.00% - 2.69%)	14.21% (5.71% - 31.63%)	0.00% (0.00% - 0.83%)	0.52% (0.05% - 3.52%)	5.99% (3.74% - 6.66%)	1.41% (0.02% - 6.43%)	1.97% (0.26% - 4.62%)	2.93% (0.11% - 3.89%)	2.53% (0.38% - 3.86%)	8.51% (6.63% - 11.82%)
Barbados	1.45% (0.20% - 5.44%)	0.74% (0.04% - 2.51%)	0.82% (0.16% - 2.97%)	83.00% (1.30% - 99.97%)	0.37% (0.01% - 7.08%)	13.44% (6.05% - 24.17%)	0.02% (0.01% - 0.84%)	15.22% (9.49% - 18.19%)	19.76% (13.90% - 24.37%)	1.44% (0.03% - 6.36%)	14.83% (8.19% - 22.30%)	17.91% (10.03% - 21.49%)	11.24% (6.94% - 17.32%)	23.52% (18.70% - 26.13%)
Belarus	0.81% (0.15% - 3.31%)	0.66% (0.09% - 1.75%)	0.38% (0.02% - 0.89%)	22.65% (1.47% - 89.05%)	0.40% (0.04% - 2.07%)	14.08% (5.87% - 31.15%)	0.01% (0.01% - 0.83%)	7.19% (1.17% - 13.80%)	13.24% (7.43% - 17.52%)	1.41% (0.02% - 6.43%)	8.47% (3.74% - 11.16%)	10.11% (4.21% - 13.09%)	4.66% (1.13% - 9.21%)	16.56% (9.84% - 19.95%)
Belgium	0.10% (0.00% - 0.49%)	0.09% (0.00% - 0.49%)	0.09% (0.00% - 0.49%)	0.10% (0.00% - 0.49%)	0.10% (0.00% - 0.49%)	0.10% (0.00% - 0.49%)	0.00% (0.00% - 0.00%)	11.71% (10.02% - 12.24%)	11.71% (10.02% - 12.24%)	11.71% (10.02% - 12.24%)	11.71% (10.02% - 12.24%)	11.71% (10.02% - 12.24%)	11.71% (10.02% - 12.24%)	11.71% (10.02% - 12.24%)
Belize	0.32% (0.08% - 1.60%)	0.32% (0.00% - 1.52%)	0.29% (0.02% - 2.09%)	43.11% (24.89% - 71.13%)	0.23% (0.03% - 2.34%)	13.69% (5.62% - 31.20%)	0.01% (0.01% - 0.83%)	7.75% (3.06% - 9.20%)	12.18% (7.47% - 14.60%)	1.58% (0.04% - 6.30%)	6.41% (1.75% - 12.21%)	9.76% (2.86% - 11.89%)	3.51% (0.49% - 8.23%)	15.68% (10.23% - 17.50%)
Benin	0.44% (0.05% - 1.77%)	0.32% (0.03% - 1.62%)	0.50% (0.06% - 2.19%)	13.02% (1.95% - 44.93%)	0.37% (0.03% - 2.61%)	14.17% (5.89% - 31.56%)	0.01% (0.01% - 0.83%)	5.90% (4.21% - 8.59%)	11.52% (9.29% - 12.36%)	1.51% (0.03% - 6.30%)	5.21% (3.20% - 10.26%)	7.80% (4.50% - 9.20%)	2.82% (1.73% - 5.27%)	13.75% (11.89% - 17.34%)

Country	Final cons.	House. cons.	Gov cons.	GCF	Exp	Imp	GDP	Agri...	Min. Manu., Util.	Manu.	Constr	Wholesale, Retail,...	Transp. Commun.	Other
Bermuda	0.45% (0.01% - 2.69%)	0.61% (0.02% - 2.75%)	0.57% (0.03% - 2.43%)	44.16% (16.30% - 99.74%)	0.20% (0.00% - 4.53%)	13.86% (5.76% - 30.65%)	0.01% (0.00% - 0.82%)	9.28% (5.29% - 10.88%)	3.44% (0.71% - 6.60%)	1.50% (0.04% - 6.20%)	9.17% (3.78% - 12.20%)	7.01% (4.85% - 10.37%)	11.13% (8.77% - 14.90%)	0.67% (0.01% - 1.58%)
Bhutan	0.38% (0.02% - 1.77%)	0.30% (0.02% - 1.58%)	0.70% (0.09% - 2.14%)	42.01% (4.43% - 87.40%)	0.83% (0.12% - 2.55%)	14.23% (4.92% - 31.34%)	0.00% (0.00% - 0.83%)	1.12% (0.30% - 3.72%)	5.96% (3.34% - 8.21%)	1.47% (0.03% - 6.37%)	1.31% (0.02% - 4.19%)	2.23% (0.09% - 3.68%)	1.97% (0.69% - 4.98%)	8.78% (7.06% - 14.03%)
Bolivia	0.54% (0.05% - 1.65%)	0.29% (0.04% - 1.42%)	0.47% (0.04% - 1.99%)	32.27% (13.26% - 72.72%)	0.30% (0.02% - 2.23%)	13.98% (5.78% - 31.41%)	0.01% (0.01% - 0.84%)	12.30% (9.08% - 16.38%)	18.16% (14.50% - 19.52%)	1.41% (0.02% - 6.43%)	11.51% (10.63% - 16.82%)	14.01% (11.72% - 15.76%)	9.87% (6.20% - 12.59%)	21.22% (17.34% - 25.27%)
Bosnia and Herzegovina	0.68% (0.00% - 20.35%)	0.23% (0.00% - 19.19%)	0.36% (0.03% - 18.89%)	29.19% (0.90% - 99.77%)	0.67% (0.15% - 6.32%)	14.26% (6.23% - 30.99%)	0.01% (0.01% - 0.84%)	13.27% (6.68% - 17.47%)	19.27% (12.78% - 21.76%)	1.42% (0.02% - 6.43%)	11.54% (8.13% - 19.72%)	12.91% (10.32% - 18.64%)	10.60% (3.96% - 14.72%)	21.80% (14.94% - 24.86%)
Botswana	0.40% (0.02% - 2.06%)	0.29% (0.01% - 1.48%)	0.31% (0.01% - 2.05%)	11.51% (2.31% - 47.32%)	0.49% (0.09% - 2.76%)	14.08% (5.96% - 31.59%)	0.00% (0.00% - 0.83%)	1.55% (0.03% - 2.39%)	4.54% (1.83% - 6.00%)	1.41% (0.02% - 6.42%)	2.34% (0.30% - 3.85%)	1.38% (0.03% - 2.82%)	3.77% (1.53% - 6.47%)	7.24% (5.46% - 12.51%)
Brazil	0.33% (0.00% - 2.70%)	0.36% (0.00% - 2.50%)	0.36% (0.00% - 2.50%)	0.33% (0.00% - 2.70%)	0.33% (0.00% - 2.70%)	0.33% (0.00% - 2.70%)	0.00% (0.00% - 0.00%)	17.13% (16.34% - 19.04%)	17.13% (16.34% - 19.04%)	17.13% (16.34% - 19.04%)	17.13% (16.34% - 19.04%)	17.13% (16.34% - 19.04%)	17.13% (16.34% - 19.04%)	17.13% (16.34% - 19.04%)
British Virgin Islands	0.34% (0.01% - 0.57%)	0.32% (0.04% - 0.64%)	0.31% (0.01% - 1.02%)	48.17% (20.25% - 96.64%)	0.12% (0.02% - 0.31%)	13.80% (5.66% - 29.34%)	0.01% (0.00% - 0.82%)	6.26% (2.11% - 7.43%)	1.11% (0.15% - 2.69%)	2.14% (0.11% - 5.84%)	6.21% (1.97% - 8.49%)	3.96% (3.06% - 6.06%)	8.61% (6.53% - 11.05%)	2.69% (0.73% - 5.88%)
Brunei Darussalam	0.51% (0.03% - 1.45%)	0.87% (0.09% - 1.29%)	0.40% (0.08% - 1.85%)	83.07% (42.38% - 99.92%)	1.04% (0.18% - 3.73%)	13.62% (5.22% - 31.12%)	0.01% (0.00% - 0.83%)	5.55% (1.29% - 7.41%)	1.61% (0.11% - 4.05%)	1.41% (0.02% - 6.43%)	4.56% (0.68% - 8.00%)	3.02% (0.76% - 4.97%)	8.24% (3.85% - 10.42%)	2.97% (0.96% - 11.19%)
Bulgaria	0.19% (0.00% - 3.57%)	0.19% (0.00% - 3.57%)	0.19% (0.00% - 3.57%)	0.19% (0.00% - 3.57%)	0.19% (0.00% - 3.57%)	0.19% (0.00% - 3.57%)	0.00% (0.00% - 0.00%)	16.07% (7.65% - 18.60%)	16.07% (7.65% - 18.60%)	16.07% (7.65% - 18.60%)	16.07% (7.65% - 18.60%)	16.07% (7.65% - 18.60%)	16.07% (7.65% - 18.60%)	16.07% (7.65% - 18.60%)
Burkina Faso	0.40% (0.00% - 2.02%)	0.54% (0.00% - 1.54%)	0.40% (0.06% - 2.00%)	16.40% (4.95% - 30.78%)	0.40% (0.03% - 2.67%)	14.14% (5.87% - 31.73%)	0.01% (0.00% - 0.82%)	8.93% (1.41% - 16.21%)	12.09% (0.17% - 22.94%)	1.45% (0.03% - 6.39%)	7.49% (0.01% - 20.86%)	7.58% (1.10% - 19.80%)	8.43% (0.15% - 15.86%)	14.01% (0.42% - 24.15%)
Burundi	0.32% (0.07% - 13.04%)	0.35% (0.05% - 13.10%)	0.34% (0.04% - 12.51%)	43.57% (0.16% - 99.64%)	0.35% (0.01% - 26.77%)	11.44% (0.98% - 32.36%)	0.01% (0.00% - 0.82%)	5.26% (0.25% - 14.52%)	5.81% (0.31% - 17.47%)	1.77% (0.14% - 4.98%)	3.88% (0.56% - 9.31%)	5.91% (0.77% - 12.67%)	5.15% (0.57% - 9.15%)	8.68% (0.33% - 19.68%)
Cambodia	0.34% (0.09% - 1.30%)	0.31% (0.08% - 1.28%)	0.43% (0.04% - 1.66%)	51.58% (14.74% - 94.07%)	0.17% (0.01% - 1.55%)	13.78% (5.58% - 30.96%)	0.00% (0.00% - 0.83%)	2.62% (0.04% - 6.53%)	7.94% (6.32% - 11.00%)	1.68% (0.05% - 6.33%)	3.43% (0.21% - 5.92%)	4.31% (3.00% - 5.53%)	1.64% (0.07% - 2.23%)	11.18% (8.35% - 17.22%)
Cameroon	0.43% (0.00% - 1.65%)	0.35% (0.00% - 1.57%)	0.46% (0.08% - 2.14%)	16.31% (6.39% - 54.11%)	0.35% (0.04% - 2.43%)	14.14% (5.86% - 31.46%)	0.00% (0.00% - 0.83%)	4.34% (2.52% - 7.14%)	9.64% (7.22% - 11.97%)	1.41% (0.02% - 6.43%)	4.55% (1.21% - 9.17%)	5.64% (4.86% - 8.39%)	1.97% (0.18% - 4.08%)	12.74% (11.18% - 17.72%)
Canada	0.06% (0.01% - 0.48%)	0.07% (0.00% - 0.48%)	0.07% (0.00% - 0.48%)	0.06% (0.01% - 0.48%)	0.06% (0.01% - 0.48%)	0.06% (0.01% - 0.48%)	0.00% (0.00% - 0.00%)	7.24% (6.37% - 7.77%)	7.24% (6.37% - 7.77%)	7.24% (6.37% - 7.77%)	7.24% (6.37% - 7.77%)	7.24% (6.37% - 7.77%)	7.24% (6.37% - 7.77%)	7.24% (6.37% - 7.77%)
Cape Verde	0.45% (0.01% - 1.49%)	0.32% (0.00% - 1.70%)	0.31% (0.02% - 2.27%)	24.60% (5.19% - 53.37%)	0.38% (0.03% - 2.44%)	14.05% (5.85% - 31.44%	0.01% (0.00% - 0.83%	4.97% (0.09% - 9.98%)	9.14% (4.21% - 13.41%)	1.93% (0.05% - 6.18%)	4.64% (2.14% - 5.56%)	5.89% (1.43% - 8.40%)	2.43% (0.28% - 5.01%)	12.99% (6.06% - 17.84%

Country	Final cons.	House. cons.	Gov cons.	GCF	Exp	Imp	GDP	Agri...	Min. Manu., Util.	Manu.	Constr	Wholesale, Retail,...	Transp. Commun.	Other
Cayman Islands	0.33% (0.00% - 1.43%)	0.27% (0.00% - 1.32%)	0.49% (0.05% - 1.89%)	34.53% (11.90% - 90.82%)	0.24% (0.01% - 1.96%)	13.95% (5.80% - 30.94%)	0.01% (0.00% - 0.81%)	14.90% (10.86% - 16.50%)	9.29% (7.00% - 12.15%)	1.36% (0.02% - 6.34%)	14.61% (10.40% - 18.15%)	12.98% (11.48% - 16.03%)	17.79% (15.40% - 20.30%)	6.65% (4.08% - 7.36%)
Central African Republic	0.62% (0.07% - 2.80%)	0.45% (0.02% - 1.01%)	0.17% (0.00% - 1.20%)	37.19% (14.82% - 92.04%)	0.23% (0.00% - 2.65%)	13.86% (5.34% - 30.56%)	0.00% (0.00% - 0.83%)	4.29% (2.21% - 5.86%)	9.11% (6.73% - 11.68%)	1.51% (0.04% - 6.23%)	3.29% (0.45% - 9.37%)	4.93% (3.02% - 8.96%)	1.25% (0.03% - 4.42%)	11.80% (10.14% - 15.74%)
Chad	0.28% (0.01% - 5.48%)	0.91% (0.01% - 5.64%)	0.17% (0.01% - 5.00%)	41.78% (7.79% - 99.90%)	0.18% (0.07% - 11.12%)	11.67% (5.63% - 25.80%)	0.02% (0.00% - 0.83%)	11.41% (0.20% - 17.50%)	15.36% (2.30% - 23.06%)	1.42% (0.02% - 6.42%)	10.54% (0.76% - 20.81%)	14.26% (0.42% - 20.59%)	7.07% (0.36% - 15.45%)	21.37% (5.27% - 26.91%)
Chile	0.44% (0.01% - 1.71%)	0.26% (0.03% - 1.48%)	0.50% (0.08% - 2.05%)	23.96% (9.76% - 57.74%)	0.33% (0.02% - 2.40%)	14.06% (5.81% - 31.44%)	0.00% (0.00% - 0.83%)	3.51% (0.78% - 7.59%)	9.48% (5.79% - 11.12%)	1.41% (0.02% - 6.44%)	2.83% (1.64% - 8.23%)	5.49% (3.74% - 7.16%)	1.90% (0.22% - 3.23%)	12.19% (9.03% - 16.39%)
China, People's Republic of	0.50% (0.02% - 1.28%)	0.50% (0.02% - 1.28%)	0.50% (0.02% - 1.28%)	0.50% (0.02% - 1.28%)	0.50% (0.02% - 1.28%)	0.50% (0.02% - 1.28%)	0.00% (0.00% - 0.00%)	2.85% (0.87% - 5.24%)	2.85% (0.87% - 5.24%)	0.00% (0.00% - 1.24%)	2.85% (0.87% - 5.24%)	2.85% (0.87% - 5.24%)	2.85% (0.87% - 5.24%)	2.85% (0.87% - 5.24%)
China: Hong Kong SAR	0.62% (0.08% - 1.51%)	0.53% (0.15% - 1.55%)	0.49% (0.02% - 1.21%)	94.97% (48.37% - 100.00%)	0.66% (0.12% - 4.08%)	13.35% (5.44% - 25.32%)	0.00% (0.00% - 0.83%)	4.97% (0.19% - 6.98%)	1.06% (0.10% - 4.76%)	1.41% (0.02% - 6.44%)	3.81% (0.90% - 5.96%)	2.23% (0.51% - 3.45%)	6.52% (3.65% - 10.01%)	4.54% (0.97% - 8.90%)
China: Macao SAR	0.45% (0.03% - 1.50%)	0.62% (0.00% - 1.36%)	0.30% (0.03% - 1.93%)	62.95% (13.32% - 99.79%)	0.28% (0.03% - 2.08%)	13.67% (5.79% - 31.02%)	0.03% (0.02% - 0.88%)	0.00% (0.00% - 0.00%)	27.50% (18.62% - 54.17%)	1.43% (0.02% - 6.36%)	22.68% (16.67% - 47.29%)	26.40% (15.89% - 47.91%)	19.21% (11.18% - 45.46%)	33.10% (20.53% - 55.79%)
Colombia	0.46% (0.02% - 1.84%)	0.33% (0.00% - 1.76%)	0.49% (0.06% - 2.33%)	15.87% (6.06% - 31.89%)	0.37% (0.00% - 2.81%)	14.14% (5.86% - 31.71%)	0.01% (0.00% - 0.83%)	4.44% (1.27% - 7.96%)	9.14% (7.74% - 11.70%)	1.41% (0.02% - 6.44%)	4.32% (2.30% - 6.37%)	5.68% (4.64% - 7.29%)	1.12% (0.10% - 3.11%)	12.81% (9.23% - 17.63%)
Comoros	0.32% (0.07% - 1.60%)	0.36% (0.01% - 1.47%)	0.39% (0.03% - 2.03%)	38.79% (21.09% - 70.17%)	0.29% (0.03% - 2.32%)	13.69% (5.48% - 31.10%)	0.01% (0.00% - 0.82%)	4.85% (4.03% - 7.02%)	1.39% (0.06% - 3.38%)	2.92% (0.43% - 4.09%)	5.23% (0.24% - 10.00%)	2.53% (0.57% - 7.82%)	8.73% (5.57% - 10.60%)	3.20% (0.17% - 5.56%)
Congo	0.20% (0.01% - 2.77%)	0.37% (0.02% - 1.86%)	0.52% (0.03% - 2.43%)	23.84% (2.75% - 53.20%)	0.19% (0.02% - 2.44%)	13.93% (5.67% - 31.54%)	0.01% (0.00% - 0.82%)	3.04% (0.04% - 12.53%)	3.82% (0.48% - 7.36%)	1.40% (0.02% - 6.42%)	3.44% (0.94% - 8.47%)	2.17% (0.06% - 8.90%)	5.94% (0.95% - 15.23%)	4.75% (1.00% - 11.89%)
Cook Islands	0.64% (0.06% - 2.61%)	0.78% (0.18% - 2.86%)	0.79% (0.07% - 2.33%)	67.41% (25.77% - 96.05%)	1.63% (0.15% - 5.26%)	12.17% (5.30% - 24.94%)	0.01% (0.00% - 0.82%)	6.77% (2.54% - 9.89%)	1.54% (0.27% - 7.01%)	2.58% (0.86% - 5.68%)	8.47% (0.96% - 11.21%)	4.86% (0.10% - 9.68%)	10.35% (2.53% - 12.45%)	1.96% (0.41% - 6.10%)
Costa Rica	0.26% (0.08% - 1.23%)	0.39% (0.07% - 1.91%)	0.67% (0.08% - 2.48%)	28.05% (14.79% - 68.83%)	0.28% (0.02% - 2.36%)	14.02% (5.76% - 31.31%)	0.00% (0.00% - 0.83%)	1.33% (0.02% - 4.42%)	6.87% (4.05% - 7.96%)	1.42% (0.02% - 6.41%)	1.41% (0.50% - 5.71%)	3.48% (0.12% - 5.32%)	1.64% (0.08% - 3.37%)	9.95% (6.84% - 12.12%)
Croatia	0.09% (0.00% - 1.84%)	0.08% (0.00% - 2.00%)	0.08% (0.00% - 2.00%)	0.09% (0.00% - 1.84%)	0.09% (0.00% - 1.84%)	0.09% (0.00% - 1.84%)	0.00% (0.00% - 0.00%)	18.00% (16.42% - 18.46%)	18.00% (16.42% - 18.46%)	18.00% (16.42% - 18.46%)	18.00% (16.42% - 18.46%)	18.00% (16.42% - 18.46%)	18.00% (16.42% - 18.46%)	18.00% (16.42% - 18.46%)
Cuba	0.49% (0.08% - 2.14%)	0.43% (0.02% - 1.16%)	0.23% (0.01% - 1.73%)	17.35% (4.16% - 50.37%)	0.39% (0.03% - 2.51%)	14.20% (5.82% - 31.49%)	0.02% (0.02% - 0.84%)	17.47% (13.99% - 21.71%)	23.36% (18.39% - 25.33%)	1.41% (0.02% - 6.43%)	16.51% (12.68% - 23.25%)	19.86% (14.37% - 22.87%)	14.65% (11.43% - 17.63%)	26.39% (21.75% - 27.49%)
Cyprus	0.00% (0.00% -	0.00% (0.00% -	0.00% (0.00% -	0.00% (0.00% - 0.00%)	0.00% (0.00% -	0.00% (0.00% -	0.00% (0.00% -	11.25% (11.24% -	11.25% (11.24% -	11.25% (11.24% -	11.25% (11.24% -	11.25% (11.24% - 11.26%)	11.25% (11.24% -	11.25% (11.24% -

Country	Final cons.	House. cons.	Gov cons.	GCF	Exp	Imp	GDP	Agri...	Min. Manu., Util.	Manu.	Constr	Wholesale, Retail,...	Transp. Commun.	Other
	0.00%)	0.00%)	0.00%)		0.00%)	0.00%)	0.00%)	11.26%)	11.26%)	11.26%)	11.26%)		11.26%)	11.26%)
Czech Republic	0.16% (0.00% - 0.59%)	0.16% (0.00% - 0.59%)	0.16% (0.00% - 0.59%)	0.16% (0.00% - 0.59%)	0.16% (0.00% - 0.59%)	0.16% (0.00% - 0.59%)	0.00% (0.00% - 0.00%)	10.17% (5.19% - 10.98%)	10.17% (5.19% - 10.98%)	10.17% (5.19% - 10.98%)	10.17% (5.19% - 10.98%)	10.17% (5.19% - 10.98%)	10.17% (5.19% - 10.98%)	10.17% (5.19% - 10.98%)
CÃ´te d'Ivoire	0.73% (0.01% - 2.24%)	0.37% (0.01% - 2.56%)	0.52% (0.04% - 2.83%)	44.55% (23.41% - 99.89%)	0.19% (0.02% - 4.29%)	13.83% (5.26% - 32.47%)	0.01% (0.01% - 0.84%)	11.07% (6.61% - 14.00%)	15.77% (11.94% - 19.49%)	1.41% (0.02% - 6.43%)	9.35% (6.81% - 16.76%)	11.89% (9.05% - 15.69%)	8.11% (3.60% - 11.77%)	19.31% (15.22% - 23.84%)
Democratic People's Republic of Korea	23.06% (21.64% - 24.24%)	Inf% (Inf% - Inf%)	Inf% (Inf% - Inf%)	Inf% (Inf% - Inf%)	0.42% (0.05% - 2.83%)	14.22% (5.89% - 31.82%)	0.01% (0.00% - 0.82%)	5.26% (2.18% - 7.47%)	0.79% (0.02% - 1.20%)	1.41% (0.02% - 6.43%)	5.43% (1.24% - 7.71%)	0.00% (0.00% - 0.00%)	0.00% (0.00% - 0.00%)	2.95% (1.05% - 6.90%)
Democratic Republic of the Congo	0.45% (0.06% - 3.14%)	0.60% (0.07% - 4.08%)	0.92% (0.18% - 4.66%)	23.27% (4.15% - 99.89%)	0.31% (0.00% - 4.05%)	13.59% (5.77% - 32.09%)	0.00% (0.00% - 0.83%)	2.83% (0.33% - 6.70%)	4.80% (0.28% - 11.30%)	1.42% (0.02% - 6.42%)	1.45% (0.39% - 9.26%)	2.05% (0.50% - 8.19%)	4.26% (0.04% - 9.34%)	8.50% (1.62% - 15.08%)
Denmark	0.20% (0.00% - 0.64%)	0.20% (0.00% - 0.64%)	0.20% (0.00% - 0.64%)	0.20% (0.00% - 0.64%)	0.20% (0.00% - 0.64%)	0.20% (0.00% - 0.64%)	0.00% (0.00% - 0.00%)	16.31% (14.34% - 18.32%)	16.31% (14.34% - 18.32%)	16.31% (14.34% - 18.32%)	16.31% (14.34% - 18.32%)	16.31% (14.34% - 18.32%)	16.31% (14.34% - 18.32%)	16.31% (14.34% - 18.32%)
Djibouti	0.52% (0.03% - 2.62%)	0.75% (0.02% - 1.42%)	0.32% (0.01% - 1.01%)	48.11% (25.96% - 96.89%)	0.16% (0.00% - 1.54%)	13.81% (5.50% - 29.35%)	0.02% (0.01% - 0.84%)	9.53% (4.48% - 21.52%)	14.06% (11.32% - 24.46%)	1.52% (0.05% - 6.21%)	11.27% (7.22% - 16.65%)	11.34% (8.29% - 19.68%)	6.04% (2.67% - 15.92%)	18.09% (12.48% - 29.22%)
Dominica	0.40% (0.02% - 1.01%)	0.37% (0.05% - 0.90%)	0.23% (0.00% - 1.47%)	38.53% (16.49% - 97.70%)	0.23% (0.04% - 2.61%)	13.83% (5.63% - 28.99%)	0.01% (0.01% - 0.84%)	8.38% (4.59% - 14.63%)	14.27% (8.60% - 19.58%)	1.74% (0.08% - 5.97%)	9.24% (4.69% - 13.11%)	10.85% (7.34% - 13.12%)	6.89% (0.27% - 10.70%)	16.50% (13.46% - 23.03%)
Dominican Republic	0.34% (0.01% - 1.51%)	0.50% (0.00% - 1.54%)	0.56% (0.11% - 2.07%)	30.72% (3.86% - 74.66%)	0.39% (0.01% - 2.23%)	13.91% (5.86% - 31.28%)	0.00% (0.00% - 0.83%)	4.79% (0.86% - 7.34%)	3.61% (0.60% - 13.02%)	1.42% (0.02% - 6.43%)	1.76% (0.30% - 5.90%)	1.49% (0.07% - 7.42%)	5.10% (0.34% - 6.66%)	7.63% (2.74% - 19.37%)
Ecuador	0.28% (0.05% - 1.19%)	0.55% (0.03% - 2.09%)	0.47% (0.04% - 2.66%)	18.91% (6.30% - 51.59%)	0.37% (0.01% - 2.49%)	14.11% (5.86% - 31.48%)	0.00% (0.00% - 0.82%)	2.61% (0.23% - 6.06%)	1.88% (0.82% - 4.95%)	1.41% (0.02% - 6.44%)	2.66% (0.19% - 4.85%)	1.34% (0.15% - 3.53%)	5.95% (3.93% - 7.40%)	5.95% (1.90% - 9.22%)
Egypt	0.41% (0.00% - 1.58%)	0.29% (0.00% - 1.54%)	0.45% (0.06% - 2.11%)	24.02% (13.28% - 74.03%)	0.28% (0.01% - 2.33%)	14.06% (5.79% - 31.26%)	0.00% (0.00% - 0.83%)	1.86% (0.05% - 4.04%)	6.12% (2.58% - 7.18%)	1.41% (0.02% - 6.44%)	2.07% (0.16% - 5.07%)	1.44% (0.12% - 5.26%)	2.51% (1.47% - 3.72%)	8.83% (4.83% - 12.53%)
El Salvador	0.36% (0.10% - 1.49%)	0.33% (0.01% - 1.67%)	0.53% (0.05% - 2.24%)	40.64% (12.48% - 88.42%)	0.25% (0.02% - 2.38%)	13.91% (5.80% - 31.11%)	0.00% (0.00% - 0.83%)	1.22% (0.01% - 2.87%)	4.75% (3.01% - 6.55%)	1.42% (0.03% - 6.38%)	2.27% (0.33% - 3.50%)	1.50% (0.08% - 2.42%)	3.13% (1.26% - 5.30%)	7.68% (6.61% - 11.54%)
Equatorial Guinea	1.04% (0.03% - 19.14%)	1.41% (0.11% - 14.60%)	1.69% (0.14% - 14.08%)	45.92% (3.69% - 100.00%)	1.47% (0.03% - 34.68%)	10.13% (0.28% - 31.59%)	0.01% (0.00% - 0.84%)	5.69% (1.94% - 36.62%)	6.93% (0.41% - 42.80%)	2.30% (0.00% - 6.43%)	5.62% (0.85% - 40.35%)	4.61% (0.56% - 39.35%)	7.63% (0.70% - 35.08%)	6.19% (1.72% - 44.75%)
Eritrea	0.41% (0.04% - 1.30%)	0.34% (0.05% - 1.46%)	0.29% (0.01% - 1.84%)	36.45% (12.14% - 94.95%)	0.37% (0.03% - 2.26%)	13.93% (5.69% - 30.87%)	0.01% (0.00% - 0.83%)	5.61% (0.01% - 8.75%)	10.21% (4.50% - 13.98%)	1.82% (0.10% - 5.78%)	4.63% (0.07% - 11.90%)	7.80% (0.53% - 11.51%)	1.89% (0.45% - 7.40%)	13.55% (6.73% - 18.72%)
Estonia	0.32% (0.00% - 3.35%)	0.32% (0.00% - 3.35%)	0.32% (0.00% - 3.35%)	0.32% (0.00% - 3.35%)	0.32% (0.00% - 3.35%)	0.32% (0.00% - 3.35%)	0.00% (0.00% - 0.00%)	12.01% (7.91% - 15.20%)	12.01% (7.91% - 15.20%)	12.01% (7.91% - 15.20%)	12.01% (7.91% - 15.20%)	12.01% (7.91% - 15.20%)	12.01% (7.91% - 15.20%)	12.01% (7.91% - 15.20%)
Ethiopia	0.42% (0.01%	0.40% (0.01%	0.57% (0.05%	28.47% (13.16%	0.33% (0.04%	14.09% (5.77%	0.01% (0.00	3.77% (2.28%	9.64% (7.70%	1.43% (0.02%	4.50% (1.04%	6.21% (1.35%	1.03% (0.21%	12.08% (8.73%

Country	Final cons.	House. cons.	Gov cons.	GCF	Exp	Imp	GDP	Agri...	Min. Manu., Util.	Manu.	Constr	Wholesale, Retail,...	Transp. Commun.	Other
	-1.60%)	-1.53%)	-2.10%)	-64.94%)	-2.36%)	-31.35%)	%-0.83%)	--7.51%)	11.36%)	6.41%)	-7.85%)	8.61%)	2.64%)	-15.78%)
Fiji	0.29% (0.04%-1.00%)	0.29% (0.05%-1.07%)	0.26% (0.02%-0.71%)	52.87% (23.64%-99.88%)	0.15% (0.03%-3.10%)	13.77% (5.67%-26.63%)	0.02% (0.01%-0.84%)	12.85% (2.76%--16.41%)	18.21% (9.10%-21.00%)	1.50% (0.03%-6.32%)	11.20% (6.59%-18.98%)	12.83% (5.79%-18.21%)	9.91% (2.72%-13.50%)	20.62% (11.42%-24.87%)
Finland	0.48% (0.00%-1.53%)	0.38% (0.00%-1.79%)	0.38% (0.00%-1.79%)	0.48% (0.00%-1.53%)	0.48% (0.00%-1.53%)	0.48% (0.00%-1.53%)	0.00% (0.00%-0.00%)	13.99% (11.56%-15.94%)	13.99% (11.56%-15.94%)	13.99% (11.56%-15.94%)	13.99% (11.56%-15.94%)	13.99% (11.56%-15.94%)	13.99% (11.56%-15.94%)	13.99% (11.56%-15.94%)
France	0.02% (0.00%-0.24%)	0.02% (0.00%-0.24%)	0.02% (0.00%-0.24%)	0.02% (0.00%-0.24%)	0.02% (0.00%-0.24%)	0.02% (0.00%-0.24%)	0.00% (0.00%-0.00%)	11.12% (10.15%-11.57%)	11.12% (10.15%-11.57%)	11.12% (10.15%-11.57%)	11.12% (10.15%-11.57%)	11.12% (10.15%-11.57%)	11.12% (10.15%-11.57%)	11.12% (10.15%-11.57%)
French Polynesia	0.38% (0.03%-1.59%)	0.42% (0.06%-1.53%)	0.42% (0.07%-2.10%)	62.29% (53.86%-95.95%)	0.34% (0.07%-2.34%)	13.52% (5.36%-31.14%)	0.00% (0.00%-0.83%)	3.26% (0.09%-6.33%)	6.15% (0.21%-9.91%)	1.45% (0.03%-6.36%)	1.23% (0.20%-2.51%)	2.66% (0.66%-5.35%)	1.84% (0.15%-6.98%)	10.53% (2.04%-13.58%)
Gabon	0.46% (0.02%-1.81%)	0.37% (0.00%-1.93%)	0.45% (0.01%-2.50%)	14.13% (8.27%-26.30%)	0.35% (0.04%-2.88%)	14.16% (5.82%-31.86%)	0.01% (0.00%-0.83%)	3.90% (0.40%--13.58%)	6.53% (0.04%-11.12%)	1.41% (0.02%-6.43%)	2.44% (0.08%-9.73%)	4.05% (0.34%-10.55%)	2.22% (0.24%-13.62%)	10.50% (0.23%-16.22%)
Gambia	0.60% (0.04%-1.65%)	0.66% (0.05%-1.78%)	0.37% (0.00%-1.40%)	33.36% (12.01%-99.24%)	0.39% (0.01%-4.46%)	14.14% (5.63%-24.94%)	0.01% (0.00%-0.83%)	5.38% (3.64%-8.70%)	4.04% (0.31%-12.85%)	3.86% (0.27%-5.99%)	2.42% (1.10%-4.74%)	2.67% (1.02%-8.15%)	5.77% (0.81%-8.27%)	6.00% (1.94%-16.23%)
Georgia	0.40% (0.01%-1.69%)	0.32% (0.01%-1.64%)	0.55% (0.11%-2.22%)	21.25% (3.40%-65.31%)	0.23% (0.03%-2.56%)	14.05% (5.75%-31.34%)	0.01% (0.01%-0.83%)	12.07% (4.25%--24.21%)	16.09% (8.65%-30.48%)	1.43% (0.02%-6.41%)	10.71% (2.95%-28.00%)	14.43% (4.78%-27.24%)	7.78% (1.69%-24.17%)	20.42% (14.32%-32.82%)
Germany	0.09% (0.00%-0.45%)	0.09% (0.00%-0.45%)	0.09% (0.00%-0.45%)	0.09% (0.00%-0.45%)	0.09% (0.00%-0.45%)	0.09% (0.00%-0.45%)	0.00% (0.00%-0.00%)	11.28% (9.96%--12.48%)	11.28% (9.96%-12.48%)	11.28% (9.96%-12.48%)	11.28% (9.96%-12.48%)	11.28% (9.96%-12.48%)	11.28% (9.96%-12.48%)	11.28% (9.96%-12.48%)
Ghana	0.28% (0.01%-1.66%)	0.22% (0.00%-1.54%)	0.41% (0.02%-2.11%)	19.52% (1.94%-81.46%)	0.41% (0.08%-2.41%)	14.11% (5.84%-31.31%)	0.00% (0.00%-0.83%)	2.48% (0.21%--4.29%)	7.15% (4.61%-10.79%)	1.42% (0.02%-6.43%)	2.64% (0.30%-8.75%)	4.54% (0.72%-7.68%)	1.63% (0.48%-4.08%)	10.45% (6.40%-12.78%)
Greece	0.23% (0.00%-0.98%)	0.23% (0.00%-0.98%)	0.23% (0.00%-0.98%)	0.23% (0.00%-0.98%)	0.23% (0.00%-0.98%)	0.23% (0.00%-0.98%)	0.00% (0.00%-0.00%)	12.21% (7.74%--13.96%)	12.21% (7.74%-13.96%)	12.21% (7.74%-13.96%)	12.21% (7.74%-13.96%)	12.21% (7.74%-13.96%)	12.21% (7.74%-13.96%)	12.21% (7.74%-13.96%)
Greenland	0.30% (0.05%-0.74%)	0.25% (0.02%-0.92%)	0.20% (0.02%-0.89%)	44.45% (12.54%-98.46%)	0.25% (0.00%-1.35%)	13.85% (5.79%-29.15%)	0.00% (0.00%-0.83%)	1.71% (0.12%-3.03%)	4.38% (2.15%-5.92%)	1.58% (0.04%-6.22%)	2.31% (0.81%-3.58%)	1.19% (0.14%-2.84%)	3.83% (2.62%-6.00%)	7.56% (4.90%-10.20%)
Grenada	0.43% (0.01%-1.62%)	0.29% (0.02%-1.54%)	0.56% (0.09%-2.10%)	22.45% (9.23%-58.04%)	0.31% (0.06%-2.36%)	14.07% (5.79%-31.39%)	0.02% (0.01%-0.84%)	18.30% (6.45%--26.60%)	22.30% (10.88%-32.63%)	1.64% (0.06%-6.04%)	18.25% (5.15%-30.67%)	21.09% (6.98%-29.90%)	14.01% (3.90%-25.19%)	26.64% (15.36%-34.54%)
Guatemala	0.38% (0.02%-1.65%)	0.32% (0.01%-1.59%)	0.53% (0.06%-2.16%)	29.81% (11.79%-58.50%)	0.27% (0.01%-2.45%)	14.00% (5.81%-31.41%)	0.00% (0.00%-0.83%)	1.19% (0.05%-3.95%)	5.95% (3.19%-7.07%)	1.41% (0.02%-6.43%)	2.33% (0.50%-4.31%)	2.81% (0.12%-4.22%)	2.55% (0.26%-3.77%)	9.01% (6.36%-11.27%)
Guinea	0.49% (0.00%-1.02%)	0.68% (0.08%-2.09%)	0.74% (0.06%-2.66%)	15.96% (6.03%-64.26%)	0.35% (0.01%-2.32%)	14.14% (5.86%-31.39%)	0.01% (0.00%-0.83%)	3.84% (0.27%--9.00%)	9.28% (5.91%-11.94%)	1.42% (0.02%-6.40%)	3.80% (1.22%-6.68%)	5.91% (2.12%-8.26%)	0.99% (0.05%-3.32%)	12.45% (8.22%-17.23%)
Guinea-	0.57%	0.52%	0.92%	27.79%	0.76%	12.93%	0.00%	4.88%	5.87%	3.13%	2.73%	4.14%	5.05%	8.19%

Country	Final cons.	House. cons.	Gov cons.	GCF	Exp	Imp	GDP	Agri...	Min. Manu., Util.	Manu.	Constr	Wholesale, Retail,...	Transp. Commun.	Other
Bissau	(0.03% - 3.23%)	(0.05% - 3.33%)	(0.10% - 2.69%)	(6.22% - 80.62%)	(0.02% - 6.16%)	(5.63% - 32.09%)	(0.00% - 0.83%)	(0.71% - 16.09%)	(0.18% - 12.38%)	(0.75% - 5.11%)	(0.55% - 11.83%)	(0.62% - 12.67%)	(0.94% - 16.18%)	(0.13% - 17.56%)
Guyana	0.38% (0.01% - 1.31%)	0.45% (0.03% - 1.22%)	0.24% (0.08% - 1.79%)	57.02% (2.31% - 96.51%)	0.19% (0.00% - 1.74%)	13.62% (5.72% - 30.19%)	0.01% (0.00% - 0.83%)	4.23% (1.73% - 9.64%)	9.55% (6.32% - 12.58%)	1.44% (0.03% - 6.33%)	4.44% (3.06% - 7.57%)	5.95% (4.39% - 8.70%)	2.57% (0.11% - 3.96%)	12.34% (10.27% - 17.62%)
Haiti	0.49% (0.06% - 5.90%)	0.67% (0.04% - 6.46%)	0.46% (0.02% - 6.15%)	55.61% (6.43% - 99.98%)	0.32% (0.01% - 13.25%)	12.87% (5.85% - 21.69%)	0.00% (0.00% - 0.82%)	2.04% (0.08% - 7.74%)	5.08% (0.88% - 14.05%)	1.52% (0.10% - 5.22%)	3.68% (0.19% - 11.57%)	3.17% (0.19% - 10.77%)	3.97% (0.03% - 8.38%)	9.38% (2.25% - 16.40%)
Honduras	0.38% (0.03% - 1.67%)	0.26% (0.01% - 1.44%)	0.46% (0.02% - 2.02%)	38.73% (12.32% - 64.10%)	0.29% (0.00% - 2.33%)	13.91% (5.80% - 31.43%)	0.00% (0.00% - 0.82%)	3.26% (0.64% - 5.34%)	6.57% (0.69% - 11.39%)	1.43% (0.03% - 6.32%)	5.32% (0.30% - 9.41%)	4.81% (0.12% - 8.64%)	3.22% (0.29% - 7.68%)	10.69% (2.39% - 13.34%)
Hungary	0.22% (0.00% - 0.95%)	0.22% (0.00% - 0.95%)	0.22% (0.00% - 0.95%)	0.22% (0.00% - 0.95%)	0.22% (0.00% - 0.95%)	0.22% (0.00% - 0.95%)	0.00% (0.00% - 0.00%)	16.21% (13.23% - 17.70%)	16.21% (13.23% - 17.70%)	16.21% (13.23% - 17.70%)	16.21% (13.23% - 17.70%)	16.21% (13.23% - 17.70%)	16.21% (13.23% - 17.70%)	16.21% (13.23% - 17.70%)
Iceland	0.30% (0.01% - 1.43%)	0.28% (0.01% - 1.68%)	0.42% (0.00% - 2.25%)	38.52% (10.66% - 67.62%)	0.36% (0.03% - 2.32%)	14.01% (5.82% - 31.32%)	0.02% (0.01% - 0.84%)	17.68% (11.45% - 26.63%)	21.41% (17.38% - 33.51%)	1.41% (0.02% - 6.43%)	14.15% (9.17% - 31.47%)	17.49% (11.38% - 30.40%)	13.09% (8.77% - 26.47%)	24.71% (19.97% - 34.59%)
India	1.80% (0.19% - 4.28%)	1.80% (0.18% - 4.28%)	1.80% (0.18% - 4.28%)	1.80% (0.19% - 4.28%)	1.80% (0.19% - 4.28%)	1.80% (0.19% - 4.28%)	0.00% (0.00% - 0.00%)	6.92% (4.61% - 7.83%)	6.92% (4.61% - 7.83%)	6.92% (4.61% - 7.83%)	6.92% (4.61% - 7.83%)	6.92% (4.61% - 7.83%)	6.92% (4.61% - 7.83%)	6.92% (4.61% - 7.83%)
Indonesia	1.92% (0.00% - 5.33%)	1.97% (0.01% - 5.33%)	1.97% (0.01% - 5.33%)	1.92% (0.00% - 5.33%)	1.92% (0.00% - 5.33%)	1.92% (0.00% - 5.33%)	0.00% (0.00% - 0.00%)	0.09% (0.00% - 0.57%)	0.09% (0.00% - 0.57%)	0.09% (0.00% - 0.57%)	0.09% (0.00% - 0.57%)	0.09% (0.00% - 0.57%)	0.09% (0.00% - 0.57%)	0.09% (0.00% - 0.57%)
Iran (Islamic Republic of)	0.27% (0.00% - 2.10%)	0.70% (0.06% - 3.32%)	0.90% (0.13% - 3.89%)	14.20% (2.26% - 19.99%)	0.35% (0.03% - 2.81%)	14.17% (5.76% - 31.80%)	0.01% (0.00% - 0.82%)	3.92% (2.67% - 6.21%)	0.86% (0.05% - 3.42%)	1.41% (0.02% - 6.44%)	4.15% (0.24% - 9.13%)	2.33% (0.43% - 5.77%)	6.93% (5.39% - 9.61%)	3.51% (1.24% - 8.15%)
Iraq	0.31% (0.01% - 3.46%)	0.25% (0.04% - 3.53%)	0.20% (0.01% - 3.23%)	37.87% (13.18% - 99.99%)	0.30% (0.06% - 7.91%)	13.36% (5.74% - 27.63%)	0.03% (0.00% - 0.80%)	34.19% (25.27% - 40.72%)	29.42% (18.91% - 35.22%)	1.41% (0.02% - 6.44%)	34.23% (25.98% - 37.99%)	33.08% (25.36% - 38.28%)	36.86% (27.79% - 43.74%)	25.67% (15.84% - 32.12%)
Ireland	0.96% (0.02% - 1.91%)	0.91% (0.00% - 1.70%)	0.91% (0.00% - 1.70%)	0.96% (0.02% - 1.91%)	0.96% (0.02% - 1.91%)	0.96% (0.02% - 1.91%)	0.00% (0.00% - 0.00%)	9.05% (0.56% - 16.95%)	9.05% (0.56% - 18.64%)	9.05% (0.56% - 16.95%)	9.05% (0.56% - 16.95%)	9.05% (0.56% - 16.95%)	9.05% (0.56% - 16.95%)	9.05% (0.56% - 16.95%)
Israel	0.43% (0.04% - 1.71%)	0.25% (0.01% - 1.51%)	0.47% (0.03% - 2.08%)	32.93% (13.11% - 57.52%)	0.29% (0.02% - 2.43%)	13.97% (5.79% - 31.42%)	0.00% (0.00% - 0.83%)	4.29% (2.44% - 7.42%)	10.12% (1.96% - 13.15%)	1.41% (0.02% - 6.43%)	3.74% (1.18% - 11.19%)	5.90% (1.91% - 10.42%)	1.72% (0.04% - 5.97%)	12.60% (10.04% - 15.05%)
Italy	0.03% (0.00% - 0.10%)	0.03% (0.00% - 0.10%)	0.03% (0.00% - 0.10%)	0.03% (0.00% - 0.10%)	0.03% (0.00% - 0.10%)	0.03% (0.00% - 0.10%)	0.00% (0.00% - 0.00%)	11.17% (10.53% - 11.65%)	11.17% (10.53% - 11.65%)	11.17% (10.53% - 11.65%)	11.17% (10.53% - 11.65%)	11.17% (10.53% - 11.65%)	11.17% (10.53% - 11.65%)	11.17% (10.53% - 11.65%)
Jamaica	0.35% (0.02% - 1.55%)	0.29% (0.00% - 1.48%)	0.53% (0.07% - 2.05%)	28.56% (13.98% - 73.11%)	0.23% (0.01% - 2.24%)	14.02% (5.78% - 31.34%)	0.01% (0.00% - 0.83%)	4.62% (1.93% - 8.35%)	10.13% (8.07% - 11.52%)	1.41% (0.02% - 6.42%)	4.37% (2.78% - 8.21%)	6.86% (4.44% - 7.83%)	2.05% (0.23% - 3.15%)	13.33% (9.89% - 17.09%)
Japan	0.12% (0.00% - 1.30%)	0.12% (0.00% - 0.75%)	0.12% (0.00% - 0.75%)	0.12% (0.00% - 1.30%)	0.12% (0.00% - 1.30%)	0.12% (0.00% - 1.30%)	0.00% (0.00% - 0.00%)	1.33% (0.30% - 2.07%)	1.33% (0.30% - 2.07%)	1.33% (0.30% - 2.07%)	1.33% (0.30% - 2.07%)	1.33% (0.30% - 2.07%)	1.33% (0.30% - 2.07%)	1.33% (0.30% - 2.07%)

Country	Final cons.	House. cons.	Gov cons.	GCF	Exp	Imp	GDP	Agri...	Min. Manu., Util.	Manu.	Constr	Wholesale, Retail,...	Transp. Commun.	Other
Jordan	0.40% (0.02% - 1.68%)	0.33% (0.04% - 1.31%)	0.41% (0.01% - 1.88%)	44.13% (13.00% - 92.96%)	0.22% (0.01% - 2.20%)	13.95% (5.78% - 31.06%)	0.01% (0.00% - 0.83%)	5.87% (3.14% - 7.68%)	10.19% (7.40% - 13.72%)	1.42% (0.02% - 6.43%)	4.25% (0.87% - 11.68%)	6.36% (3.08% - 10.60%)	1.88% (0.40% - 6.68%)	13.67% (11.22% - 15.80%)
Kazakhstan	0.51% (0.01% - 2.40%)	0.45% (0.00% - 2.04%)	0.21% (0.01% - 1.75%)	32.63% (1.59% - 100.00%)	0.36% (0.06% - 4.87%)	13.98% (5.94% - 29.99%)	0.00% (0.00% - 0.83%)	1.98% (0.11% - 3.02%)	5.46% (2.53% - 8.68%)	1.41% (0.02% - 6.44%)	3.43% (0.41% - 6.73%)	3.14% (0.54% - 5.96%)	2.89% (0.07% - 5.35%)	9.48% (4.94% - 11.53%)
Kenya	0.37% (0.01% - 1.29%)	0.45% (0.02% - 1.82%)	0.52% (0.00% - 2.39%)	28.53% (0.30% - 81.27%)	0.32% (0.02% - 2.33%)	14.30% (5.74% - 31.18%)	0.01% (0.01% - 0.84%)	5.92% (5.25% - 11.43%)	11.88% (9.66% - 15.88%)	1.42% (0.02% - 6.43%)	8.50% (4.86% - 10.33%)	8.94% (8.29% - 10.33%)	4.48% (1.36% - 7.24%)	15.30% (13.44% - 22.28%)
Kiribati	0.35% (0.02% - 1.31%)	0.27% (0.02% - 1.21%)	0.40% (0.02% - 1.58%)	27.28% (12.96% - 61.47%)	0.92% (0.06% - 2.15%)	13.95% (5.61% - 30.82%)	0.00% (0.00% - 0.83%)	1.61% (0.17% - 4.07%)	12.71% (4.90% - 15.59%)	4.74% (0.33% - 11.80%)	4.27% (1.31% - 7.57%)	2.91% (1.14% - 6.53%)	4.29% (0.44% - 7.88%)	8.16% (2.96% - 13.11%)
Kosovo	0.33% (0.01% - 1.47%)	0.36% (0.01% - 1.33%)	0.45% (0.04% - 1.90%)	40.37% (11.87% - 93.48%)	0.26% (0.00% - 2.02%)	13.90% (5.80% - 31.00%)	0.02% (0.00% - 0.84%)	12.37% (2.55% - 18.28%)	17.01% (3.10% - 22.09%)	1.42% (0.03% - 6.31%)	10.09% (0.67% - 15.28%)	12.79% (0.13% - 18.70%)	9.13% (1.34% - 13.67%)	20.20% (4.07% - 25.40%)
Kuwait	0.33% (0.02% - 1.74%)	0.36% (0.01% - 2.46%)	0.31% (0.03% - 3.04%)	9.38% (0.56% - 49.60%)	0.45% (0.01% - 3.13%)	14.24% (5.93% - 32.08%)	0.01% (0.00% - 0.82%)	8.82% (6.47% - 13.96%)	4.26% (1.15% - 7.09%)	1.41% (0.02% - 6.44%)	9.03% (6.65% - 12.44%)	8.13% (5.30% - 10.23%)	12.84% (10.03% - 15.04%)	1.82% (0.27% - 6.01%)
Kyrgyzstan	0.42% (0.04% - 2.12%)	0.28% (0.00% - 0.90%)	0.25% (0.01% - 1.24%)	41.01% (20.55% - 96.39%)	0.33% (0.02% - 1.95%)	13.78% (5.71% - 31.35%)	0.01% (0.01% - 0.83%)	7.20% (5.53% - 18.49%)	12.28% (10.47% - 25.39%)	1.47% (0.03% - 6.36%)	5.65% (3.26% - 23.30%)	8.96% (5.03% - 22.24%)	3.57% (2.18% - 18.32%)	16.06% (12.40% - 26.43%)
Lao People's Democratic Republic	0.34% (0.01% - 1.50%)	0.36% (0.06% - 1.86%)	0.70% (0.06% - 2.43%)	9.49% (0.05% - 54.01%)	0.49% (0.10% - 2.58%)	14.27% (6.02% - 31.55%)	0.01% (0.00% - 0.83%)	4.96% (0.26% - 6.57%)	8.19% (4.13% - 13.01%)	1.48% (0.03% - 6.41%)	2.53% (0.04% - 10.94%)	6.18% (0.11% - 9.87%)	2.36% (0.07% - 5.94%)	12.94% (7.27% - 15.79%)
Latvia	0.61% (0.00% - 1.55%)	1.06% (0.00% - 2.46%)	1.06% (0.00% - 2.46%)	0.61% (0.00% - 1.55%)	0.61% (0.00% - 1.55%)	0.61% (0.00% - 1.55%)	0.00% (0.00% - 0.00%)	12.98% (9.24% - 14.49%)	12.98% (9.24% - 14.49%)	12.98% (9.24% - 14.49%)	12.98% (9.24% - 14.49%)	12.98% (9.24% - 14.49%)	12.98% (9.24% - 14.49%)	12.98% (9.24% - 14.49%)
Lebanon	0.44% (0.03% - 1.71%)	0.27% (0.02% - 1.83%)	0.35% (0.08% - 2.40%)	28.62% (7.44% - 53.01%)	0.30% (0.00% - 2.54%)	14.02% (5.78% - 31.47%)	0.01% (0.00% - 0.82%)	5.26% (0.53% - 8.17%)	7.77% (4.75% - 17.24%)	2.02% (0.69% - 4.10%)	5.38% (2.30% - 7.53%)	3.66% (2.69% - 5.33%)	8.22% (0.38% - 10.41%)	3.28% (0.24% - 9.86%)
Lesotho	0.38% (0.03% - 1.54%)	0.42% (0.06% - 1.33%)	0.37% (0.00% - 1.88%)	55.34% (23.35% - 85.39%)	0.37% (0.04% - 2.06%)	13.74% (5.67% - 31.25%)	0.01% (0.00% - 0.83%)	4.14% (1.24% - 6.26%)	8.78% (5.23% - 13.12%)	1.54% (0.03% - 6.37%)	2.15% (0.03% - 11.01%)	4.12% (2.25% - 9.92%)	1.13% (0.04% - 6.21%)	11.22% (9.83% - 14.92%)
Liberia	0.40% (0.05% - 1.41%)	0.37% (0.02% - 1.35%)	0.45% (0.07% - 1.69%)	50.88% (22.41% - 79.75%)	0.35% (0.04% - 2.23%)	13.36% (5.61% - 31.08%)	0.01% (0.00% - 0.83%)	3.65% (0.47% - 10.46%)	8.09% (2.12% - 14.39%)	3.69% (0.30% - 12.15%)	1.68% (0.47% - 5.64%)	2.67% (0.18% - 8.87%)	4.27% (0.47% - 6.89%)	9.06% (1.51% - 18.81%)
Libya	0.41% (0.02% - 2.61%)	0.30% (0.09% - 2.19%)	0.33% (0.01% - 2.76%)	22.41% (3.46% - 99.87%)	0.55% (0.02% - 2.94%)	14.16% (5.83% - 32.03%)	0.02% (0.00% - 0.81%)	15.00% (5.86% - 21.23%)	10.06% (1.47% - 14.36%)	1.41% (0.02% - 6.44%)	15.28% (7.17% - 18.85%)	13.88% (5.34% - 17.47%)	18.58% (8.43% - 21.66%)	6.95% (3.91% - 13.28%)
Liechtenstein	0.41% (0.02% - 1.70%)	0.31% (0.00% - 1.60%)	0.54% (0.07% - 2.18%)	25.51% (12.49% - 53.54%)	0.29% (0.00% - 2.52%)	14.05% (5.79% - 31.46%)	0.01% (0.01% - 0.82%)	7.97% (5.10% - 11.57%)	2.18% (0.45% - 5.98%)	1.51% (0.06% - 5.51%)	8.97% (2.60% - 13.85%)	6.19% (2.99% - 11.64%)	11.19% (8.19% - 14.32%)	0.88% (0.01% - 3.53%)
Lithuania	0.46% (0.00% - 1.75%)	0.46% (0.00% - 1.75%)	0.46% (0.00% - 1.75%)	0.46% (0.00% - 1.75%)	0.46% (0.00% - 1.75%)	0.46% (0.00% - 1.75%)	0.00% (0.00% - 0.00%)	10.32% (8.57% - 10.69%)	10.32% (8.57% - 10.69%)	10.32% (8.57% - 10.69%)	10.32% (8.57% - 10.69%)	10.32% (8.57% - 10.69%)	10.32% (8.57% - 10.69%)	10.32% (8.57% - 10.69%)

Country	Final cons.	House. cons.	Gov cons.	GCF	Exp	Imp	GDP	Agri...	Min. Manu., Util.	Manu.	Constr	Wholesale, Retail,...	Transp. Commun.	Other
Luxembourg	0.14% (0.00% - 0.59%)	0.14% (0.00% - 0.59%)	0.14% (0.00% - 0.59%)	0.14% (0.00% - 0.59%)	0.14% (0.00% - 0.59%)	0.14% (0.00% - 0.59%)	0.00% (0.00% - 0.00%)	11.15% (9.43% - 12.12%)	11.15% (9.43% - 12.12%)	11.15% (9.43% - 12.12%)	11.15% (9.43% - 12.12%)	11.15% (9.43% - 12.12%)	11.15% (9.43% - 12.12%)	11.15% (9.43% - 12.12%)
Madagascar	0.46% (0.05% - 1.67%)	0.40% (0.05% - 1.61%)	0.42% (0.01% - 2.19%)	27.75% (5.54% - 54.64%)	0.31% (0.01% - 2.50%)	13.78% (5.87% - 31.45%)	0.01% (0.01% - 0.83%)	6.71% (4.45% - 9.07%)	11.51% (9.18% - 13.15%)	1.46% (0.03% - 6.33%)	5.99% (3.34% - 9.40%)	7.94% (5.72% - 9.69%)	3.33% (0.84% - 5.98%)	14.15% (12.54% - 21.02%)
Malawi	0.27% (0.03% - 1.58%)	0.37% (0.04% - 1.96%)	0.48% (0.06% - 2.53%)	22.04% (5.15% - 87.79%)	0.36% (0.01% - 2.76%)	14.46% (5.87% - 30.97%)	0.00% (0.00% - 0.83%)	0.92% (0.10% - 6.43%)	6.05% (0.01% - 9.37%)	1.51% (0.05% - 6.37%)	1.96% (0.02% - 7.25%)	2.26% (0.19% - 6.18%)	2.47% (0.13% - 8.33%)	8.68% (5.56% - 12.57%)
Malaysia	0.39% (0.02% - 1.58%)	0.33% (0.05% - 1.47%)	0.42% (0.01% - 2.04%)	47.74% (22.98% - 85.79%)	0.19% (0.01% - 2.27%)	13.82% (5.69% - 31.30%)	0.00% (0.00% - 0.82%)	3.68% (0.68% - 6.18%)	2.07% (0.02% - 3.10%)	1.41% (0.02% - 6.44%)	4.33% (0.21% - 6.20%)	2.08% (0.01% - 4.35%)	6.51% (3.66% - 8.54%)	4.41% (2.39% - 8.76%)
Maldives	0.26% (0.09% - 1.36%)	1.13% (0.03% - 3.27%)	0.63% (0.07% - 2.71%)	61.18% (12.53% - 99.55%)	0.38% (0.02% - 3.83%)	13.87% (5.63% - 26.80%)	0.01% (0.00% - 0.82%)	9.18% (2.53% - 13.56%)	2.71% (0.07% - 5.51%)	3.45% (0.26% - 6.11%)	8.15% (6.09% - 10.05%)	6.71% (4.05% - 10.53%)	12.53% (7.12% - 14.22%)	1.86% (0.08% - 5.43%)
Mali	0.26% (0.07% - 1.53%)	0.43% (0.00% - 1.64%)	0.51% (0.07% - 2.21%)	22.53% (4.13% - 67.02%)	0.47% (0.03% - 2.38%)	14.08% (5.88% - 31.42%)	0.01% (0.00% - 0.83%)	4.04% (2.14% - 7.32%)	9.70% (7.50% - 12.56%)	1.45% (0.02% - 6.41%)	3.78% (0.54% - 10.09%)	5.96% (3.33% - 9.30%)	1.38% (0.05% - 6.22%)	12.39% (10.68% - 16.97%)
Malta	0.24% (0.00% - 1.07%)	0.25% (0.00% - 1.10%)	0.25% (0.00% - 1.10%)	0.24% (0.00% - 1.07%)	0.24% (0.00% - 1.07%)	0.24% (0.00% - 1.07%)	0.00% (0.00% - 0.00%)	14.54% (10.76% - 16.55%)	14.54% (10.76% - 16.55%)	14.54% (10.76% - 16.55%)	14.54% (10.76% - 16.55%)	14.54% (10.76% - 16.55%)	14.54% (10.76% - 16.55%)	14.54% (10.76% - 16.55%)
Marshall Islands	0.35% (0.02% - 1.47%)	0.26% (0.00% - 1.33%)	0.38% (0.03% - 1.82%)	28.93% (11.73% - 67.03%)	0.79% (0.05% - 2.27%)	13.98% (5.69% - 31.14%)	0.00% (0.00% - 0.83%)	1.09% (0.07% - 4.54%)	10.99% (5.08% - 18.47%)	3.05% (0.31% - 11.16%)	2.59% (0.61% - 6.39%)	1.73% (0.01% - 6.14%)	2.62% (0.18% - 7.44%)	8.27% (6.04% - 11.39%)
Mauritania	0.57% (0.00% - 1.83%)	0.36% (0.02% - 1.44%)	0.57% (0.01% - 2.01%)	11.12% (0.27% - 44.85%)	0.58% (0.04% - 2.47%)	14.14% (5.94% - 31.61%)	0.00% (0.00% - 0.83%)	2.19% (0.20% - 9.19%)	7.09% (2.92% - 9.26%)	1.42% (0.02% - 6.39%)	1.77% (0.09% - 7.03%)	3.73% (0.19% - 6.60%)	1.34% (0.05% - 9.20%)	10.33% (0.53% - 14.36%)
Mauritius	0.36% (0.01% - 1.48%)	0.26% (0.04% - 1.39%)	0.41% (0.06% - 1.96%)	27.04% (10.79% - 84.48%)	0.26% (0.06% - 2.09%)	14.03% (5.82% - 31.23%)	0.01% (0.01% - 0.84%)	11.24% (7.82% - 13.87%)	15.43% (12.22% - 20.13%)	1.43% (0.03% - 6.38%)	9.38% (6.20% - 17.99%)	12.80% (8.30% - 17.17%)	6.66% (5.25% - 13.81%)	19.80% (15.69% - 22.52%)
Mexico	0.16% (0.00% - 2.50%)	0.15% (0.00% - 2.46%)	0.15% (0.00% - 2.46%)	0.16% (0.00% - 2.50%)	0.16% (0.00% - 2.50%)	0.16% (0.00% - 2.50%)	0.00% (0.00% - 0.00%)	2.47% (1.09% - 3.44%)	2.47% (1.09% - 3.44%)	2.47% (1.09% - 3.44%)	2.47% (1.09% - 3.44%)	2.47% (1.09% - 3.44%)	2.47% (1.09% - 3.44%)	2.47% (1.09% - 3.44%)
Micronesia (Federated States of)	7.74% (6.41% - 8.51%)	8.47% (8.14% - 9.56%)	8.51% (7.91% - 10.11%)	15.06% (1.60% - 53.10%)	0.65% (0.20% - 2.46%)	14.25% (6.03% - 31.39%)	0.00% (0.00% - 0.83%)	1.80% (0.11% - 6.09%)	8.30% (4.30% - 12.60%)	2.89% (0.50% - 12.07%)	1.40% (0.14% - 5.52%)	3.23% (1.09% - 5.38%)	0.89% (0.04% - 4.75%)	9.96% (8.34% - 13.11%)
Monaco	0.47% (0.01% - 1.72%)	0.29% (0.02% - 1.55%)	0.50% (0.05% - 2.12%)	20.79% (8.13% - 53.75%)	0.35% (0.01% - 2.49%)	14.09% (5.84% - 31.46%)	0.00% (0.00% - 0.82%)	0.00% (0.00% - 0.00%)	2.58% (0.64% - 6.72%)	2.00% (0.62% - 4.25%)	4.55% (0.53% - 6.57%)	2.13% (1.46% - 4.64%)	6.96% (5.27% - 9.15%)	4.21% (2.58% - 7.31%)
Mongolia	0.45% (0.03% - 1.63%)	0.33% (0.02% - 1.58%)	0.55% (0.07% - 2.13%)	24.26% (4.69% - 56.41%)	0.31% (0.02% - 2.39%)	14.06% (5.83% - 31.59%)	0.01% (0.00% - 0.84%)	8.47% (0.32% - 12.22%)	12.46% (3.54% - 18.26%)	1.42% (0.02% - 6.41%)	6.86% (1.50% - 11.12%)	9.74% (0.40% - 11.80%)	4.17% (0.28% - 9.38%)	17.12% (4.60% - 22.65%)
Montenegro	0.61% (0.01% -	1.45% (0.16% -	1.26% (0.22% -	11.42% (0.98% - 75.22%)	0.48% (0.01% -	13.51% (6.01% -	0.02% (0.00% -	9.04% (0.33% -	12.99% (3.31% - 23.42%)	1.46% (0.03% - 6.36%)	8.17% (0.53% -	11.89% (0.24% - 17.55%)	5.22% (0.49% - 14.75%)	18.59% (6.41% -

Country	Final cons.	House. cons.	Gov cons.	GCF	Exp	Imp	GDP	Agri...	Min. Manu., Util.	Manu.	Constr	Wholesale, Retail,...	Transp. Commun.	Other
	1.64%)	2.32%)	2.89%)		2.84%)	31.88%)	0.84%)	19.06%)			15.14%)			27.36%)
Montserrat	0.32% (0.01% - 1.27%)	0.31% (0.13% - 1.09%)	0.46% (0.14% - 1.41%)	28.29% (17.41% - 68.44%)	0.24% (0.03% - 1.28%)	13.88% (5.05% - 30.60%)	0.01% (0.01% - 0.84%)	10.63% (1.63% - 21.21%)	15.49% (0.96% - 29.98%)	2.16% (0.03% - 6.07%)	6.01% (2.31% - 17.96%)	9.02% (1.53% - 16.98%)	4.90% (1.19% - 11.22%)	16.26% (0.16% - 22.27%)
Morocco	0.38% (0.03% - 1.63%)	0.39% (0.02% - 1.55%)	0.57% (0.03% - 2.12%)	15.39% (8.23% - 58.05%)	0.35% (0.00% - 2.40%)	14.15% (5.84% - 31.48%)	0.00% (0.00% - 0.83%)	1.58% (0.44% - 4.61%)	7.39% (4.68% - 7.78%)	1.41% (0.02% - 6.44%)	1.07% (0.03% - 5.71%)	3.99% (0.03% - 5.32%)	1.28% (0.10% - 2.41%)	9.94% (7.08% - 12.92%)
Mozambique	0.47% (0.01% - 1.65%)	0.27% (0.01% - 1.38%)	0.49% (0.05% - 1.95%)	29.74% (12.38% - 70.08%)	0.28% (0.02% - 2.25%)	13.95% (5.80% - 31.32%)	0.01% (0.00% - 0.83%)	5.35% (2.00% - 6.77%)	9.89% (4.40% - 11.81%)	1.56% (0.02% - 6.42%)	2.97% (0.63% - 9.68%)	7.07% (1.03% - 9.23%)	1.22% (0.42% - 4.69%)	12.80% (6.66% - 16.06%)
Myanmar	0.58% (0.09% - 10.56%)	0.67% (0.07% - 10.48%)	0.40% (0.01% - 11.05%)	9.51% (0.22% - 89.93%)	1.05% (0.26% - 16.62%)	14.11% (5.46% - 46.28%)	0.00% (0.00% - 0.83%)	0.85% (0.01% - 1.94%)	4.68% (3.57% - 7.58%)	1.58% (0.04% - 6.18%)	3.83% (0.26% - 5.21%)	2.54% (0.33% - 4.80%)	4.22% (0.55% - 5.16%)	8.07% (4.72% - 11.62%)
Namibia	0.28% (0.08% - 1.39%)	0.29% (0.03% - 1.55%)	0.41% (0.05% - 2.12%)	45.27% (9.46% - 98.08%)	0.36% (0.01% - 2.15%)	13.95% (5.58% - 30.56%)	0.00% (0.00% - 0.83%)	1.86% (0.42% - 5.71%)	6.90% (4.61% - 9.67%)	1.42% (0.02% - 6.43%)	2.29% (0.08% - 5.33%)	3.78% (1.49% - 5.69%)	0.75% (0.02% - 3.68%)	10.21% (7.12% - 14.33%)
Nauru	0.27% (0.00% - 1.01%)	0.36% (0.01% - 0.92%)	0.25% (0.03% - 1.37%)	24.36% (11.57% - 58.90%)	0.93% (0.17% - 4.20%)	13.42% (5.02% - 30.11%)	0.01% (0.00% - 0.83%)	7.48% (3.06% - 15.72%)	127.59% (0.13% - 1561.65%)	15.37% (3.24% - 100.00%)	6.57% (2.72% - 21.04%)	5.25% (2.97% - 14.53%)	10.87% (7.22% - 100.00%)	2.13% (0.12% - 8.26%)
Nepal	0.25% (0.00% - 1.65%)	0.22% (0.02% - 1.61%)	0.47% (0.09% - 2.18%)	22.27% (4.31% - 73.24%)	0.39% (0.04% - 2.48%)	14.08% (5.85% - 31.43%)	0.00% (0.00% - 0.83%)	1.43% (0.04% - 3.59%)	6.27% (5.12% - 7.95%)	1.45% (0.03% - 6.40%)	2.24% (0.12% - 5.04%)	3.52% (0.41% - 4.63%)	2.20% (0.04% - 3.20%)	9.00% (7.90% - 13.90%)
Netherlands	0.05% (0.00% - 0.38%)	0.05% (0.00% - 0.38%)	0.05% (0.00% - 0.38%)	0.05% (0.00% - 0.38%)	0.05% (0.00% - 0.38%)	0.05% (0.00% - 0.38%)	0.00% (0.00% - 0.00%)	12.38% (10.83% - 12.82%)	12.38% (10.83% - 12.82%)	12.38% (10.83% - 12.82%)	12.38% (10.83% - 12.82%)	12.38% (10.83% - 12.82%)	12.38% (10.83% - 12.82%)	12.38% (10.83% - 12.82%)
Netherlands Antilles	0.31% (0.01% - 1.19%)	0.27% (0.02% - 1.06%)	0.30% (0.01% - 1.44%)	35.87% (16.56% - 99.65%)	0.24% (0.02% - 1.23%)	13.94% (5.75% - 30.63%)	0.00% (0.00% - 0.83%)	1.65% (0.01% - 5.82%)	6.43% (4.78% - 9.87%)	1.44% (0.03% - 6.34%)	2.17% (0.07% - 5.11%)	3.41% (1.53% - 4.65%)	1.27% (0.15% - 2.73%)	10.41% (6.04% - 13.85%)
New Caledonia	0.44% (0.01% - 1.66%)	0.25% (0.02% - 1.49%)	0.49% (0.04% - 2.06%)	20.86% (7.32% - 60.93%)	0.35% (0.01% - 2.37%)	14.09% (5.85% - 31.39%)	0.00% (0.00% - 0.83%)	3.07% (1.62% - 6.48%)	8.44% (1.41% - 10.54%)	1.48% (0.03% - 6.32%)	2.09% (0.01% - 7.14%)	4.36% (1.09% - 6.37%)	0.74% (0.02% - 5.01%)	10.96% (3.10% - 14.53%)
New Zealand	0.42% (0.01% - 1.67%)	0.35% (0.01% - 1.60%)	0.45% (0.01% - 2.18%)	19.77% (5.89% - 50.72%)	0.37% (0.02% - 2.49%)	14.10% (5.86% - 31.49%)	0.00% (0.00% - 0.83%)	2.85% (1.43% - 5.88%)	8.35% (5.82% - 10.72%)	1.41% (0.02% - 6.44%)	3.00% (0.01% - 7.25%)	5.13% (1.42% - 6.86%)	1.14% (0.12% - 1.92%)	11.37% (9.42% - 13.90%)
Nicaragua	0.38% (0.02% - 1.58%)	0.51% (0.06% - 1.95%)	0.44% (0.01% - 2.52%)	34.59% (14.40% - 47.04%)	0.27% (0.00% - 2.53%)	14.02% (5.77% - 31.53%)	0.01% (0.00% - 0.83%)	5.40% (3.23% - 7.47%)	9.73% (8.42% - 13.69%)	1.44% (0.03% - 6.39%)	3.85% (0.95% - 11.48%)	7.57% (2.61% - 11.03%)	1.34% (0.25% - 6.22%)	14.27% (10.00% - 16.49%)
Niger	0.35% (0.00% - 1.51%)	0.38% (0.02% - 1.69%)	0.48% (0.05% - 2.26%)	24.42% (7.85% - 53.59%)	0.35% (0.03% - 2.42%)	14.06% (5.83% - 31.49%)	0.01% (0.00% - 0.83%)	3.96% (0.09% - 6.66%)	8.24% (5.64% - 10.86%)	1.45% (0.03% - 6.36%)	3.51% (0.97% - 5.78%)	5.08% (2.39% - 7.62%)	0.93% (0.04% - 2.33%)	11.74% (8.01% - 17.37%)
Nigeria	2.15% (0.25% - 7.58%)	5.32% (0.25% - 10.40%)	6.10% (0.20% - 11.02%)	85.74% (1.41% - 89.99%)	2.66% (0.08% - 12.04%)	15.06% (7.66% - 32.88%)	0.01% (0.00% - 0.83%)	2.35% (0.17% - 6.98%)	2.20% (0.07% - 8.02%)	1.41% (0.02% - 6.44%)	2.25% (0.03% - 5.27%)	1.27% (0.03% - 3.87%)	6.39% (0.51% - 10.32%)	6.33% (0.98% - 14.53%)
Norway	0.44% (0.00%	0.44% (0.00%	0.44% (0.00%	0.44% (0.00% -	0.44% (0.00%	0.44% (0.00%	0.00% (0.00	11.04% (7.67%	11.04% (7.67% -	11.04% (7.67% -	11.04% (7.67%	11.04% (7.67%	11.04% (7.67% -	11.04% (7.67%

Country	Final cons.	House. cons.	Gov cons.	GCF	Exp	Imp	GDP	Agri...	Min. Manu., Util.	Manu.	Constr	Wholesale, Retail,...	Transp. Commun.	Other
	- 0.63%)	- 0.63%)	- 0.63%)	0.63%)	- 0.63%)	- 0.63%)	% - 0.00%)	- - 13.19%)	13.19%)	13.19%)	- 13.19%)	13.19%)	13.19%)	- 13.19%)
Occupied Palestinian Territory	0.42% (0.02% - 1.54%)	0.35% (0.02% - 1.45%)	0.43% (0.02% - 2.02%)	39.18% (15.30% - 74.15%)	0.22% (0.01% - 2.22%)	13.91% (5.77% - 31.25%)	0.02% (0.01 % - 0.84%)	11.54% (2.35% - - 19.04%)	16.97% (8.66% - 21.98%)	1.46% (0.03% - 6.40%)	10.95% (6.18% - - 17.86%)	13.01% (5.38% - 17.41%)	8.30% (1.91% - - 13.35%)	19.48% (11.01 % - 24.20%)
Oman	0.41% (0.00% - 1.56%)	0.32% (0.00% - 1.47%)	0.45% (0.00% - 1.90%)	21.39% (11.16% - - 86.13%)	0.30% (0.03% - 2.11%)	14.11% (5.80% - 31.41%)	0.01% (0.00 % - 0.82%)	6.71% (0.76% - - 10.33%)	2.76% (1.16% - 4.47%)	1.41% (0.02% - 6.44%)	5.51% (3.78% - - 9.73%)	4.62% (2.29% - 7.44%)	10.16% (5.28% - - 12.89%)	2.39% (0.00% - - 9.32%)
Pakistan	0.50% (0.01% - 1.82%)	0.45% (0.01% - 1.64%)	0.57% (0.11% - 2.21%)	11.76% (2.63% - 31.78%)	0.40% (0.01% - 2.67%)	14.18% (5.89% - 31.68%)	0.00% (0.00 % - 0.83%)	4.34% (0.51% - - 6.82%)	8.58% (5.49% - 13.08%)	1.41% (0.02% - 6.44%)	3.75% (0.29% - - 10.65%)	6.58% (0.58% - 9.85%)	0.74% (0.03% - - 6.78%)	12.71% (8.01% - - 15.48%)
Palau	0.26% (0.01% - 1.49%)	0.46% (0.04% - 1.49%)	0.33% (0.03% - 1.75%)	50.29% (16.20% - - 80.44%)	0.38% (0.00% - 2.05%)	13.27% (5.49% - 31.22%)	0.00% (0.00 % - 0.83%)	2.90% (0.54% - - 4.21%)	4.71% (0.65% - 13.83%)	5.23% (1.26% - 22.15%)	2.28% (0.05% - - 4.73%)	0.86% (0.10% - 1.92%)	5.00% (2.09% - - 8.06%)	5.74% (3.48% - - 10.19%)
Panama	0.41% (0.00% - 1.02%)	0.28% (0.01% - 1.66%)	0.29% (0.04% - 2.23%)	50.47% (12.09% - - 99.19%)	0.23% (0.02% - 1.82%)	13.80% (5.79% - 30.79%)	0.00% (0.00 % - 0.83%)	2.62% (0.18% - - 3.53%)	3.87% (1.35% - 7.49%)	1.42% (0.02% - 6.43%)	1.60% (0.09% - - 2.34%)	1.02% (0.15% - 1.90%)	3.18% (1.39% - - 6.95%)	8.03% (4.93% - - 13.64%)
Papua New Guinea	0.38% (0.01% - 2.76%)	0.83% (0.11% - 3.15%)	1.04% (0.07% - 3.04%)	44.09% (1.08% - 98.87%)	0.34% (0.04% - 1.74%)	13.86% (5.91% - 31.15%)	0.00% (0.00 % - 0.83%)	2.86% (0.28% - - 5.57%)	4.30% (0.69% - 9.74%)	1.41% (0.02% - 6.42%)	1.38% (0.10% - - 4.04%)	1.72% (0.19% - 5.87%)	4.15% (0.30% - - 7.42%)	8.19% (2.42% - - 17.82%)
Paraguay	0.34% (0.02% - 1.38%)	0.36% (0.02% - 1.55%)	0.34% (0.05% - 2.12%)	29.61% (16.68% - - 88.21%)	0.26% (0.05% - 2.06%)	14.01% (5.76% - 31.23%)	0.01% (0.01 % - 0.83%)	6.34% (5.21% - - 9.18%)	11.71% (10.20% - - 13.01%)	1.43% (0.03% - 6.39%)	5.90% (3.93% - - 10.06%)	8.70% (5.24% - 9.50%)	3.39% (1.88% - - 6.03%)	14.39% (12.62 % - - 18.81%)
Peru	0.44% (0.02% - 1.79%)	0.40% (0.01% - 1.58%)	0.47% (0.07% - 2.16%)	18.68% (7.70% - 38.96%)	0.35% (0.02% - 2.59%)	14.11% (5.85% - 31.61%)	0.01% (0.00 % - 0.83%)	5.03% (4.32% - - 8.40%)	10.94% (8.92% - 11.42%)	1.41% (0.02% - 6.44%)	4.38% (2.69% - - 9.17%)	7.53% (4.28% - 8.31%)	2.30% (0.69% - - 4.61%)	13.49% (11.67 % - - 17.00%)
Philippines	0.37% (0.00% - 1.74%)	0.30% (0.05% - 1.43%)	0.51% (0.04% - 2.00%)	30.81% (17.59% - - 64.56%)	0.25% (0.03% - 2.38%)	13.99% (5.72% - 31.42%)	0.00% (0.00 % - 0.82%)	4.27% (1.38% - - 5.38%)	1.30% (0.03% - 2.25%)	1.41% (0.02% - 6.44%)	4.90% (0.22% - - 6.98%)	1.88% (0.86% - 5.07%)	7.44% (4.26% - - 8.61%)	3.82% (2.32% - - 7.30%)
Poland	0.09% (0.00% - 0.63%)	0.09% (0.00% - 0.63%)	0.09% (0.00% - 0.63%)	0.09% (0.00% - 0.63%)	0.09% (0.00% - - 0.63%)	0.09% (0.00% - - 0.63%)	0.00% (0.00 % - 0.00%)	12.88% (8.13% - - 13.94%)	12.88% (8.13% - 13.94%)	12.88% (8.13% - - 13.94%)	12.88% (8.13% - - 13.94%)	12.88% (8.13% - - 13.94%)	12.88% (8.13% - - 13.94%)	12.88% (8.13% - - 13.94%)
Portugal	0.11% (0.00% - 0.38%)	0.10% (0.00% - 0.39%)	0.10% (0.00% - 0.39%)	0.11% (0.00% - 0.38%)	0.11% (0.00% - - 0.38%)	0.11% (0.00% - - 0.38%)	0.00% (0.00 % - 0.00%)	15.36% (13.23 % - - 16.65%)	15.36% (13.23% - - 16.65%)	15.36% (13.23% - - 16.65%)	15.36% (13.23 % - - 16.65%)	15.36% (13.23% - - 16.65%)	15.36% (13.23% - - 16.65%)	15.36% (13.23 % - - 16.65%)
Puerto Rico	0.34% (0.02% - 2.00%)	0.39% (0.00% - 2.08%)	0.39% (0.05% - 1.69%)	71.40% (13.68% - - 100.00%)	0.23% (0.06% - 5.10%)	13.75% (5.79% - 24.30%)	0.01% (0.00 % - 0.82%)	6.69% (2.37% - - 7.71%)	0.93% (0.14% - 3.03%)	1.41% (0.02% - 5.80%)	7.18% (2.17% - - 9.02%)	4.33% (3.25% - 7.07%)	9.21% (7.17% - - 11.33%)	1.87% (0.31% - - 5.79%)
Qatar	0.47% (0.04% - 1.93%)	0.30% (0.08% - 1.34%)	0.23% (0.02% - 1.92%)	16.77% (0.13% - 53.35%)	0.43% (0.02% - - 2.49%)	14.13% (5.93% - 31.47%)	0.01% (0.00 % - 0.82%)	7.05% (2.17% - - 8.36%)	1.32% (0.09% - 3.51%)	1.41% (0.02% - 6.44%)	6.34% (2.81% - - 8.53%)	4.69% (3.78% - 6.15%)	9.16% (6.84% - - 11.81%)	1.83% (0.07% - - 7.46%)
Republic of Korea	0.44% (0.00% - 4.37%)	0.44% (0.00% - 4.37%)	0.44% (0.00% - 4.37%)	0.44% (0.00% - 4.37%)	0.44% (0.00% - - 4.37%)	0.44% (0.00% - - 4.37%)	0.00% (0.00 % - 0.00%)	11.00% (8.10% - - 11.71%)	11.00% (8.10% - 11.71%)	11.00% (8.10% - - 11.71%)	11.00% (8.10% - - 11.71%)	11.00% (8.10% - - 11.71%)	11.00% (8.10% - - 11.71%)	11.00% (8.10% - - 11.71%)
Republic of	0.73%	0.54%	0.25%	33.40%	0.24%	13.90%	0.01%	10.65%	15.73%	1.47%	10.25%	13.51%	6.99%	19.72%

Country	Final cons.	House. cons.	Gov cons.	GCF	Exp	Imp	GDP	Agri...	Min. Manu., Util.	Manu.	Constr	Wholesale, Retail,...	Transp. Commun.	Other
Moldova	(0.07% - 5.95%)	(0.02% - 2.72%)	(0.04% - 2.15%)	(16.08% - 55.16%)	(0.02% - 2.45%)	(5.76% - 31.44%)	(0.00% - 0.84%)	(0.14% - 16.64%)	(6.04% - 22.37%)	(0.03% - 6.36%)	(3.87% - 14.94%)	(3.49% - 16.67%)	(2.07% - 13.58%)	(8.11% - 28.62%)
Romania	2.37% (0.00% - 9.78%)	0.64% (0.00% - 5.56%)	0.64% (0.00% - 5.56%)	2.37% (0.00% - 9.78%)	2.37% (0.00% - 9.78%)	2.37% (0.00% - 9.78%)	0.00% (0.00% - 0.00%)	13.20% (9.72% - 16.86%)	13.20% (9.72% - 16.86%)	13.20% (9.72% - 16.86%)	13.20% (9.72% - 16.86%)	13.20% (9.72% - 16.86%)	13.20% (9.72% - 16.86%)	13.20% (9.72% - 16.86%)
Russian Federation	0.69% (0.09% - 4.42%)	1.45% (0.12% - 3.82%)	1.45% (0.12% - 3.82%)	0.69% (0.09% - 4.42%)	0.69% (0.09% - 4.42%)	0.69% (0.09% - 4.42%)	0.00% (0.00% - 0.00%)	15.35% (9.79% - 17.59%)	15.35% (9.79% - 17.59%)	15.35% (9.79% - 17.59%)	15.35% (9.79% - 17.59%)	15.35% (9.79% - 17.59%)	15.35% (9.79% - 17.59%)	15.35% (9.79% - 17.59%)
Rwanda	0.26% (0.01% - 1.10%)	0.22% (0.03% - 1.04%)	0.38% (0.08% - 1.14%)	20.46% (11.23% - 99.63%)	0.29% (0.02% - 3.16%)	14.09% (5.79% - 26.96%)	0.00% (0.00% - 0.83%)	3.83% (1.94% - 6.45%)	9.30% (7.51% - 12.79%)	1.71% (0.08% - 5.75%)	2.97% (0.87% - 10.52%)	5.97% (3.08% - 9.45%)	0.79% (0.11% - 5.52%)	12.24% (10.47% - 15.52%)
Saint Kitts and Nevis	0.53% (0.00% - 1.83%)	0.50% (0.00% - 1.77%)	0.51% (0.08% - 2.36%)	12.33% (2.51% - 25.49%)	0.36% (0.03% - 2.82%)	14.12% (5.81% - 31.79%)	0.01% (0.00% - 0.84%)	7.33% (4.56% - 13.99%)	13.80% (9.55% - 16.98%)	2.18% (0.13% - 5.59%)	7.10% (5.26% - 12.17%)	9.93% (7.01% - 12.17%)	5.23% (0.77% - 8.33%)	15.59% (13.18% - 19.18%)
Saint Lucia	0.60% (0.00% - 1.82%)	0.72% (0.03% - 3.09%)	0.97% (0.03% - 2.22%)	41.21% (1.61% - 70.54%)	0.39% (0.02% - 2.24%)	13.87% (5.83% - 31.26%)	0.01% (0.00% - 0.83%)	2.12% (0.00% - 12.36%)	5.19% (0.89% - 15.52%)	1.60% (0.05% - 6.18%)	1.87% (0.26% - 7.26%)	2.13% (0.33% - 11.02%)	2.56% (0.75% - 7.49%)	8.45% (5.73% - 17.44%)
Samoa	0.33% (0.01% - 1.92%)	0.37% (0.03% - 2.00%)	0.48% (0.05% - 1.62%)	59.24% (29.00% - 97.17%)	0.47% (0.09% - 4.94%)	13.39% (5.35% - 28.05%)	0.00% (0.00% - 0.82%)	4.52% (1.20% - 5.34%)	1.57% (0.05% - 2.58%)	2.20% (0.11% - 5.90%)	5.09% (0.34% - 6.70%)	2.08% (1.46% - 4.82%)	7.08% (4.54% - 8.90%)	3.96% (2.50% - 7.95%)
San Marino	0.47% (0.05% - 4.58%)	0.54% (0.06% - 4.68%)	0.33% (0.03% - 4.10%)	69.74% (30.13% - 99.96%)	0.48% (0.01% - 10.04%)	13.60% (5.61% - 22.79%)	0.01% (0.00% - 0.83%)	1.61% (0.38% - 14.37%)	7.42% (4.42% - 18.27%)	1.85% (0.09% - 5.02%)	4.12% (0.04% - 9.94%)	3.69% (0.33% - 13.30%)	2.79% (0.30% - 9.67%)	10.92% (7.59% - 20.45%)
Sao Tome and Principe	0.39% (0.03% - 1.79%)	0.40% (0.05% - 1.75%)	0.49% (0.02% - 2.40%)	23.40% (7.08% - 41.50%)	0.41% (0.04% - 3.38%)	13.81% (5.53% - 31.56%)	0.01% (0.00% - 0.84%)	3.37% (0.33% - 10.78%)	11.46% (4.94% - 17.78%)	3.29% (0.76% - 5.55%)	5.55% (0.44% - 8.85%)	6.61% (2.58% - 9.45%)	3.68% (1.08% - 7.56%)	11.20% (8.96% - 21.22%)
Saudi Arabia	0.41% (0.02% - 1.92%)	0.43% (0.01% - 1.21%)	0.33% (0.01% - 1.67%)	41.65% (11.48% - 74.10%)	0.25% (0.00% - 2.24%)	13.92% (5.81% - 31.27%)	0.01% (0.00% - 0.82%)	4.83% (2.22% - 7.85%)	0.63% (0.04% - 2.85%)	1.41% (0.02% - 6.44%)	4.08% (1.52% - 8.28%)	3.28% (0.72% - 5.27%)	8.01% (5.34% - 9.19%)	3.07% (0.10% - 9.70%)
Senegal	0.41% (0.03% - 1.42%)	0.29% (0.02% - 1.44%)	0.51% (0.07% - 1.82%)	29.19% (10.32% - 96.82%)	0.31% (0.02% - 1.83%)	14.01% (5.82% - 31.24%)	0.01% (0.01% - 0.84%)	10.92% (8.84% - 14.87%)	16.05% (14.75% - 18.14%)	1.42% (0.02% - 6.41%)	10.91% (8.74% - 14.07%)	12.88% (9.53% - 14.84%)	7.78% (6.62% - 9.82%)	19.29% (16.91% - 22.82%)
Serbia	0.36% (0.02% - 1.52%)	0.31% (0.01% - 1.38%)	0.37% (0.04% - 1.95%)	42.77% (11.66% - 99.09%)	0.20% (0.00% - 2.11%)	13.87% (5.81% - 31.24%)	0.01% (0.00% - 0.84%)	11.43% (4.08% - 16.49%)	15.38% (10.18% - 20.06%)	1.41% (0.02% - 6.43%)	10.44% (7.63% - 12.31%)	12.32% (7.34% - 15.13%)	7.09% (1.36% - 11.76%)	19.98% (12.34% - 24.77%)
Seychelles	2.18% (0.23% - 4.86%)	1.76% (0.22% - 5.84%)	1.61% (0.20% - 4.99%)	37.56% (0.48% - 61.85%)	0.62% (0.07% - 2.44%)	14.21% (6.23% - 31.58%)	0.02% (0.01% - 0.84%)	16.16% (11.67% - 19.02%)	20.35% (16.15% - 25.58%)	1.76% (0.06% - 6.04%)	13.92% (10.01% - 23.03%)	17.00% (11.98% - 22.72%)	11.71% (9.13% - 17.75%)	24.17% (19.37% - 27.73%)
Sierra Leone	0.51% (0.02% - 5.51%)	0.57% (0.03% - 5.57%)	0.30% (0.00% - 5.19%)	51.51% (13.09% - 99.77%)	0.22% (0.02% - 12.09%)	11.51% (5.74% - 21.15%)	0.01% (0.00% - 0.83%)	1.57% (0.14% - 4.98%)	5.32% (1.05% - 7.29%)	1.47% (0.03% - 6.28%)	1.16% (0.14% - 3.68%)	1.11% (0.06% - 3.91%)	3.19% (0.18% - 6.39%)	8.51% (2.95% - 13.39%)
Singapore	0.65% (0.11% - 1.95%)	0.74% (0.14% - 2.04%)	0.47% (0.00% - 1.73%)	99.95% (40.84% - 100.00%)	1.69% (0.04% - 4.76%)	11.63% (5.51% - 25.12%)	0.00% (0.00% - 0.83%)	0.72% (0.01% - 3.44%)	6.25% (2.91% - 6.91%)	1.41% (0.02% - 6.43%)	2.39% (0.07% - 4.72%)	3.02% (0.77% - 4.18%)	2.36% (0.05% - 4.05%)	8.80% (6.58% - 10.99%)

Country	Final cons.	House. cons.	Gov cons.	GCF	Exp	Imp	GDP	Agri...	Min. Manu., Util.	Manu.	Constr	Wholesale, Retail,...	Transp. Commun.	Other
Slovakia	0.07% (0.00% - 0.73%)	0.07% (0.00% - 0.73%)	0.07% (0.00% - 0.73%)	0.07% (0.00% - 0.73%)	0.07% (0.00% - 0.73%)	0.07% (0.00% - 0.73%)	0.00% (0.00% - 0.00%)	8.87% (1.39% - 12.58%)	8.87% (1.39% - 12.58%)	8.87% (1.39% - 12.58%)	8.87% (1.39% - 12.58%)	8.87% (1.39% - 12.58%)	8.87% (1.39% - 12.58%)	8.87% (1.39% - 12.58%)
Slovenia	0.12% (0.00% - 1.66%)	0.12% (0.00% - 1.64%)	0.12% (0.00% - 1.64%)	0.12% (0.00% - 1.66%)	0.12% (0.00% - 1.66%)	0.12% (0.00% - 1.66%)	0.00% (0.00% - 0.00%)	14.08% (13.43% - 15.37%)	14.08% (13.43% - 15.37%)	14.08% (13.43% - 15.37%)	14.08% (13.43% - 15.37%)	14.08% (13.43% - 15.37%)	14.08% (13.43% - 15.37%)	14.08% (13.43% - 15.37%)
Solomon Islands	0.51% (0.03% - 6.02%)	0.81% (0.21% - 6.09%)	0.27% (0.01% - 5.83%)	53.31% (1.15% - 99.70%)	0.48% (0.02% - 12.52%)	13.34% (5.23% - 21.75%)	0.00% (0.00% - 0.83%)	2.97% (0.02% - 7.56%)	3.34% (0.35% - 7.14%)	2.83% (0.72% - 4.34%)	2.69% (0.19% - 5.58%)	1.60% (0.29% - 3.82%)	5.65% (3.49% - 8.19%)	5.17% (0.36% - 10.35%)
Somalia	0.40% (0.03% - 1.71%)	0.66% (0.05% - 1.97%)	0.44% (0.02% - 2.54%)	2.25% (0.07% - 9.41%)	1.54% (0.27% - 3.21%)	14.22% (5.77% - 31.81%)	0.01% (0.01% - 0.84%)	11.81% (10.83% - 14.03%)	17.43% (15.83% - 18.22%)	1.85% (0.07% - 5.97%)	11.66% (8.12% - 15.65%)	13.94% (10.61% - 15.38%)	8.88% (7.43% - 10.85%)	19.76% (17.97% - 24.46%)
South Africa	0.42% (0.01% - 2.71%)	0.42% (0.01% - 2.71%)	0.42% (0.01% - 2.71%)	0.42% (0.01% - 2.71%)	0.42% (0.01% - 2.71%)	0.42% (0.01% - 2.71%)	0.00% (0.00% - 0.00%)	12.17% (11.81% - 12.96%)	12.17% (11.81% - 12.96%)	12.17% (11.81% - 12.96%)	12.17% (11.81% - 12.96%)	12.17% (11.81% - 12.96%)	12.17% (11.81% - 12.96%)	12.17% (11.81% - 12.96%)
South Sudan	0.00% (0.00% - 5.24%)	0.00% (0.00% - 4.30%)	0.00% (0.00% - 4.57%)	0.00% (0.00% - 43.85%)	0.00% (0.00% - 0.86%)	0.00% (0.00% - 12.34%)	0.00% (0.00% - 0.82%)	0.00% (0.00% - 9.12%)	0.00% (0.00% - 4.14%)	0.00% (0.00% - 6.41%)	0.00% (0.00% - 10.21%)	0.00% (0.00% - 9.81%)	0.00% (0.00% - 11.65%)	0.00% (0.00% - 3.94%)
Spain	0.18% (0.00% - 1.17%)	0.15% (0.00% - 1.18%)	0.15% (0.00% - 1.18%)	0.18% (0.00% - 1.17%)	0.18% (0.00% - 1.17%)	0.18% (0.00% - 1.17%)	0.00% (0.00% - 0.00%)	11.27% (10.35% - 11.92%)	11.27% (10.35% - 11.92%)	11.27% (10.35% - 11.92%)	11.27% (10.35% - 11.92%)	11.27% (10.35% - 11.92%)	11.27% (10.35% - 11.92%)	11.27% (10.35% - 11.92%)
Sri Lanka	0.40% (0.05% - 1.60%)	0.29% (0.00% - 1.56%)	0.53% (0.11% - 2.13%)	28.88% (11.24% - 61.75%)	0.31% (0.00% - 2.38%)	14.01% (5.81% - 31.38%)	0.00% (0.00% - 0.82%)	3.57% (0.35% - 4.78%)	1.98% (0.46% - 2.94%)	1.42% (0.02% - 6.43%)	4.04% (0.01% - 5.85%)	1.33% (0.32% - 4.14%)	6.25% (3.86% - 7.85%)	4.83% (3.25% - 8.96%)
St. Vincent and the Grenadines	0.42% (0.02% - 1.57%)	0.31% (0.01% - 1.47%)	0.53% (0.06% - 1.99%)	26.59% (12.65% - 56.47%)	0.28% (0.00% - 2.22%)	14.02% (5.74% - 31.39%)	0.02% (0.01% - 0.84%)	15.87% (8.70% - 17.92%)	20.91% (12.67% - 24.57%)	1.71% (0.06% - 6.05%)	13.76% (7.59% - 22.34%)	15.65% (11.35% - 21.56%)	12.14% (4.37% - 17.77%)	24.30% (17.77% - 26.59%)
Sudan	0.00% (0.00% - 0.84%)	0.00% (0.00% - 1.88%)	0.00% (0.00% - 1.03%)	0.00% (0.00% - 38.42%)	0.00% (0.00% - 0.71%)	0.00% (0.00% - 12.28%)	0.00% (0.00% - 0.83%)	0.00% (0.00% - 7.94%)	0.00% (0.00% - 5.63%)	0.00% (0.00% - 6.44%)	0.00% (0.00% - 10.22%)	0.00% (0.00% - 8.01%)	0.00% (0.00% - 10.61%)	0.00% (0.00% - 9.59%)
Sudan (Former)	0.50% (0.00% - 3.81%)	0.55% (0.00% - 1.68%)	0.45% (0.00% - 1.98%)	33.44% (0.00% - 99.90%)	0.61% (0.00% - 6.27%)	13.93% (0.00% - 30.72%)	0.00% (0.00% - 0.82%)	1.38% (0.00% - 7.94%)	4.68% (0.00% - 23.29%)	1.45% (0.00% - 6.44%)	2.64% (0.00% - 11.27%)	2.87% (0.00% - 10.47%)	4.10% (0.00% - 10.61%)	8.49% (0.00% - 16.10%)
Suriname	0.50% (0.02% - 1.64%)	0.39% (0.04% - 1.52%)	0.45% (0.03% - 1.90%)	9.90% (1.18% - 74.92%)	0.46% (0.05% - 2.18%)	14.27% (5.86% - 31.50%)	0.01% (0.00% - 0.83%)	4.79% (0.32% - 10.71%)	8.82% (5.25% - 16.83%)	1.45% (0.03% - 6.39%)	3.93% (0.19% - 14.71%)	7.04% (0.22% - 14.35%)	2.10% (0.44% - 7.98%)	13.32% (7.12% - 18.96%)
Swaziland	0.58% (0.17% - 27.26%)	2.38% (0.27% - 33.79%)	2.67% (0.30% - 19.34%)	37.91% (3.53% - 1565.69%)	0.74% (0.03% - 4.37%)	14.27% (5.45% - 31.83%)	0.02% (0.02% - 0.85%)	18.95% (18.14% - 21.96%)	24.74% (22.84% - 25.44%)	1.43% (0.03% - 6.37%)	18.25% (15.86% - 23.33%)	21.41% (17.63% - 22.65%)	16.04% (14.51% - 18.40%)	27.13% (25.02% - 31.08%)
Sweden	0.09% (0.00% - 1.69%)	0.09% (0.00% - 1.69%)	0.09% (0.00% - 1.69%)	0.09% (0.00% - 1.69%)	0.09% (0.00% - 1.69%)	0.09% (0.00% - 1.69%)	0.00% (0.00% - 0.00%)	14.10% (13.17% - 14.65%)	14.10% (13.17% - 14.65%)	14.10% (13.17% - 14.65%)	14.10% (13.17% - 14.65%)	14.10% (13.17% - 14.65%)	14.10% (13.17% - 14.65%)	14.10% (13.17% - 14.65%)
Switzerland	0.06% (0.00% - 0.35%)	0.06% (0.00% - 0.35%)	0.06% (0.00% - 0.35%)	0.06% (0.00% - 0.35%)	0.06% (0.00% - 0.35%)	0.06% (0.00% - 0.35%)	0.00% (0.00% - 0.00%)	5.83% (0.17% - 6.13%)	5.83% (0.17% - 6.13%)	5.83% (0.17% - 6.13%)	5.83% (0.17% - 6.13%)	5.83% (0.17% - 6.13%)	5.83% (0.17% - 6.13%)	5.83% (0.17% - 6.13%)

Country	Final cons.	House. cons.	Gov cons.	GCF	Exp	Imp	GDP	Agri...	Min. Manu., Util.	Manu.	Constr	Wholesale, Retail,...	Transp. Commun.	Other
Syrian Arab Republic	0.42% (0.00% - 1.59%)	0.29% (0.03% - 1.39%)	0.31% (0.00% - 1.96%)	19.90% (2.34% - 77.56%)	0.40% (0.01% - 2.20%)	14.03% (5.95% - 31.35%)	0.00% (0.00% - 0.82%)	3.74% (0.28% - 5.04%)	1.76% (0.31% - 2.65%)	1.41% (0.02% - 6.43%)	3.09% (0.01% - 6.38%)	1.33% (0.22% - 4.66%)	6.65% (4.30% - 7.54%)	4.42% (2.90% - 8.39%)
Tajikistan	1.93% (0.15% - 4.43%)	2.03% (0.07% - 4.28%)	1.89% (0.14% - 5.16%)	98.29% (11.24% - 99.95%)	4.11% (0.36% - 9.82%)	12.46% (1.27% - 31.88%)	0.02% (0.01% - 0.84%)	9.04% (5.89% - 11.54%)	14.50% (12.29% - 15.70%)	1.63% (0.05% - 5.86%)	8.73% (6.22% - 13.41%)	9.97% (7.63% - 12.63%)	5.82% (4.31% - 7.93%)	16.81% (14.55% - 21.51%)
Thailand	0.41% (0.00% - 1.84%)	0.31% (0.01% - 1.65%)	0.48% (0.01% - 2.22%)	29.05% (16.31% - 56.18%)	0.24% (0.00% - 2.70%)	13.94% (5.76% - 31.68%)	0.00% (0.00% - 0.82%)	4.47% (1.53% - 6.46%)	1.04% (0.04% - 1.92%)	1.41% (0.02% - 6.44%)	5.03% (0.94% - 7.15%)	2.69% (1.31% - 5.15%)	7.49% (6.34% - 8.51%)	3.63% (1.50% - 6.93%)
The Former Yugoslav Republic of Macedonia	0.33% (0.01% - 1.46%)	0.28% (0.01% - 1.32%)	0.40% (0.00% - 1.89%)	38.10% (16.03% - 95.99%)	0.21% (0.02% - 2.00%)	13.92% (5.76% - 30.92%)	0.01% (0.01% - 0.84%)	12.42% (8.54% - 16.27%)	17.48% (12.94% - 20.63%)	1.42% (0.02% - 6.42%)	11.56% (7.23% - 18.19%)	14.45% (9.06% - 17.39%)	9.03% (5.97% - 14.32%)	21.30% (17.72% - 23.03%)
Timor-Leste	0.98% (0.03% - 2.20%)	0.48% (0.06% - 1.31%)	0.96% (0.12% - 1.87%)	22.17% (3.24% - 74.13%)	0.65% (0.01% - 2.74%)	14.42% (5.16% - 31.75%)	0.01% (0.00% - 0.82%)	5.57% (1.25% - 9.76%)	1.32% (0.09% - 4.72%)	1.23% (0.03% - 6.44%)	6.45% (1.34% - 9.54%)	4.70% (2.14% - 6.94%)	8.98% (5.19% - 13.01%)	2.50% (0.19% - 8.16%)
Togo	0.35% (0.03% - 1.27%)	0.28% (0.00% - 0.90%)	0.35% (0.00% - 1.38%)	57.68% (25.13% - 99.74%)	0.17% (0.01% - 2.81%)	13.71% (5.63% - 29.22%)	0.01% (0.00% - 0.83%)	5.70% (0.71% - 13.19%)	10.63% (6.83% - 19.46%)	1.44% (0.03% - 6.35%)	4.70% (0.49% - 16.98%)	5.00% (3.49% - 16.21%)	2.01% (0.01% - 13.13%)	12.88% (8.96% - 21.84%)
Tonga	0.28% (0.01% - 2.90%)	0.37% (0.01% - 2.87%)	0.27% (0.04% - 2.57%)	39.73% (4.24% - 94.12%)	0.30% (0.05% - 6.09%)	13.83% (5.65% - 28.52%)	0.01% (0.01% - 0.84%)	8.61% (7.66% - 11.84%)	14.60% (12.35% - 16.42%)	2.54% (0.18% - 5.48%)	8.36% (5.80% - 13.24%)	10.49% (8.08% - 12.10%)	5.93% (3.67% - 8.63%)	16.78% (15.62% - 21.42%)
Trinidad and Tobago	1.11% (0.18% - 3.78%)	0.62% (0.03% - 2.21%)	0.77% (0.10% - 2.78%)	51.24% (6.30% - 99.86%)	1.24% (0.04% - 3.66%)	15.23% (5.70% - 31.55%)	0.00% (0.00% - 0.82%)	4.27% (1.28% - 5.05%)	1.28% (0.13% - 2.41%)	1.41% (0.02% - 6.44%)	5.10% (0.07% - 7.33%)	2.07% (0.52% - 6.16%)	7.25% (4.49% - 8.57%)	3.89% (1.23% - 8.21%)
Tunisia	0.33% (0.02% - 1.93%)	0.49% (0.02% - 1.79%)	0.64% (0.04% - 2.36%)	8.83% (1.89% - 66.33%)	0.58% (0.01% - 2.93%)	14.23% (5.58% - 31.95%)	0.00% (0.00% - 0.83%)	3.76% (1.18% - 7.52%)	8.87% (7.27% - 10.66%)	1.41% (0.02% - 6.43%)	3.96% (1.40% - 6.49%)	5.37% (3.11% - 7.68%)	0.74% (0.16% - 2.17%)	12.37% (9.43% - 15.37%)
Turkey	0.21% (0.00% - 1.41%)	0.26% (0.00% - 1.23%)	0.26% (0.00% - 1.23%)	0.21% (0.00% - 1.41%)	0.21% (0.00% - 1.41%)	0.21% (0.00% - 1.41%)	0.00% (0.00% - 0.00%)	12.99% (9.77% - 14.40%)	12.99% (9.77% - 14.40%)	12.99% (9.77% - 14.40%)	12.99% (9.77% - 14.40%)	12.99% (9.77% - 14.40%)	12.99% (9.77% - 14.40%)	12.99% (9.77% - 14.40%)
Turkmenistan	0.35% (0.02% - 1.54%)	0.26% (0.01% - 1.48%)	0.20% (0.04% - 1.86%)	32.12% (2.02% - 99.96%)	0.39% (0.01% - 2.25%)	13.98% (5.82% - 31.40%)	0.02% (0.00% - 0.84%)	2.36% (0.02% - 23.90%)	5.95% (1.38% - 29.58%)	1.43% (0.03% - 6.43%)	3.51% (0.02% - 22.21%)	3.84% (0.54% - 22.49%)	6.16% (0.36% - 20.66%)	9.36% (4.09% - 32.61%)
Turks and Caicos Islands	0.24% (0.03% - 1.25%)	0.20% (0.01% - 1.11%)	0.36% (0.08% - 1.67%)	26.90% (10.56% - 85.05%)	0.24% (0.02% - 1.55%)	14.01% (5.79% - 30.13%)	0.00% (0.00% - 0.82%)	4.35% (0.10% - 11.66%)	4.57% (0.11% - 10.86%)	1.97% (0.08% - 6.23%)	3.99% (0.00% - 7.48%)	4.64% (0.37% - 8.59%)	5.79% (0.11% - 12.88%)	6.86% (0.51% - 14.00%)
Tuvalu	0.40% (0.07% - 15.12%)	1.40% (0.01% - 14.52%)	0.36% (0.04% - 13.79%)	20.82% (4.80% - 68.62%)	8.55% (2.14% - 25.25%)	13.87% (5.22% - 29.94%)	0.01% (0.00% - 0.83%)	2.44% (0.46% - 5.20%)	15.46% (8.59% - 39.45%)	5.85% (0.94% - 13.34%)	1.81% (0.06% - 8.32%)	2.21% (0.09% - 7.96%)	2.06% (0.26% - 5.45%)	9.28% (2.27% - 13.16%)
Uganda	0.44% (0.02% - 1.67%)	0.35% (0.02% - 1.59%)	0.40% (0.00% - 2.16%)	17.73% (7.45% - 51.48%)	0.36% (0.00% - 2.48%)	14.12% (5.84% - 31.56%)	0.01% (0.00% - 0.83%)	1.57% (0.45% - 8.32%)	7.32% (4.66% - 13.16%)	1.43% (0.02% - 6.42%)	4.28% (0.28% - 5.79%)	4.66% (3.28% - 6.79%)	1.96% (0.28% - 4.24%)	11.09% (8.42% - 18.46%)
Ukraine	0.76% (0.10% -	0.47% (0.05% -	0.27% (0.02% -	30.48% (8.57% - 93.24%)	0.26% (0.00% -	14.00% (5.80% -	0.01% (0.00% -	8.74% (3.78% -	12.64% (9.62% - 24.05%)	1.41% (0.02% - 6.44%)	5.20% (2.55% -	8.91% (2.84% - 21.59%)	4.34% (1.00% - 15.24%)	17.56% (10.22% -

Country	Final cons.	House. cons.	Gov cons.	GCF	Exp	Imp	GDP	Agri...	Min. Manu., Util.	Manu.	Constr	Wholesale, Retail,...	Transp. Commun.	Other
	2.74%)	1.26%)	0.94%)		2.32%)	31.06%)	0.83%)	17.96%)			21.98%)			26.21%)
United Arab Emirates	0.39% (0.04% - 1.60%)	0.37% (0.00% - 1.52%)	0.55% (0.04% - 2.09%)	30.67% (19.81% - 63.71%)	0.24% (0.02% - 2.34%)	14.06% (5.72% - 31.36%)	0.01% (0.00% - 0.82%)	8.48% (4.52% - 15.79%)	2.51% (1.03% - 9.53%)	1.41% (0.02% - 6.44%)	9.72% (3.80% - 12.10%)	7.75% (3.43% - 12.75%)	11.20% (9.55% - 15.82%)	2.74% (0.08% - 7.12%)
United Kingdom	0.05% (0.00% - 0.25%)	0.05% (0.00% - 0.25%)	0.05% (0.00% - 0.25%)	0.05% (0.00% - 0.25%)	0.05% (0.00% - 0.25%)	0.05% (0.00% - 0.25%)	0.00% (0.00% - 0.00%)	13.06% (8.36% - 13.51%)	13.06% (8.36% - 13.51%)	13.06% (8.36% - 13.51%)	13.06% (8.36% - 13.51%)	13.06% (8.36% - 13.51%)	13.06% (8.36% - 13.51%)	13.06% (8.36% - 13.51%)
United Republic of Tanzania: Mainland	0.42% (0.01% - 1.81%)	0.26% (0.02% - 1.71%)	0.21% (0.01% - 2.28%)	19.01% (4.45% - 61.78%)	0.39% (0.03% - 2.49%)	14.11% (5.88% - 31.38%)	0.01% (0.00% - 0.83%)	5.46% (4.65% - 7.71%)	10.90% (9.04% - 13.42%)	1.42% (0.02% - 6.43%)	4.60% (2.43% - 11.38%)	7.71% (4.36% - 10.31%)	2.24% (0.99% - 6.38%)	13.79% (11.75% - 17.12%)
United States	0.05% (0.00% - 0.40%)	0.05% (0.00% - 0.40%)	0.05% (0.00% - 0.40%)	0.05% (0.00% - 0.40%)	0.05% (0.00% - 0.40%)	0.05% (0.00% - 0.40%)	0.00% (0.00% - 0.00%)	0.88% (0.06% - 3.78%)	0.88% (0.06% - 3.78%)	0.88% (0.06% - 3.78%)	0.88% (0.06% - 3.78%)	0.88% (0.06% - 3.78%)	0.88% (0.06% - 3.78%)	0.88% (0.06% - 3.78%)
Uruguay	0.38% (0.02% - 1.67%)	0.29% (0.02% - 1.60%)	0.54% (0.08% - 2.17%)	22.09% (10.07% - 53.67%)	0.32% (0.02% - 2.49%)	14.08% (5.82% - 31.46%)	0.01% (0.00% - 0.84%)	6.06% (4.31% - 11.90%)	12.09% (8.28% - 16.20%)	1.41% (0.02% - 6.43%)	8.08% (4.58% - 10.36%)	9.07% (7.07% - 10.18%)	4.65% (0.03% - 7.31%)	15.48% (13.08% - 22.13%)
Uzbekistan	0.43% (0.01% - 1.74%)	0.32% (0.01% - 1.57%)	0.54% (0.08% - 2.14%)	23.45% (8.08% - 59.55%)	0.30% (0.06% - 2.53%)	14.07% (5.82% - 31.40%)	0.01% (0.01% - 0.84%)	8.26% (4.91% - 26.41%)	13.65% (10.94% - 32.67%)	1.41% (0.02% - 6.43%)	7.75% (5.53% - 30.24%)	9.85% (7.31% - 29.44%)	4.94% (3.50% - 26.36%)	16.42% (12.85% - 35.07%)
Vanuatu	0.52% (0.03% - 2.18%)	0.42% (0.07% - 0.95%)	0.16% (0.01% - 0.62%)	26.86% (10.45% - 90.81%)	0.24% (0.00% - 1.16%)	13.98% (5.73% - 29.37%)	0.01% (0.00% - 0.83%)	5.64% (2.30% - 9.19%)	10.57% (8.33% - 14.26%)	2.41% (0.21% - 5.46%)	4.96% (2.14% - 10.04%)	6.98% (5.30% - 9.97%)	2.26% (0.09% - 5.39%)	13.73% (10.74% - 17.45%)
Venezuela	0.40% (0.01% - 1.82%)	0.50% (0.00% - 1.66%)	0.55% (0.07% - 2.20%)	13.66% (6.49% - 36.72%)	0.35% (0.08% - 2.66%)	14.16% (5.78% - 31.80%)	0.00% (0.00% - 0.83%)	2.23% (0.41% - 11.49%)	6.51% (4.75% - 15.89%)	1.41% (0.02% - 6.44%)	2.96% (0.19% - 10.18%)	4.20% (1.53% - 12.02%)	2.31% (0.37% - 8.93%)	11.11% (6.09% - 23.96%)
Viet Nam	0.35% (0.00% - 1.62%)	0.30% (0.01% - 1.53%)	0.50% (0.05% - 2.10%)	36.48% (12.59% - 65.35%)	0.23% (0.02% - 2.36%)	13.94% (5.75% - 31.34%)	0.00% (0.00% - 0.82%)	3.43% (0.89% - 4.19%)	2.02% (0.59% - 2.97%)	1.41% (0.02% - 6.44%)	4.11% (0.04% - 6.30%)	1.25% (0.14% - 4.46%)	6.58% (3.80% - 7.71%)	4.51% (2.93% - 9.18%)
Yemen	0.45% (0.00% - 7.00%)	0.48% (0.06% - 6.99%)	0.75% (0.08% - 7.27%)	28.83% (1.02% - 99.99%)	1.04% (0.06% - 13.50%)	14.47% (3.94% - 34.30%)	0.01% (0.00% - 0.83%)	3.81% (0.40% - 15.33%)	2.38% (0.03% - 9.39%)	1.41% (0.02% - 6.44%)	3.51% (0.80% - 11.50%)	2.39% (0.16% - 12.30%)	6.68% (0.03% - 15.37%)	5.74% (0.72% - 15.13%)
Zambia	1.81% (0.18% - 3.85%)	0.74% (0.03% - 3.10%)	0.73% (0.01% - 2.48%)	44.74% (5.49% - 99.55%)	0.69% (0.05% - 4.23%)	14.10% (6.50% - 31.16%)	0.00% (0.00% - 0.83%)	1.39% (0.08% - 3.63%)	6.53% (4.70% - 9.66%)	1.42% (0.02% - 6.42%)	2.74% (0.12% - 7.70%)	3.59% (0.01% - 6.93%)	2.39% (0.00% - 3.69%)	9.76% (6.84% - 13.12%)
Zanzibar	0.34% (0.00% - 1.68%)	0.35% (0.02% - 1.60%)	0.55% (0.02% - 2.10%)	50.73% (19.30% - 82.83%)	0.51% (0.05% - 2.50%)	13.61% (5.40% - 31.58%)	0.01% (0.01% - 0.84%)	10.47% (9.72% - 14.31%)	16.97% (14.19% - 18.82%)	2.42% (0.14% - 5.74%)	11.22% (8.66% - 14.73%)	12.82% (11.54% - 13.71%)	8.49% (5.71% - 9.98%)	19.34% (17.79% - 24.99%)
Zimbabwe	2.58% (0.44% - 9.39%)	4.85% (0.00% - 11.19%)	4.89% (0.02% - 10.61%)	89.95% (32.80% - 99.96%)	9.30% (0.13% - 16.35%)	13.95% (5.45% - 19.78%)	0.02% (0.00% - 0.83%)	5.71% (4.14% - 9.41%)	11.06% (8.11% - 13.57%)	1.41% (0.02% - 6.42%)	5.24% (3.25% - 10.57%)	7.50% (4.51% - 10.02%)	3.30% (0.19% - 5.21%)	14.19% (12.38% - 17.49%)
Taiwan	0.21% (0.00% - 0.48%)	0.21% (0.00% - 0.48%)	0.21% (0.00% - 0.48%)	0.21% (0.00% - 0.48%)	0.21% (0.00% - 0.48%)	0.21% (0.00% - 0.48%)	0.00% (0.00% - 0.00%)	2.66% (2.11% - 3.54%)	2.66% (2.11% - 3.54%)	2.66% (2.11% - 3.54%)	2.66% (2.11% - 3.54%)	2.66% (2.11% - 3.54%)	2.66% (2.11% - 3.54%)	2.66% (2.11% - 3.54%)

Maximum differences occurring in DESIRE countries

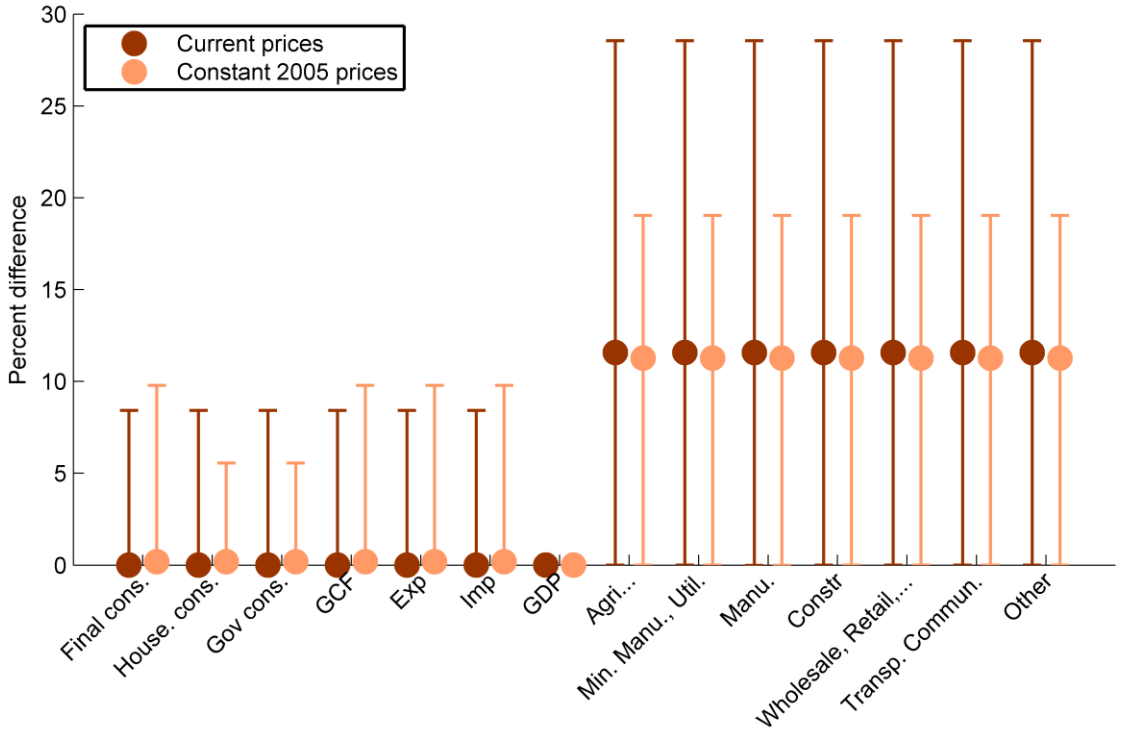


Figure 3: Overall differences in DESIRE countries (absolute change / UN SNA initial entry). Median value, errorbars: min value to max value

DESIRE countries with largest changes - current prices

Bulgaria

Indonesia

Malta

DESIRE countries with largest changes - constant 2005 prices

Bulgaria

Indonesia

Malta

Appendix 2-B SUTs/IOTs availability overview

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
EU-27																		
Austria	SUT & IO PP CP (59c*59i) NACE Rev1		SUT PP CP (59c*59i) NACE Rev1		SUT PP CP (59c*59i) NACE Rev1	SUT & IO PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT & IO PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT & IO PP CP (59c*59i) NACE Rev2	SUT & IO PP CP (59c*59i) NACE Rev2			
Belgium	SUT & IO PP CP (59c*59i) NACE Rev1		SUT PP CP (59c*59i) NACE Rev1		SUT PP CP (59c*59i) NACE Rev1	SUT & IO PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT & IO PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev2	SUT PP CP (59c*59i) NACE Rev2			
Bulgaria						SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1		SUT PP CP (59c*59i) NACE Rev2	SUT PP CP (59c*59i) NACE Rev2			
Cyprus	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev2	SUT PP CP (59c*59i) NACE Rev2			
Czech Republic	SUT PP CP (59c*59i) NACE Rev1&2 & ConsP-Rev2	SUT PP CP (59c*59i) NACE Rev1&2 & ConsP-Rev2	SUT PP CP (59c*59i) NACE Rev1&2 & ConsP-Rev2	SUT PP CP (59c*59i) NACE Rev1&2 & ConsP-Rev2	SUT PP CP (59c*59i) NACE Rev1&2 & ConsP-Rev2	SUT PP CP (59c*59i) NACE Rev1&2 & ConsP-Rev2	SUT PP CP (59c*59i) NACE Rev1&2 & ConsP-Rev2	SUT PP CP (59c*59i) NACE Rev1&2 & ConsP-Rev2	SUT PP CP (59c*59i) NACE Rev1&2 & ConsP-Rev2	SUT PP CP (59c*59i) NACE Rev1&2 & ConsP-Rev2	SUT PP CP (59c*59i) NACE Rev1&2 & ConsP-Rev2	SUT PP CP (59c*59i) NACE Rev1&2 & ConsP-Rev1&2	SUT PP CP (59c*59i) NACE Rev1&2 & ConsP-Rev1&2	SUT PP CP (59c*59i) NACE Rev2	SUT PP CP (59c*59i) NACE Rev2	SUT PP CP (59c*59i) NACE Rev2		
Germany	SUT & IO PP CP (59c*59i) NACE Rev1		SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT & IO PP CP (59c*59i) NACE Rev1	SUT & IO PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1 & IO CP	SUT PP CP & ConsP (59c*59i) NACE Rev1 & IO CP	SUT & IO PP CP (59c*59i) NACE Rev1	SUT & IO PP CP (59c*59i) NACE Rev1	SUT & IO PP CP (59c*59i) NACE Rev1	SUT & IO PP CP (59c*59i) NACE Rev1	SUT & IO PP CP (59c*59i) NACE Rev2	SUT & IO PP CP (59c*59i) NACE Rev2			
Denmark	SUT PP CP & ConsP (59c*59i) NACE Rev1 & IO CP	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1 & IO CP	SUT PP CP & ConsP (59c*59i) NACE Rev1 & IO CP & ConsP	SUT PP CP & ConsP (59c*59i) NACE Rev1 & IO CP & ConsP	SUT PP CP & ConsP (59c*59i) NACE Rev1 & IO CP & ConsP	SUT PP CP & ConsP (59c*59i) NACE Rev1 & IO CP & ConsP	SUT PP CP & ConsP (59c*59i) NACE Rev1 & IO CP & ConsP	SUT PP CP & ConsP (59c*59i) NACE Rev1 & IO CP & ConsP	SUT PP CP & ConsP (59c*59i) NACE Rev1 & IO CP & ConsP	SUT PP CP & ConsP (59c*59i) NACE Rev2	SUT PP CP & ConsP (59c*59i) NACE Rev2			
Estonia			SUT PP CP (59c*59i) NACE Rev1 & IO CP			SUT PP CP (59c*59i) NACE Rev1 & IO CP	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1 & IO CP	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev2	SUT PP CP & ConsP (59c*59i) NACE Rev2			

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Spain	SUT PP CP (59c*59i) NACE Rev1 & IO CP	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP & ConsP(2008) (59c*59i) NACE Rev1 & IO CP	SUT PP CP & ConsP(2008) (59c*59i) NACE Rev1	SUT PP CP & ConsP(2008) (59c*59i) NACE Rev1	SUT PP CP & ConsP(2008) (59c*59i) NACE Rev1	SUT PP CP & ConsP(2008) (59c*59i) NACE Rev1	SUT PP CP & ConsP(2008) (59c*59i) NACE Rev1 & IO CP	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev2	SUT PP CP (59c*59i) NACE Rev2			
Finland	SUT & IO PP CP (59c*59i) NACE Rev1	SUT & IO PP CP (59c*59i) NACE Rev1	SUT & IO PP CP (59c*59i) NACE Rev1	SUT & IO PP CP (59c*59i) NACE Rev1	SUT & IO PP CP (59c*59i) NACE Rev1	SUT & IO PP CP (59c*59i) NACE Rev1	SUT & IO PP CP (59c*59i) NACE Rev1	SUT & IO PP CP (59c*59i) NACE Rev1	SUT & IO PP CP (59c*59i) NACE Rev1	SUT & IO PP CP (59c*59i) NACE Rev1	SUT & IO PP CP (59c*59i) NACE Rev1	SUT & IO PP CP (59c*59i) NACE Rev1	SUT & IO PP CP (59c*59i) NACE Rev1	SUT & IO PP CP (59c*59i) NACE Rev2	SUT & IO PP CP (59c*59i) NACE Rev2	SUT & IO PP CP (59c*59i) NACE Rev2		
France	SUT & IO PP CP (59c*59i) NACE Rev1		SUT & IO PP CP (59c*59i) NACE Rev1		SUT & IO PP CP (59c*59i) NACE Rev1	SUT & IO PP CP (59c*59i) NACE Rev1	SUT & IO PP CP (59c*59i) NACE Rev1	SUT & IO PP CP (59c*59i) NACE Rev1	SUT & IO PP CP (59c*59i) NACE Rev1	SUT & IO PP CP (59c*59i) NACE Rev1	SUT & IO PP CP (59c*59i) NACE Rev1	SUT & IO PP CP (59c*59i) NACE Rev1	SUT & IO PP CP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev2 & IO CP & ConsP	SUT PP CP & ConsP (59c*59i) NACE Rev2 & IO CP			
Greece						SUT PP CP (59c*59i) NACE Rev1&2 & IO CP	SUT PP CP & ConsP (59c*59i) NACE Rev1&2	SUT PP CP & ConsP (59c*59i) NACE Rev1&2	SUT PP CP & ConsP (59c*59i) NACE Rev1&2	SUT PP CP & ConsP (59c*59i) NACE Rev1&2	SUT PP CP & ConsP (59c*59i) NACE Rev1&2 & IO CP	SUT PP CP & ConsP (59c*59i) NACE Rev1&2	SUT PP CP & ConsP (59c*59i) NACE Rev1&2	SUT PP CP & ConsP (59c*59i) NACE Rev1&2 & IO CP	SUT PP CP & ConsP (59c*59i) NACE Rev2 & IO CP	SUT PP CP & ConsP (59c*59i) NACE Rev2 & IO CP	SUT PP CP & ConsP (59c*59i) NACE Rev2
Hungary				SUT PP CP (59c*59i) NACE Rev1 & IO CP	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1 & IO CP	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1 & IO CP	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev2 & IO CP	SUT PP CP & ConsP (59c*59i) NACE Rev2	SUT PP CP & ConsP (59c*59i) NACE Rev2 & IO CP		
Ireland				SUT & IO PP CP (59c*59i) NACE Rev1		SUT & IO PP CP (59c*59i) NACE Rev1 & SUT ConsP(2015)	SUT PP CP (59c*59i) NACE Rev1 & SUT ConsP(2015)	SUT PP CP (59c*59i) NACE Rev1 & SUT ConsP(2015)	SUT PP CP (59c*59i) NACE Rev1 & SUT ConsP(2015)	SUT PP CP (59c*59i) NACE Rev1 & SUT ConsP(2015)	SUT & IO PP CP (59c*59i) NACE Rev1 & SUT ConsP(2015)	SUT PP CP (59c*59i) NACE Rev1 & SUT ConsP(2015)	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev2	SUT PP CP (59c*59i) NACE Rev2			
Italy	SUT PP CP (59c*59i) NACE Rev1 & IO CP	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1 & IO CP	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1 & IO CP	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1&2 & ConsP Rev1!	SUT PP CP & ConsP (59c*59i) NACE Rev2			
Lithuania						SUT & IO PP CP (59c*59i) NACE Rev1 & SUT ConsP(2012)	SUT PP CP (59c*59i) NACE Rev1 & SUT ConsP(2012)	SUT PP CP (59c*59i) NACE Rev1 & SUT ConsP(2012)	SUT PP CP (59c*59i) NACE Rev1 & SUT ConsP(2012)	SUT PP CP (59c*59i) NACE Rev1 & SUT ConsP(2012)	SUT & IO PP CP (59c*59i) NACE Rev1 & SUT ConsP(2010)	SUT PP CP (59c*59i) NACE Rev1 & SUT ConsP(2010)	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev2	SUT PP CP (59c*59i) NACE Rev2			

	1995	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Luxembourg	SUT PP CP & ConsP (59c*59i) NACE Rev1&2 & IO CP Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1&2 & IO CP Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1&2 & IO CP Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1&2 & IO CP Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1&2 & IO CP Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1&2 & IO CP Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1&2 & IO CP Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1&2 & IO CP Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1&2 & IO CP Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1&2 & IO CP Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1&2 & IO CP Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1&2 & IO CP Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1&2 & IO CP Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1&2	SUT PP CP & ConsP (59c*59i) NACE Rev1&2	SUT PP CP & ConsP (59c*59i) NACE Rev1&2	SUT PP CP & ConsP (59c*59i) NACE Rev1&2	SUT PP CP & ConsP (59c*59i) NACE Rev1&2
Latvia		SUT & IO PP CP (59c*59i) NACE Rev1		SUT & IO PP CP (59c*59i) NACE Rev1						SUT PP CP (59c*59i) NACE Rev1			SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1&2	SUT PP CP (59c*59i) NACE Re2			
Malta						SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1			SUT PP CP (59c*59i) NACE Rev1				SUT PP CP (59c*59i) NACE Rev2				
Netherlands	SUT & IO PP CP (59c*59i) NACE Rev1	SUT & IO PP CP (59c*59i) NACE Rev1	SUT & IO PP CP (59c*59i) NACE Rev1	SUT & IO PP CP (59c*59i) NACE Rev1	SUT & IO PP CP (59c*59i) NACE Rev1	SUT & IO PP CP (59c*59i) NACE Rev1	SUT & IO PP CP (59c*59i) NACE Rev1	SUT & IO PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT & IO PP CP (59c*59i) NACE Rev1 & SUT & IO ConsP	SUT & IO PP CP (59c*59i) NACE Rev1 & SUT & IO ConsP	SUT & IO PP CP (59c*59i) NACE Rev1 & SUT & IO ConsP	SUT & IO PP CP (59c*59i) NACE Rev1 & SUT & IO ConsP	SUT & IO PP CP (59c*59i) NACE Rev2 & SUT & IO ConsP	SUT & IO PP CP (59c*59i) NACE Rev2 & SUT & IO ConsP	SUT & IO PP CP (59c*59i) NACE Rev2 & SUT & IO ConsP		
Poland	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP & ConsP(2009) (59c*59i) NACE Rev1 & IO CP	SUT PP CP & ConsP(2009) (59c*59i) NACE Rev1	SUT PP CP & ConsP(2009) (59c*59i) NACE Rev1	SUT PP CP & ConsP(2009) (59c*59i) NACE Rev1	SUT PP CP & ConsP(2009) (59c*59i) NACE Rev1	SUT PP CP & ConsP(2009) (59c*59i) NACE Rev1 & IO CP	SUT PP CP & ConsP(2009) (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev2	SUT PP CP (59c*59i) NACE Rev2			
Portugal	SUT PP CP & ConsP (59c*59i) NACE Rev1 & IO CP	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1 & IO CP	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1 & IO CP	SUT PP CP & ConsP (59c*59i) NACE Rev1&2	SUT PP CP & ConsP (59c*59i) NACE Rev2	SUT PP CP & ConsP (59c*59i) NACE Rev2 & IO CP	SUT PP CP & ConsP (59c*59i) NACE Rev2	SUT PP CP & ConsP (59c*59i) NACE Rev2		
Romania						SUT PP CP & ConsP(2008) (59c*59i) NACE Rev1 & IO CP	SUT PP ConsP(2008) (59c*59i) NACE Rev1	SUT PP CP(2008) & ConsP(2008) (59c*59i) NACE Rev1	SUT PP CP & ConsP(2008) (59c*59i) NACE Rev1 &IO CP	SUT PP CP & ConsP (59c*59i) NACE Rev1 & IO CP & ConsP	SUT PP CP (59c*59i) NACE Rev1 & IO CP	SUT PP CP & ConsP (59c*59i) NACE Rev1 & IO CP & ConsP	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev2 & IO CP	SUT PP CP & ConsP (59c*59i) NACE Rev2	SUT PP CP & ConsP (59c*59i) NACE Rev2 & IO CP & ConsP		
Sweden	SUT PP CP & ConsP (59c*59i) NACE Rev1 & IO CP	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1 & IO CP	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1 & IO CP	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1&2 & IO CP	SUT PP CP & ConsP (59c*59i) NACE Rev2	SUT PP CP & ConsP (59c*59i) NACE Rev2 & IO CP		

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Slovenia		SUT PP CP (59c*59i) NACE Rev1 & IO CP				SUT PP CP (59c*59i) NACE Rev1 & IO CP	SUT PP CP (59c*59i) NACE Rev1 & IO CP	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1 & IO CP	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev2	SUT PP CP & ConsP (59c*59i) NACE Rev2			
Slovakia	SUT PP CP & ConsP(2008) (59c*59i) NACE Rev1	SUT PP CP & ConsP(2008) (59c*59i) NACE Rev1	SUT PP CP & ConsP(2008) (59c*59i) NACE Rev1	SUT PP CP & ConsP(2008) (59c*59i) NACE Rev1	SUT PP CP & ConsP(2008) (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1 & IO CP	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1 & IO CP	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP & ConsP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev2	SUT PP CP & ConsP (59c*59i) NACE Rev2			
United Kingdom	SUT PP CP (59c*59i) NACE Rev1 & IO CP	SUT PP CP (59c*59i) NACE Rev1	SUT PP CP (59c*59i) NACE Rev1&2	SUT PP CP (59c*59i) NACE Rev1&2	SUT PP CP (59c*59i) NACE Rev1&2	SUT PP CP & ConsP(2009) (59c*59i) NACE Rev1&2 & IO CP(2011)	SUT PP CP & ConsP(2009) (59c*59i) NACE Rev1&2	SUT PP CP & ConsP(2009) (59c*59i) NACE Rev1&2	SUT PP CP & ConsP(2009) (59c*59i) NACE Rev1&2	SUT PP CP (59c*59i) NACE Rev1&2	SUT PP CP & ConsP(2009) (59c*59i) NACE Rev1&2 & IO CP	SUT PP CP & ConsP(2009) (59c*59i) NACE Rev1&2	SUT PP CP (59c*59i) NACE Rev1&2	SUT PP CP (59c*59i) NACE Rev1&2	SUT PP CP (59c*59i) NACE Rev2	SUT PP CP (59c*59i) NACE Rev2		
Croatia										SUT BP CP (60c*60i) NACE Rev1	SUT BP CP (60c*60i) NACE Rev1							
Non-EU																		
Australia					SUT BP AUS$ (106i*106c) ANZSIC(1993)			SUT BP AUS$ (106i*106c) IOIG(200?)			SUT BP AUS$ (106i*106c) IOIG(2005)	SUT BP AUS$ (106i*106c) IOIG(2005)	SUT BP AUS$ (106i*106c) IOIG(2005)	SUT BP AUS$ (106i*106c) IOIG(2005)	SUT BP AUS$ (106i*106c) IOIG(2009)	SUT BP AUS$ (106i*106c) IOIG(2012)		
Brazil	SUT BP NC (110c*55i)	SUT BP NC (110c*55i)	SUT BP NC (80c*42i)	SUT BP NC (80c*42i)	SUT BP NC (80c*42i)	SUT BP NC (110c*55i)	SUT BP NC (110c*55i)	SUT BP NC (110c*55i)	SUT BP NC (110c*55i)	SUT BP NC (110c*55i)	SUT BP NC (110c*55i)	SUT BP NC (110c*55i)	SUT BP NC (110c*55i)	SUT BP NC (110c*55i)	SUT BP NC (110c*55i)			
Canada	IO BP? CAN$ (473c*123i) NAICS	IO BP? CAN$ (473c*123i) NAICS	IO BP? CAN$ (473c*123i) NAICS	IO BP? CAN$ (473c*123i) NAICS	IO BP? CAN$ (473c*123i) NAICS	IO BP? CAN$ (473c*123i) NAICS	IO BP? CAN$ (473c*123i) NAICS	IO BP? CAN$ (473c*123i) NAICS	IO BP? CAN$ (473c*123i) NAICS	IO BP? CAN$ (473c*123i) NAICS	IO BP? CAN$ (473c*123i) NAICS	IO BP? CAN$ (473c*123i) NAICS	IO BP? CAN$ (473c*123i) NAICS	IO BP? CAN$ (473c*123i) NAICS	IO BP CAN$ (473c*122i) NAICS	SUT BP CAN$ (473c*122i) NAICS		
Switzerland							SUT BP CHF (42c*42i)				SUT BP CHF (42c*42i)			SUT BP CHF (44c*44i)				
China			IO PRP (40c*40c)					IO PRP (40c*40c)					IO PRP (40c*40c)			IO PRP (40c*40c)		
Indonesia						IO NC Price? (175c*175i)			IO NC Price? (66c*66i)		IO NC Price? (175c*175i)			IO NC Price? (66c*66i)				
India					IO PP NC (130c*130c) & (130c*130i)					IO PP NC (130c*130c) & (130c*130i)			IO PP NC (130c*130c) & (130c*130i)	IO PP NC (130c*130c) & (130c*130i)				

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Japan	IO PP/PRP* (190c*190c) comp. Rev3.1 avai / SUT NC (108c*108c)	SUT NC (108c*108c)	SUT NC (108c*108c)	SUT NC (108c*108c)	SUT NC (108c*108c)	IO PP/PRP* (190c*190c) comp. Rev3.1 avai / SUT NC (108c*108c)	SUT NC (108c*108c)	SUT NC (108c*108c)	SUT NC (108c*108c)	SUT NC (108c*108c)	IO PP/PRP* (190c*190c) comp. Rev3.1 avai / SUT NC (108c*108c)	SUT NC (108c*108c)	SUT NC (108c*108c)	SUT NC (108c*108c)	SUT NC (108c*108c)			
South Korea	TT(IO) PRP (78c*78c)			TT(IO) PRP (78c*78c)		TT(IO) PRP (78c*78c)			TT(IO) BP/PRP (78c*78c)		TT(IO) PRP (78c*78c)	TT(IO) PRP (78c*78c)	TT(IO) PRP (78c*78c)	TT(IO) BP/PRP (78c*78c)	TT(IO) BP/PRP (78c*78c)	TT(IO) PRP (78c*78c)	TT(IO) PRP (78c*78c)	
Mexico									SUT PP (79c*79i)					SUT PP NC (262i*262i)				
Norway							SUT & IO PP € (59c*59i) NACE Rev1	SUT & IO PP € (59c*59i) NACE Rev1	SUT & IO PP € (59c*59i) NACE Rev1	SUT & IO PP € (59c*59i) NACE Rev1	SUT & IO PP € (59c*59i) NACE Rev1	SUT & IO PP € (59c*59i) NACE Rev1	SUT & IO PP € (59c*59i) NACE Rev1	SUT & IO PP € (59c*59i) NACE Rev2	SUT & IO PP € (59c*59i) NACE Rev2	SUT & IO PP € (59c*59i) NACE Rev2		
Russia				SUT S: BP U:PP (22c*22i)	SUT S: BP U:PP (22c*22i)	SUT S: BP U:PP (24c*24i)	SUT S: BP U:PP (24c*24i)	SUT S: BP U:PP (24c*24i)	SUT S: BP U:PP (23c*23i)	SUT S: BP U:PP (15c*15i)	SUT S: BP U:PP (15c*15i)	SUT S: BP U:PP (15c*15i)						
Turkey		SUT PRP CP NC (97c*97c)		SUT PRP CP NC (97c*97c)				SUT PRP CP NC (97c*97c) SUT CP (59c*59i) Nace Rev1										
Taiwan		TT PP NC$ (596i*596i / 160i*160i)			TT PP NC$ (160i*160i)		TT PP NC$ (610i*610i / 162i*162i)			TT PP NC$ 161i*161i)		TT PP NC$ (554i*554i / 166i*166i) & TT PP NC$ (52c*63i)	TT PP NC$ (52c*63i)	TT PP NC$ (52c*63i)	TT PP NC$ (52c*63i)	TT PP NC$ (52c*63i)	TT PP NC$ (52c*63i)	
United States				SUT PRP* NC (65i*65c), NAICS1*	SUT PRP NC (65i*65c), NAICS1	SUT PRP NC (65i*65c), NAICS1	SUT PRP NC (65i*65c), NAICS1	SUT PRP NC (65i*65c), NAICS2	SUT PRP NC (65i*65c), NAICS2	SUT PRP NC (65i*65c), NAICS2	SUT PRP NC (65i*65c), NAICS2	SUT PRP NC (65i*65c), NAICS2	SUT PRP NC (65i*65c), NAICS2	SUT PRP NC (65i*65c), NAICS2	SUT PRP NC (65i*65c), NAICS2	SUT PRP NC (65i*65c), NAICS2	SUT PRP NC (65i*65c), NAICS2	
South Afrika				SUT PP NC (95c*94i)	SUT PP NC (S:153c*94i, U: 95c*94i)	SUT PP NC (95c*94i)		SUT PP NC (95c*94i)			SUT PP NC (104c*171i)							

Notes:

Australia and India 2009-10 assigned to 2010

TT = Transactions table; SUT = supply and use table; IO = input output table

NC = in national currency

CP = current prices; BP = basic price; ConsP = Constant prices; PP = purchaser's prices; PRP = producer's prices

Appendix 3-A Land extension

Name	FAO code	DESIRE / SEC category	Industry code
Agave fibres nes	800	L_1_7	p01.g
Almonds, with shell	221	L_1_4	p01.d
Anise, badian, fennel, coriander	711	L_1_8	p01.h
Apples	515	L_1_4	p01.d
Apricots	526	L_1_4	p01.d
Areca nuts	226	L_1_4	p01.d
Artichokes	366	L_1_4	p01.d
Asparagus	367	L_1_4	p01.d
Avocados	572	L_1_4	p01.d
Bambara beans	203	L_1_4	p01.d
Bananas	486	L_1_4	p01.d
Barley	44	L_1_3	p01.c
Bastfibres, other	782	L_1_7	p01.g
Beans, dry	176	L_1_4	p01.d
Beans, green	414	L_1_4	p01.d
Beets for fodder	647	L_1_9	n.d.
Berries nes	558	L_1_4	p01.d
Blueberries	552	L_1_4	p01.d
Brazil nuts, with shell	216	L_1_4	p01.d
Broad beans, horse beans, dry	181	L_1_4	p01.d
Buckwheat	89	L_1_3	p01.c
Cabbage for fodder	644	L_1_9	n.d.
Cabbages and other brassicas	358	L_1_4	p01.d
Canary seed	101	L_1_3	p01.c
Carobs	461	L_1_4	p01.d
Carrots and turnips	426	L_1_4	p01.d
Carrots for fodder	648	L_1_9	n.d.
Cashew nuts, with shell	217	L_1_4	p01.d
Cashewapple	591	L_1_4	p01.d
Cassava	125	L_1_4	p01.d
Castor oil seed	265	L_1_5	p01.e
Cauliflowers and broccoli	393	L_1_4	p01.d
Cereals, nes	108	L_1_3	p01.c
Cherries	531	L_1_4	p01.d
Cherries, sour	530	L_1_4	p01.d
Chestnut	220	L_1_4	p01.d
Chick peas	191	L_1_4	p01.d
Chicory roots	459	L_1_4	p01.d
Chillies and peppers, dry	689	L_1_8	p01.h
Chillies and peppers, green	401	L_1_4	p01.d
Cinnamon (canella)	693	L_1_8	p01.h
Cloves	698	L_1_8	p01.h

Cocoa, beans	661	L_1_8	p01.h
Coconuts	249	L_1_5	p01.e
Coffee, green	656	L_1_8	p01.h
Cow peas, dry	195	L_1_4	p01.d
Cranberries	554	L_1_4	p01.d
Cucumbers and gherkins	397	L_1_4	p01.d
Currants	550	L_1_4	p01.d
Dates	577	L_1_4	p01.d
Eggplants (aubergines)	399	L_1_4	p01.d
Fibre crops nes	821	L_1_7	p01.g
Figs	569	L_1_4	p01.d
Flax fibre and tow	773	L_1_7	p01.g
Fonio	94	L_1_3	p01.c
Forage and silage, alfalfa	641	L_1_9	n.d.
Forage and silage, clover	640	L_1_9	n.d.
Forage and silage, grasses nes	639	L_1_9999	n.c.
Forage and silage, green oilseeds	642	L_1_9999	n.c.
Forage and silage, legumes	643	L_1_9	n.d.
Forage and silage, maize	636	L_1_9	n.d.
Forage and silage, rye grass	638	L_1_9999	n.c.
Forage and silage, sorghum	637	L_1_9	n.d.
Forage products	651	L_1_9	n.d.
Fruit, citrus nes	512	L_1_4	p01.d
Fruit, fresh nes	619	L_1_4	p01.d
Fruit, pome nes	542	L_1_4	p01.d
Fruit, stone nes	541	L_1_4	p01.d
Fruit, tropical fresh nes	603	L_1_4	p01.d
Garlic	406	L_1_4	p01.d
Ginger	720	L_1_8	p01.h
Gooseberries	549	L_1_4	p01.d
Grain, mixed	103	L_1_3	p01.c
Grapefruit (inc. pomelos)	507	L_1_4	p01.d
Grapes	560	L_1_4	p01.d
Groundnuts, with shell	242	L_1_5	p01.e
Hazelnuts, with shell	225	L_1_4	p01.d
Hemp tow waste	777	L_1_7	p01.g
Hempseed	336	L_1_5	p01.e
Hops	677	L_1_8	p01.h
Jojoba seed	277	L_1_5	p01.e
Jute	780	L_1_7	p01.g
Kapok fruit	310	L_1_999	n.c.
Karite nuts (sheanuts)	263	L_1_5	p01.e
Kiwi fruit	592	L_1_4	p01.d
Kola nuts	224	L_1_4	p01.d
Leeks, other alliaceous vegetables	407	L_1_4	p01.d
Lemons and limes	497	L_1_4	p01.d

Lentils	201	L_1_4	p01.d
Lettuce and chicory	372	L_1_4	p01.d
Linseed	333	L_1_5	p01.e
Lupins	210	L_1_4	p01.d
Maize	56	L_1_3	p01.c
Maize, green	446	L_1_4	p01.d
Mangoes, mangosteens, guavas	571	L_1_4	p01.d
Manila fibre (abaca)	809	L_1_7	p01.g
Maté	671	L_1_8	p01.h
Melons, other (inc.cantaloupes)	568	L_1_4	p01.d
Melonseed	299	L_1_5	p01.e
Millet	79	L_1_3	p01.c
Mushrooms and truffles	449	L_1_4	p01.d
Mustard seed	292	L_1_5	p01.e
Nutmeg, mace and cardamoms	702	L_1_8	p01.h
Nuts, nes	234	L_1_4	p01.d
Oats	75	L_1_3	p01.c
Oil, palm fruit	254	L_1_5	p01.e
Oilseeds nes	339	L_1_5	p01.e
Okra	430	L_1_4	p01.d
Olives	260	L_1_5	p01.e
Onions, dry	403	L_1_4	p01.d
Onions, shallots, green	402	L_1_4	p01.d
Oranges	490	L_1_4	p01.d
Papayas	600	L_1_4	p01.d
Peaches and nectarines	534	L_1_4	p01.d
Pears	521	L_1_4	p01.d
Peas, dry	187	L_1_4	p01.d
Peas, green	417	L_1_4	p01.d
Pepper (piper spp.)	687	L_1_8	p01.h
Peppermint	748	L_1_8	p01.h
Persimmons	587	L_1_4	p01.d
Pigeon peas	197	L_1_4	p01.d
Pineapples	574	L_1_4	p01.d
Pistachios	223	L_1_4	p01.d
Plantains	489	L_1_4	p01.d
Plums and sloes	536	L_1_4	p01.d
Popcorn	68	n.c.	n.c.
Poppy seed	296	L_1_5	p01.e
Potatoes	116	L_1_4	p01.d
Pulses, nes	211	L_1_4	p01.d
Pumpkins for Fodder	645	L_1_9999	n.c.
Pumpkins, squash and gourds	394	L_1_4	p01.d
Pyrethrum, dried	754	L_1_8	p01.h
Quinces	523	L_1_4	p01.d
Quinoa	92	L_1_3	p01.c

Ramie	788	L_1_7	p01.g
Rapeseed	270	L_1_5	p01.e
Raspberries	547	L_1_4	p01.d
Rice, paddy	27	L_1_1	p01.a
Roots and tubers, nes	149	L_1_4	p01.d
Rubber, natural	836	L_1_8	p01.h
Rye	71	L_1_3	p01.c
Safflower seed	280	L_1_5	p01.e
Seed cotton	328	L_1_999	n.c.
Sesame seed	289	L_1_5	p01.e
Sisal	789	L_1_7	p01.g
Sorghum	83	L_1_3	p01.c
Soybeans	236	L_1_5	p01.e
Spices, nes	723	L_1_8	p01.h
Spinach	373	L_1_4	p01.d
Strawberries	544	L_1_4	p01.d
String beans	423	L_1_4	p01.d
Sugar beet	157	L_1_6	p01.f
Sugar cane	156	L_1_6	p01.f
Sugar crops, nes	161	L_1_6	p01.f
Sunflower seed	267	L_1_5	p01.e
Swedes for fodder	649	L_1_9	n.d.
Sweet potatoes	122	L_1_4	p01.d
Tallowtree seed	305	L_1_5	p01.e
Tangerines, mandarins, clementines, satsumas	495	L_1_4	p01.d
Taro (cocoyam)	136	L_1_4	p01.d
Tea	667	L_1_8	p01.h
Tea nes	674	L_1_8	p01.h
Tobacco, unmanufactured	826	L_1_8	p01.h
Tomatoes	388	L_1_4	p01.d
Triticale	97	L_1_3	p01.c
Tung nuts	275	L_1_5	p01.e
Turnips for fodder	646	L_1_9	n.d.
Vanilla	692	L_1_8	p01.h
Vegetables and roots fodder	655	L_1_9	n.d.
Vegetables, fresh nes	463	L_1_4	p01.d
Vegetables, leguminous nes	420	L_1_4	p01.d
Vetches	205	L_1_4	p01.d
Walnuts, with shell	222	L_1_4	p01.d
Watermelons	567	L_1_4	p01.d
Wheat	15	L_1_2	p01.b
Yams	137	L_1_4	p01.d
Yautia (cocoyam)	135	L_1_4	p01.d
Cottonseed	329	L_1_5	p01.e
Cotton lint	767	L_1_7	p01.g
Kapokseed in Shell	311	L_1_5	p01.e

Kapok Fibre	778 L_1_7	p01.g

n.d. not defined; n.c. not considered

Appendix 4-A: Checks at import

Introduction

The relational data model implemented in a relational database management system makes sure that no data get lost or are changed without losing consistency after the data have been imported into the database. The data model determines the logical structure of the database and determines in which manner data can be stored, organized, and manipulated. The data to be imported should conform to the format that is imposed by the data model. For instance no value can be imported if it is not related to one of the prescribed units or country codes etc. The data model for EXIOBASE is not discussed here. Only the format prescribed by the data model for the data to be imported is discussed. If the data to be imported do not pass this format check they cannot be imported.

For each distinguishable table in EXIOBASE; e.g. intermediate use table, supply table, final use table etc, a specific format has been defined. One may wonder why for every table a specific format is needed. The reason is that each table contains different information and different relations to other data. For instance the final use table will relate to the table with data on the final use categories while the intermediate use table relates to the table with data on industry sector categories.

The data to be imported should be delivered in the form of Excel files each Excel file containing one sheet of data, named "data". The Excel file might either be in ".xls" or ".xlsx" format. Each row on the data sheet in Excel contains one value to be imported. Below the format is given for all the data to be imported and this prescribed format is checked before import. In each table the format description "Select xxx" means that this item must be selected from one of the prescribed classifications.

Intermediate use data format

In the use table all intermediate use of products by industries is recorded. Domestic use, import use as well as all margin tables both in monetary terms as well as physical terms are recorded in this table. On each row the following items are to be given:

- the year for which use is recorded
- the code for the country in which the industry is located (destination country)
- the code for the industry for which the use of a certain product is recorded
- the code for the product that is used by a certain industry
- the kind of use to be recorded (e.g. domestic use, import use, etc.) or one of the margin layers.
- the use amount. Negatives are allowed because margin layers, e.g. taxes less subsidies, may be negative
- the unit in which the use is recorded

The current version of the import template is designed to import monetary data and physical intermediate use tables.

Intermediate use			
Column heading	Format	Required	Unique
AccountingYear	integer	yes	no

CountryCode	select country code	yes	no
IndustryTypeCode	select industry type code	yes	no
ProductTypeCode	select product type code	yes	no
UseTypeName	select use type name	yes	no
Amount	float <> 0	yes	no
UnitCode	select unit code	yes	no

Supply data format

In the supply table the total supply of a product by a certain industry is recorded both in monetary terms as well as physical term. On each row of the import file, the following items are to be given:

- year for which the supply is recorded
- the code of the country in which the industry is located (origin country)
- the code for the industry for which the supply of a certain product is recorded
- the code for the product that is supplied by a certain industry
- the kind of supply to be recorded i.e. monetary, mass or energy etc.
- the supply amount. Only positive floating point values are allowed.
- the unit in which the supply is recorded

This import template can be used to import both monetary as well as physical supply tables.

Supply			
Column heading	Format	Required	Unique
AccountingYear	integer	yes	no
CountryCode	select country code	yes	no
IndustryTypeCode	select industry type code	yes	no
ProductTypeCode	select product type code	yes	no
SupplyTypeName	select supply type name	yes	no
Amount	float > 0	yes	no
UnitCode	select unit code	yes	no

Factor input data format

In this table the factor input data which consists both of value added items and other factor input information per industry sector are recorded. Value added items must at least be recorded in monetary units. The other items part of the factor inputs, e.g. employed persons, can be recorded in physical units. On each row of the import file, the following items are to be given:

- factor input type code
- the industry type code for which we want to give a factor input amount
- the country code in which the industry is located
- the year for which the factor input is recorded
- the amount

- the unit in which the factor input is specified

Factor input			
Column heading	Format	Required	Unique
FactorInputTypeCode	select factor input type code	yes	no
IndustryTypeCode	select industry type code	yes	no
CountryCode	select country code	yes	no
AccountingYear	integer	yes	no
Amount	float <> 0	yes	no
UnitCode	select unit code	yes	no

Final demand data format

The final demand table records all final uses of products both in monetary as well as physical terms. On each row of the import file, the following items are to be given:

- code of final use category for which an amount is recorded
- the product type code of the product category for which a final use is recorded
- name for the different uses categories to be distinguished in the database, e.g. domestic use, import use, physical use.
- the code for the country where the final use of the product takes place
- the year in which the final use takes place
- the final use amount. Negative floating point values are allowed in this table but no zero values.
- the unit in which the final use amount is recorded

Final demand			
Column heading	Format	Required	Unique
FinalDemandTypeCode	select finaldemand type code	yes	no
ProductTypeCode	select product type code	yes	no
UseTypeName	select use type name	yes	no
CountryCode	select country code	yes	no
AccountingYear	integer	yes	no
Amount	float <> 0	yes	no
UnitCode	select unit code	yes	no

Export trade data format

The export trade table contains information on the destination of products exported from a country. It is specified what fraction of a product is exported to a certain destination country. On each row of the import file, the following items are to be given:

- the code for the product that is exported from the country
- The country code for the exporting country
- year in which the export takes place
- The country code of the destination country
- The fraction of the total amount of product form the country that is exported to the destination country.
- Use the code "dimensionless" for fractions

Export trade			
Column heading	Format	Required	Unique
ProductTypeCode	select product type code	yes	no
CountryCode	select country code	yes	no
AccountingYear	integer	yes	no
DestinationCountryCode	select country code	yes	no
Fraction	float 0 - 1	yes	no
UnitCode	"dimensionless"	yes	no

Import trade data format

The import trade table contains information on the origin of products imported into a country. It is specified what fraction of a product is imported from a certain origin country. On each row of the import file, the following items are to be given:

- the code for the product that is imported into the country with CountryCode
- The country code for the importing country
- year in which the import takes place
- The country code for the origin country
- The fraction of the total amount of product imported into the country that is imported from this origin country.
- Use dimensionless for fractions

Import trade			
Column heading	Format	Required	Unique
ProductTypeCode	select product type code	yes	no
CountryCode	select country code	yes	no
AccountingYear	integer	yes	no
OriginCountryCode	select country code	yes	no
Fraction	float 0 - 1	yes	no
UnitCode	"dimensionless"	yes	no

Industry emissions data format

In the industry emissions table the environmental emissions[10] from industry sectors is recorded, including the environmental compartment in which the substance is emitted or discarded. On each row of the import file, the following items are to be given:

- full substance name
- emission compartment
- industry type code of the emitting industry sector
- country in which the industry sector is located.
- year in which the emission takes place
- the amount of emission
- the unit in which the emission is reported.

Emissions			
Column heading	Format	Required	Unique
SubstanceName	select substance name	yes	no
CompartmentName	select compartment name	yes	no
IndustryTypeCode	select industry type code	yes	no
CountryCode	select country code	yes	no
AccountingYear	integer	yes	no
Amount	float > 0	yes	no
UnitCode	select unit code	yes	no

Industry resource use data format

In the industry resource use table the environmental resources[10] used by industry sectors is recorded, including the environmental compartment from which the resource is taken. On each row of the import file, the following items are to be given:

- full extraction name
- the environmental compartment from which the extraction takes place
- the code for the industry that carries out the extraction
- country in which the industry sector is located
- year in which the extraction takes place
- the extraction amount
- the unit in which the extraction is specified

Column heading	Format	Required	Unique
ExtractionTypeName	select extraction type name	yes	no
CompartmentName	select compartment name	yes	no
IndustryTypeCode	select industry type code	yes	no
CountryCode	select country code	yes	no
AccountingYear	integer	yes	no

[10] To be able to be consistent with LCA only elementary flows into the environment are recorded here. This may be matter or energy leaving the product system.

Amount	float > 0	yes	no
UnitCode	select unit code	yes	no

Industry material use data format

In the industry material use table the physical flows associated with industry sectors is recorded other than those that are already in the physical supply – use tables. The data in this material use table are different from those in the resource use table in the sense that the physical flows are not elementary flows or it is unclear if they are an elementary flow. On each row of the import file, the following items are to be given:

- full physical type name
- the industry code for which the material use is recorded
- country code in which the industry is located
- year in which the material use takes place
- the amount of material use
- the unit in which the material use is specified

Material use			
Column heading	Format	Required	Unique
PhysicalTypeName	select physical type name	yes	no
IndustryTypeCode	select industry type code	yes	no
CountryCode	select country code	yes	no
AccountingYear	integer	yes	no
Amount	float > 0	yes	no
UnitCode	select unit code	yes	no

Final demand emissions data format

In the final demand emissions table the environmental emissions associated with the final use of products is recorded. Typically these are emissions from the combustion of fossil fuels in private households or private use of automobiles. On each row of the import file, the following items are to be given:

- full substance name
- emission compartment name
- code of final demand type for which an amount is recorded
- the country code where the emission associated with this final demand takes place
- the year in which the final use takes place
- the emission amount
- the unit in which the emission is reported

Final demand emissions			
Column heading	Format	Required	Unique
SubstanceName	select substance name	yes	no
CompartmentName	select compartment name	yes	no

FinalDemandTypeCode	select finaldemand type code	yes	no
CountryCode	select country code	yes	no
AccountingYear	integer	yes	no
Amount	float > 0	yes	no
UnitCode	select unit code	yes	no

Final demand material data format

In the final demand material table the physical use of materials by final users is recorded other than those that are already in the physical supply – use tables. On each row of the import file, the following items are to be given:

- full physical type name
- code of final demand type for which an amount is recorded
- the country code where the material use associated with this final demand takes place
- the year in which the material use takes place
- the material amount
- the unit in which the material use is reported

Final demand emissions			
Column heading	Format	Required	Unique
PhysicalTypeName	select physical type name	yes	no
FinalDemandTypeCode	select finaldemand type code	yes	no
CountryCode	select country code	yes	no
AccountingYear	integer	yes	no
Amount	float > 0	yes	no
UnitCode	select unit code	yes	no

Materials associated with product production data format

In a regular supply-use framework, extensions to the supply-use framework are extensions that are associated with industry activities or final use. This dictates that the extensions are gathered per industry activity. However sometimes it is much more easy to find information on environmental emissions, resources or material use associated with product output. In these cases it is more convenient to record the basic information in an extension by product format instead of an extension by industry format. The association of material use with a product might be strange because products in itself don't do anything. It is the industry or final consumer activity that carry out processes and in the course of doing so have emissions, need inputs and outputs. However the product extension tables are in fact *product production* extensions. The production of the product may take place in different industry sectors as defined by the supply table. The product production and its associated extensions can be transformed in industry extensions by multiplication with the supply table.

In this table the material use per product type can be recorded. On each row of the import file, the following items are to be given:

- full physical type name
- the product code for which we want to give a material
- country code in which the product production is located
- year in which the material use takes place
- the amount of material use
- the unit in which the material use is specified

Product production material use			
Column heading	Format	Required	Unique
PhysicalTypeName	select physical type name	yes	no
ProductTypeCode	select product type code	yes	no
CountryCode	select country code	yes	no
AccountingYear	integer	yes	no
Amount	float > 0	yes	no
UnitCode	select unit code	yes	no

Resource use associated with product production data format

In this table the environmental resource use with product production can be recorded. . On each row of the import file, the following items are to be given: full extraction name

- the environmental system from which the extraction takes place
- the code for the product that carries out the extraction
- country in which the product production takes place
- year in which the extraction takes place
- the extraction amount
- the unit in which the extraction is specified

Product production resources use			
Column heading	Format	Required	Unique
ExtractionTypeName	select extraction type name	yes	no
CompartmentName	select compartment name	yes	no
ProductTypeCode	select product type code	yes	no
CountryCode	select country code	yes	no
AccountingYear	integer	yes	no
Amount	float > 0	yes	no
UnitCode	select unit code	yes	no

Emissions associated with product production data format

In this table the environmental emissions associated with product production can be recorded. On each row of the import file, the following items are to be given: full extraction name

- full substance name
- emission compartment name
- product production associated with the emission
- emissions country
- year in which the emission takes place
- the amount of emission
- the unit in which the emission is reported.

Product production emissions			
Column heading	Format	Required	Unique
SubstanceName	select substance name	yes	no
CompartmentName	select compartment name	yes	no
ProductTypeCode	select product type code	yes	no
CountryCode	select country code	yes	no
AccountingYear	integer	yes	no
Amount	float > 0	yes	no
UnitCode	select unit code	yes	no

Physical imports data format

The physical supply –use tables are a bit different from the monetary supply –use tables in set-up. The monetary (intermediate and final) use table distinguish domestic use from import use. Import of products in monetary terms into a country is recorded in the intermediate and final use table. The physical use data are also stored in the intermediate and final use table but no distinction is made between domestic use and import use, only total physical use by an intermediate user or final user is recorded. The import of products in physical terms can therefore not be extracted from the use tables. Instead in the physical supply-use tables import of products into a country in physical terms is available as a separate vector. This vector of physical imports can be stored in this table. On each row of the import file, the following items are to be given:

- full substance name
- emission compartment name
- product production associated with the emission
- emissions country
- year in which the emission takes place
- the amount of emission
- the unit in which the emission is reported.

physical import			
Column heading	Format	Required	Unique
ProductTypeCode	select product type code	yes	no

CountryCode	select country code	yes	no
AccountingYear	integer	yes	no
Amount	float > 0	yes	no
UnitCode	select unit code	yes	no
UseTypeName	select use type name	yes	no

Appendix 4-B: Checks at country level

Introduction

The automated checks at the level of the individual country SUTs are implemented in a small program (programmed in Java) and can run without further user interaction. The results of the checks are exported to a check report (in the form of an Excel file) in which all values that look suspicious are recorded or where calculated balance, gdp etc are recorded. This check report can help debugging data and may serve as an description of the current dataset.

The checks are divided into 11 different categories. The user is able to select for which category the checks have to be carried out. The 11 categories are:

1. trade data
2. trade data versus import and export data
3. supply - use data
4. balance
5. gdp
6. final demand
7. factor inputs
8. material use
9. environmental resources data
10. environmental emission data
11. physical supply - use data

Each category consists of several checks. A total of 39 checks are implemented. The implementation is such that with very little additional programming new checks can be added. The checks are described per category in more detail below.

Trade data checks

Name	Description
Sum import fractions	The sum of the import fractions for one product in a country is calculated here. This sum must be 1. Any other value means an error in the trade fraction data. Running exiobase with these vales will create an erronous country linked SUT
Sum export fractions	The sum of the export fractions for one product out of a country are calculated here. This sum must be 1. Any other value 1 means an error in the trade fraction data.
Countries without import according the trade data	Countries without reported import don't exist. It means that there is an error in the database and likely means that part of the import of data has failed or was missed.
Countries without export according the trade data	Countries without reported export don't exist. It means that there is an error in the database and likely means that part of the import of data has failed or was missed.
Products not imported into a country according the trade data	Gives a list of all products for all countries that are not imported into a country which means that the product is not used at all in a country or that there is only domestic use of

	the product according the trade data. Can be used for debugging and does not necessarily mean that there is an error in the trade data.
Products not exported from a country according the trade data	Gives a list of all products for all countries that are not exported from a country which means that the product is not produced at all in a country or that there is only domestic use of the product according the trade data. Can be used for debugging and does not necessarily mean that there is an error in the trade data.
Imported products that are not exported according the trade data	A product imported into a country from a certain origin country as reported in the importfractions table should be matched in the exportfractions table. If it is not reported this indicates an inconsistency in the trade data. Perhaps an export fraction is missing or an import of an product was not registered correctly. Such an inconsistency does not lead to problems in the calculations but might indicate areas where the trade fraction data could be improved.
Exported products that are not imported according the trade data	A product exported from a country to a certain destination country as reported in the exportfractions table should be matched in the importfractions table. If it is not reported it clearly indicates an inconsistency. Perhaps the import fraction stable misses data or the exporting country did not record its export correctly. Such an inconsistency does not lead to problems in the calculations but might indicate areas where the trade fraction data could be improved.

Trade data versus import and export data checks

Name	Description
Exported products that have no export trade fractions	A product that is exported from a country should have information in the trade statistics about its destination country. Apparently this information is missing. Inconsistencies are expected here because the SUTs and trade statistics come from different sources. These inconsistencies are resolved while trade – linking.
Traded products that are not exported	According the export trade fractions a product is exported from a country but the export data don't have any information on this. This a clear inconsistency in the data. Inconsistencies are expected here because the SUTs and trade statistics come from different sources. Does not give problems while trade-linking.
Imported products that have no import trade fractions	A product is imported into a country and the import trade fractions should have information on the origin countries of the product. Apparently this information is missing.

	Inconsistencies are expected here because the SUTs and trade statistics come from different sources. These inconsistencies are resolved while trade – linking.
Traded products that are not imported	According the import trade fractions a product is imported into a country but the import data don't have any information on this. Import includes products that are exported again (re-exports). This a clear inconsistency in the data. Inconsistencies are expected here because the SUTs and trade statistics come from different sources. Does not give problems while trade-linking.

Supply – use tables checks

Name	Description
Use by industry but no supply	The use table contains use of products by a certain industry but the industry does not have any supply. Industry use is defined as domestic use and/or import use. This is an error in the use or supply table.
Supply by industry but no use	The supply table indicates that a certain industry supplies products but it does not use any products according the use table. Industry use is defined as domestic use and/or import use. Most likely an error in the supply or use table. For certain industry categories this may be correct, e.g. "private households with employed persons"
Taxes but no supply or use	An industry has no supply or use of a product but nontheless there is a value for taxes less subsidies for this product. Industry use is defined as domestic use and/or import use and/or total use. It is a clear inconsistency in the data but it does not affect the creation of the international SUT because it mostly uses the data in basic prices.
Negative total supply	The total supply of a product in a country is negative. The total supply is calculated as the row sum of the supply plus the import of the product in a country. Could be caused by large negative stock changes and/or changes in valuables. Likely to be an issue with the data.
Negatives in use table	Negative values in the use table. If these are present in the domestic use or import use layer it might be a problem.
Negatives in use table at purchaser price level	The use of a product by an industry when expressed in purchaser price is negative. This is likely a data problem.
Negatives in supply table	Negative values in the supply table. This is likely a problem in set-up of these tables.
Imported products that are only exported	There is only an import use value for exported products meaning that this product is only imported to be exported

according SUTs	again. Domestic industries don't use this imported product and final users don't use this imported product. Not directly a problem but is unusual.
Products not imported according SUTs	This product is not imported into a country according the information in the SUT.
Global import and export	Gives the sum of exports and imports per product on a global level. Imports are in c.i.f. and exports are in f.o.b. prices. The difference should be small (order of few percent). However it is likely that these differences are larger because of the different sources to compile these data. Differences are resolved during trade-linking.

Balance check

Name	Description
Balanced industry output	The single country supply tables that form the basis of the trade-linked international SUT should be balanced which is checked here for total industry output. It's a high level check that involves quering final demand, use, supply and factor input tables. Any deviation from a full balanced table indicates that something might be wrong with the tables.
Balanced product supply	The single country supply tables that form the basis of the trade-linked international SUT should be balanced which is checked here for total product supply. It's a high level check that involves quering final demand, use, supply and factor input tables. Any deviation from a full balanced table indicates that something might be wrong with the tables.

GDP check

Name	Description
GDP according production approach	The GDP of the countries according the production approach at basic prices. Should equal GDP calculated from different viewpoints. If not there is an error in the data.
GDP according income approach	The GDP of the countries according the income approach at basic prices. Should equal GDP calculated from different viewpoints. If not there is an error in the data.
GDP according expenditure approach	The GDP of the countries according the expenditure approach at basic prices. Should equal GDP calculated from different viewpoints. If not there is an error in the data.

Final demand check

Name	Description
Negatives in final demand table	Searches for negatives in the domestic or import use layers of the final demand table. There should be no negatives in the final demand categories for private consumers, public consumers, consumption by non-profit organisations serving households and exports. Negatives in other final demand categories (e.g. changes in inventories and valuables) is not a problem.
Negative final demand at purchaser price level	Searches for negatives in the final demand for a product at purchaser price level. There should be no negatives in the final demand categories for private consumers, public consumers, consumption by non-profit organisations serving households and exports. If any negatives occur in these categories it indicates a problem but the calculation of the international supply – use table is not affected as long as the basic price information is correct.
Negative total domestic final demand at basic price level	The total domestic final demand for a product at basic price level is negative. Might be caused by large negative changes in inventories and/or valuables which is a problem.

Factor inputs check

Name	Description
Factor input into industry but no supply	This check searches for cases where an industry sector has factor inputs but no domestic supply. Probably the factor inputs were not allocated correctly. Does not affect the calculations. Factor inouts are dropped silently.

Material use check

Name	Description
Material use by industry but no supply	This check searches for cases where and industry sector has material inputs but no domestic supply. Probably the material inputs were not allocated correctly. Does not affect the calculations. Material inputs are dropped silently.
Product material use but no product supply	There are inputs of material connected to product use while there is no domestic supply of that product.

Environmental resource use check

Name	Description
Environmental resource use by industry but no supply	This check searches for cases where and industry sector has environmental resource use but no domestic supply. Probably the environmental resource use was not allocated correctly. Does not affect the calculations. Environmental resource use is dropped silently for this industry sector.
Environmental resource use connected to product but no product supply	There are inputs of environmental resources connected to a product while there is no domestic supply of that product. Does not affect the calculations.

Environmental emission check

Name	Description
Environmental emissions from industry sector but no supply	This check searches for cases where and industry sector has environmental emisisons but no domestic supply. Probably the emissions were not allocated correctly. Does not affect the calculations. Environmental emissions are dropped silently for this industry sector.
Environmental emissions connected to product but no supply	There are emissions connected to a product group while there is no domestic supply of that product. Does not affect the calculations.

Physical supply-use tables

Name	Description
Global import and export of energy	A list of global import and export of products in energy terms
Global import and export of mass	A list of global import and export of products in mass terms

Outlier detection

A tool has been built (programmed in Java) that allows for outlier detection. Outliers are defined as economic/environmental inputs or emissions from an industry sector in a country that are high or low compared to the same industry sectors in the other countries. These economic/environmental inputs or emissions of the industry sectors are first normalized with respect to the size of the supply of the industry sectors. Normalisation is done by dividing the flows with the total supply of the industry sector

which results in expressing them as intensity e.g, kg CO_2 emission per million euro supply from the car manufacturing industry. Assuming that the industry sectors use comparable technology in the different countries one would expect more or less similar intensities in the different countries. If the technology of the industry sectors is disimilar in the various countries outlier detection in this way is not possible. Again is here is the question of what constitutes a good reference. For the moment it is the assemble of all data for all countries but it might be better to make subsets of countries.

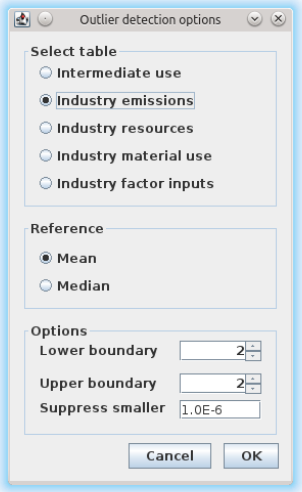
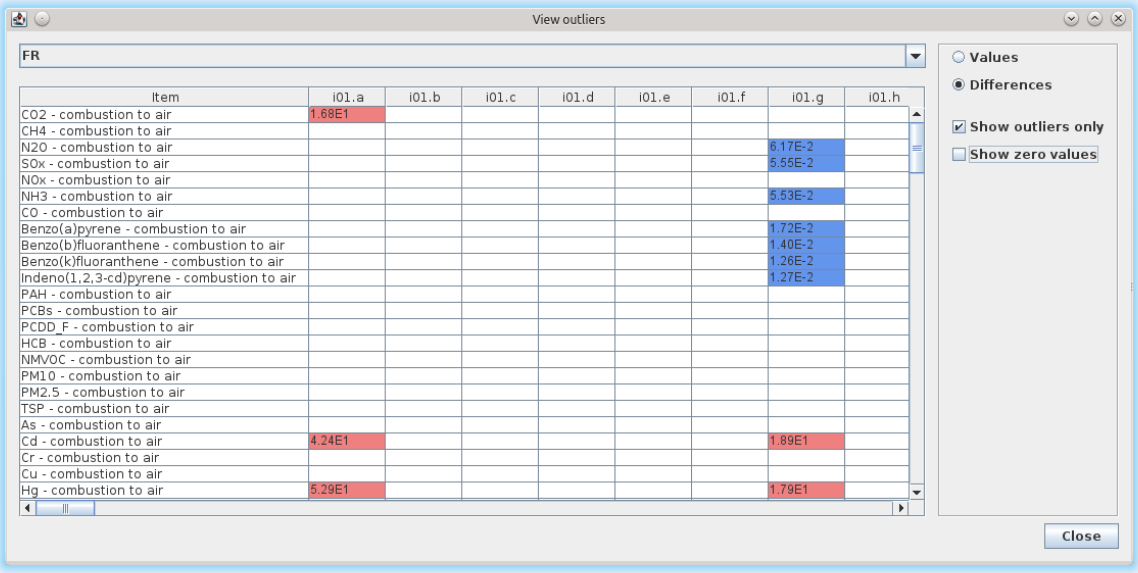


Figure 8 Screenshot of the start-up of the outlier detection tool with options to set the type of reference, lower and upper boundaries and possibility to suppress results for very small values.

When the outlier detection tool is started it asks which table in EXIOBASE has to be analysed, see Figure 8. Furthermore the type of reference can be chosen. It can be the average or the median value of the coefficients. Notice that the average and median will skip zero values. The median is probably the preferred choice for outlier detection as it is not influenced by single extreme values in the dataset. Then the lower and upper boundary of the normal range of values can be set. These are introduced as multiplication factors. Very small values in the table can be excluded from the analyis by setting a cut-off value. After clicking OK the results of the analysis are presented, see Figure 5.

The results of the outlier detection can be shown in different ways. First one can select to show the results for different countries. In Figure 5, results for France are shown. It also possible to show the calculated reference values. More interesting it is possible to show in how many countries a particular flow occurs excluding countries in which the sector does not exist.

The outliers as defined by the lower and upper boundaries set at start up of the tool are highlighted: red indicates values above the upper boundary and blue below the lower boundary. It is possible to show only outliers or all values including zero values.



Item	i01.a	i01.b	i01.c	i01.d	i01.e	i01.f	i01.g	i01.h
CO2 - combustion to air	1.68E1							
CH4 - combustion to air								
N2O - combustion to air							6.17E-2	
SOx - combustion to air							5.55E-2	
NOx - combustion to air								
NH3 - combustion to air							5.53E-2	
CO - combustion to air								
Benzo(a)pyrene - combustion to air							1.72E-2	
Benzo(b)fluoranthene - combustion to air							1.40E-2	
Benzo(k)fluoranthene - combustion to air							1.26E-2	
Indeno(1,2,3-cd)pyrene - combustion to air							1.27E-2	
PAH - combustion to air								
PCBs - combustion to air								
PCDD_F - combustion to air								
HCB - combustion to air								
NMVOC - combustion to air								
PM10 - combustion to air								
PM2.5 - combustion to air								
TSP - combustion to air								
As - combustion to air								
Cd - combustion to air	4.24E1						1.89E1	
Cr - combustion to air								
Cu - combustion to air								
Hg - combustion to air	5.29E1						1.79E1	

Figure 5 Screenshot of the outlier detection tool, showing the emission coefficients for France that are suspected to be outliers. The median of emission coefficients for all countries is taken as reference. Emission coefficients that are a factor 10 higher (indicated in red) or a factor 10 lower (indicated in blue) are highlighted together with the actual difference from the median value. All other values are hidden.

Our experience is that - even with quite wide boundary settings - a lot of outliers pop-up making identification of real data problems impossible. The problem stems from not having a proper reference value. Price level differences between countries, heterogeneity of the industry sectors among different countries all make it very difficult to determine what is a reasonable value and what is not.

Appendix 4-C: Product classification

Code	Name	Layer
p01.a	Paddy rice	Mass
p01.b	Wheat	Mass
p01.c	Cereal grains nec	Mass
p01.d	Vegetables, fruit, nuts	Mass
p01.e	Oil seeds	Mass
p01.f	Sugar cane, sugar beet	Mass
p01.g	Plant-based fibers	Mass
p01.h	Crops nec	Mass
p01.i	Cattle	Mass
p01.j	Pigs	Mass
p01.k	Poultry	Mass
p01.l	Meat animals nec	Mass
p01.m	Animal products nec	Mass
p01.n	Raw milk	Mass
p01.o	Wool, silk-worm cocoons	Mass
p01.w.1	Manure (conventional treatment)	Mass
p01.w.2	Manure (biogas treatment)	Mass
p02	Products of forestry, logging and related services	Mass
p05	Fish and other fishing products; services incidental of fishing	Mass
p10.a	Anthracite	Mass
p10.b	Coking Coal	Mass
p10.c	Other Bituminous Coal	Mass
p10.d	Sub-Bituminous Coal	Mass
p10.e	Patent Fuel	Mass
p10.f	Lignite/Brown Coal	Mass
p10.g	BKB/Peat Briquettes	Mass
p10.h	Peat	Mass
p11.a	Crude petroleum and services related to crude oil extraction, excluding surveying	Mass
p11.b	Natural gas and services related to natural gas extraction, excluding surveying	Mass
p11.b.1	Natural Gas Liquids	Mass
p11.c	Other Hydrocarbons	Mass
p12	Uranium and thorium ores	Monetary
p13.1	Iron ores	Mass
p13.20.11	Copper ores and concentrates	Mass
p13.20.12	Nickel ores and concentrates	Mass
p13.20.13	Aluminium ores and concentrates	Mass
p13.20.14	Precious metal ores and concentrates	Mass

p13.20.15	Lead, zinc and tin ores and concentrates	Mass
p13.20.16	Other non-ferrous metal ores and concentrates	Mass
p14.1	Stone	Mass
p14.2	Sand and clay	Mass
p14.3	Chemical and fertilizer minerals, salt and other mining and quarrying products n.e.c.	Mass
p15.a	Products of meat cattle	Mass
p15.b	Products of meat pigs	Mass
p15.c	Products of meat poultry	Mass
p15.d	Meat products nec	Mass
p15.e	products of Vegetable oils and fats	Mass
p15.f	Dairy products	Mass
p15.g	Processed rice	Mass
p15.h	Sugar	Mass
p15.i	Food products nec	Mass
p15.j	Beverages	Mass
p15.k	Fish products	Mass
p16	Tobacco products	Mass
p17	Textiles	Mass
p18	Wearing apparel; furs	Mass
p19	Leather and leather products	Mass
p20	Wood and products of wood and cork (except furniture); articles ...	Mass
p20.w	Wood material for treatment, Re-processing of secondary wood material ...	Mass
p21.1	Pulp	Mass
p21.w.1	Secondary paper for treatment, Re-processing of secondary paper into ...	Mass
p21.2	Paper and paper products	Mass
p22	Printed matter and recorded media	Mass
p23.1.a	Coke Oven Coke	Mass
p23.1.b	Gas Coke	Mass
p23.1.c	Coal Tar	Mass
p23.20.a	Motor Gasoline	Mass
p23.20.b	Aviation Gasoline	Mass
p23.20.c	Gasoline Type Jet Fuel	Mass
p23.20.d	Kerosene Type Jet Fuel	Mass
p23.20.e	Kerosene	Mass
p23.20.f	Gas/Diesel Oil	Mass
p23.20.g	Heavy Fuel Oil	Mass
p23.20.h	Refinery Gas	Mass
p23.20.i	Liquefied Petroleum Gases (LPG)	Mass
p23.20.j	Refinery Feedstocks	Mass
p23.20.k	Ethane	Mass
p23.20.l	Naphtha	Mass
p23.20.m	White Spirit & SBP	Mass

p23.20.n	Lubricants	Mass
p23.20.o	Bitumen	Mass
p23.20.p	Paraffin Waxes	Mass
p23.20.q	Petroleum Coke	Mass
p23.20.r	Non-specified Petroleum Products	Mass
p23.3	Nuclear fuel	Monetary
p24.a	Plastics, basic	Mass
p24.a.w	Secondary plastic for treatment, Re-processing of secondary plastic into ...	Mass
p24.b	N-fertiliser	Mass
p24.c	P- and other fertiliser	Mass
p24.d	Chemicals nec	Mass
p24.e	Charcoal	Mass
p24.f	Additives/Blending Components	Mass
p24.g	Biogasoline	Mass
p24.h	Biodiesels	Mass
p24.i	Other Liquid Biofuels	Mass
p25	Rubber and plastic products	Mass
p26.a	Glass and glass products	Mass
p26.w.1	Secondary glass for treatment, Re-processing of secondary glass into ...	Mass
p26.b	Ceramic goods	Mass
p26.c	Bricks, tiles and construction products, in baked clay	Mass
p26.d	Cement, lime and plaster	Mass
p26.d.w	Ash for treatment, Re-processing of ash into clinker	Mass
p26.e	Other non-metallic mineral products	Mass
p27.a	Basic iron and steel and of ferro-alloys and first products thereof	Mass
p27.a.w	Secondary steel for treatment, Re-processing of secondary steel into new steel	Mass
p27.41	Precious metals	Mass
p27.41.w	Secondary preciuos metals for treatment, Re-processing of secondary ...	Mass
p27.42	Aluminium and aluminium products	Mass
p27.42.w	Secondary aluminium for treatment, Re-processing of secondary ...	Mass
p27.43	Lead, zinc and tin and products thereof	Mass
p27.43.w	Secondary lead for treatment, Re-processing of secondary lead into new lead	Mass
p27.44	Copper products	Mass
p27.44.w	Secondary copper for treatment, Re-processing of secondary copper into ...	Mass
p27.45	Other non-ferrous metal products	Mass
p27.45.w	Secondary other non-ferrous metals for treatment, Re-processing of ...	Mass
p27.5	Foundry work services	Monetary
p28	Fabricated metal products, except machinery and equipment	Mass
p29	Machinery and equipment n.e.c.	Mass
p30	Office machinery and computers	Mass
p31	Electrical machinery and apparatus n.e.c.	Mass

p32	Radio, television and communication equipment and apparatus	Mass
p33	Medical, precision and optical instruments, watches and clocks	Mass
p34	Motor vehicles, trailers and semi-trailers	Mass
p35	Other transport equipment	Mass
p36	Furniture; other manufactured goods n.e.c.	Mass
p37	Secondary raw materials	Monetary
p37.w.1	Bottles for treatment, Recycling of bottles by direct reuse	Mass
p40.11.a	Electricity by coal	Energy
p40.11.b	Electricity by gas	Energy
p40.11.c	Electricity by nuclear	Energy
p40.11.d	Electricity by hydro	Energy
p40.11.e	Electricity by wind	Energy
p40.11.f	Electricity by petroleum and other oil derivatives	Energy
p40.11.g	Electricity by biomass and waste	Energy
p40.11.h	Electricity by solar photovoltaic	Energy
p40.11.i	Electricity by solar thermal	Energy
p40.11.j	Electricity by tide, wave, ocean	Energy
p40.11.k	Electricity by Geothermal	Energy
p40.11.l	Electricity nec	Energy
p40.12	Transmission services of electricity	Energy
p40.13	Distribution and trade services of electricity	Energy
p40.2.a	Coke oven gas	Mass
p40.2.b	Blast Furnace Gas	Mass
p40.2.c	Oxygen Steel Furnace Gas	Mass
p40.2.d	Gas Works Gas	Mass
p40.2.e	Biogas	Mass
p40.2.1	Distribution services of gaseous fuels through mains	Monetary
p40.3	Steam and hot water supply services	Energy
p41	Collected and purified water, distribution services of water	Monetary
p45	Construction work	Monetary
p45.w	Secondary construction material for treatment, Re-processing of ...	Mass
p50.a	Sale, maintenance, repair of motor vehicles, motor vehicles parts, ...	Monetary
p50.b	Retail trade services of motor fuel	Monetary
p51	Wholesale trade and commission trade services, except of motor vehicles ...	Monetary
p52	Retail trade services, except of motor vehicles and motorcycles; ...	Monetary
p55	Hotel and restaurant services	Monetary
p60.1	Railway transportation services	Monetary
p60.2	Other land transportation services	Monetary
p60.3	Transportation services via pipelines	Monetary
p61.1	Sea and coastal water transportation services	Monetary
p61.2	Inland water transportation services	Monetary
p62	Air transport services	Monetary
p63	Supporting and auxiliary transport services; travel agency services	Monetary

p64	Post and telecommunication services	Monetary
p65	Financial intermediation services, except insurance and pension ...	Monetary
p66	Insurance and pension funding services, except compulsory social ...	Monetary
p67	Services auxiliary to financial intermediation	Monetary
p70	Real estate services	Monetary
p71	Renting services of machinery and equipment without operator and ...	Monetary
p72	Computer and related services	Monetary
p73	Research and development services	Monetary
p74	Other business services	Monetary
p75	Public administration and defence services; compulsory social security ...	Monetary
p80	Education services	Monetary
p85	Health and social work services	Monetary
p90.1.a	Food waste for treatment: incineration	Mass
p90.1.b	Paper waste for treatment: incineration	Mass
p90.1.c	Plastic waste for treatment: incineration	Mass
p90.1.d	Intert/metal waste for treatment: incineration	Mass
p90.1.e	Textiles waste for treatment: incineration	Mass
p90.1.f	Wood waste for treatment: incineration	Mass
p90.1.g	Oil/hazardous waste for treatment: incineration	Mass
p90.2.a	Food waste for treatment: biogasification and land application	Mass
p90.2.b	Paper waste for treatment: biogasification and land application	Mass
p90.2.c	Sewage sludge for treatment: biogasification and land application	Mass
p90.3.a	Food waste for treatment: composting and land application	Mass
p90.3.b	Paper and wood waste for treatment: composting and land application	Mass
p90.4.a	Food waste for treatment: waste water treatment	Mass
p90.4.b	Other waste for treatment: waste water treatment	Mass
p90.5.a	Food waste for treatment: landfill	Mass
p90.5.b	Paper for treatment: landfill	Mass
p90.5.c	Plastic waste for treatment: landfill	Mass
p90.5.d	Inert/metal/hazardous waste for treatment: landfill	Mass
p90.5.e	Textiles waste for treatment: landfill	Mass
p90.5.f	Wood waste for treatment: landfill	Mass
p91	Membership organisation services n.e.c.	Monetary
p92	Recreational, cultural and sporting services	Monetary
p93	Other services	Monetary
p95	Private households with employed persons	Monetary
p99	Extra-territorial organizations and bodies	Monetary