Economic and Social Council

Distr.: General
29 June 2015

Original: English

Economic Commission for Europe

Conference of European Statisticians

Group of Experts on National Accounts

Fourteenth session
Geneva, 7-9 July 2015
Agenda item 5
Global Accounts

EU Multi-country Supply, Use and Input-Output Tables (EU-MC-SUIOTs)

Full International and Global Accounts for Research in Input-Output Analysis

Prepared by Eurostat and DG Joint Research Centre, European Commission[1]

Summary

This paper present the joint project between Eurostat and the European Commission's DG Joint Research Centre, which aims to establish an annual production of EU Multi-country Input-Output Tables and a five-yearly production of EU Multi-country Supply, Use and Input-Output Tables (EU-MC-SUIOTs). The EU-MC-SUIOTs constitute a further development of the current regularly published EU and Euro area consolidated SUIOTs. The EU-MC-SUIOTs will serve to support the analyses of the economic, social and environmental consequences of globalisation in the EU by means of studies on competitiveness, growth, productivity, employment and international trade (e.g. global value chains). It shall be complemented with (i) a regular combination of micro and macro data sources to construct the EU-MC-SUIOTs; (ii) careful checking of user needs of various European Commission's DGs for policy analyses, and (iii) an institutional perspective by setting up consistent EU-MC-SUIOTs, recognised by international agencies such as OECD, WTO and UN, and used as such in a Global Multi-country Supply, Use and Input-Output framework.

---

[1] Prepared by Jose Manuel Rueda-Cantuche and Isabelle Remond-Tiedrez

Please recycle

I. Motivation

1. This project aims to establish an annual production of EU Multi-country Input-Output Tables and a five-yearly production of EU Multi-country Supply, Use and Input-Output Tables (EU-MC-SUIOTs). The EU-MC-SUIOTs constitute a further development of the current regularly published EU and Euro area consolidated SUIOTs[2]. The EU-MC-SUIOTs will serve to support the analyses of the economic, social and environmental consequences of globalisation in the EU by means of studies on competitiveness, growth, productivity, employment, environmental footprints and international trade (e.g. global value chains). This project will rely on the re-use of available data in Eurostat.

2. The development of the EU-MC-SUIOT shall be based on:

(a) A regular combination of global business statistics[3] and macro-economic data sources (e.g. trade statistics, trade by enterprise characteristics, business statistics, National Accounts…) to construct the EU-MC-SUIOTs;

(b) A careful check of user needs of various European Commission's Directorate-Generals (DGs) for policy analyses, i.e.: DG ESTAT, DG ECFIN[4], DG TRADE, DG ENV[5], DG RTD[6], DG EMPL[7], DG GROW[8], among other European institutions such as the ECB[9];

(c) An institutional perspective by setting up consistent EU-MC-SUIOTs, recognised by international agencies such as OECD[10], WTO[11] and UN[12], and used as such in a Global Multi-country Supply, Use and Input-Output framework. National compilers of the EU Member States should also be involved in order to ensure that they can take ownership of the national data used in the construction of the EU-MC-SUIOTs.

II. Background information

3. This project fits in the medium term strategy for National Accounts in the context of the European statistical programme for the period from 2013 to 2017 regarding the following headings:

1.3 Economic globalisation with the enhanced measurement of globalised production; analysis of global value chains, through appropriate input-output tables and global business statistics.

---

[2] http://ec.europa.eu/eurostat/web/esa-supply-use-input-tables/data/workbooks
[3] Global business statistics can be interpreted as traditional business statistics such as Structural Business Statistics, international trade statistics both in goods and services as well as linked data between business and trade e.g. Trade by Enterprise Characteristics for goods (TEC) and for services (STEC).
[4] Economic and financial affairs
[5] Environment
[6] Research and Innovation
[7] Employment, social affairs and inclusion
[8] Internal Market, Industry, Entrepreneurship and SMEs
[9] European Central Bank
[10] Organisation for Economic Cooperation and Development
[11] World Trade Organisation
[12] United Nations

2.1 Economic and social performance with the implementation of ESA 2010 and the database for growth and productivity measurement;

2.2 Environmental sustainability as the European Supply, Use and Input-Output Tables are an input for input-output modelling with environmental accounts, contributing therefore to the implementation of the political guidelines of the Commission regarding climate change.

4.   The project output – the EU-MC-SUIOTs - will serve to evaluate European Union policies and to assess the position of the European Union and the Euro Area in the world. The FIGARO project should create the conditions for sustainable data availability of EU-MC-SUIOTs on a continuous basis to guarantee the provision of data for European policies in the long-term.

5.   The Regulation (EU) No 549/2013 of the European Parliament and of the Council of 21 May 2013 on the European System of National and Regional Accounts in the European determines the underlying methodology of the EU-MC-SUIOTs.

III.   Scope and objectives

6.   The scope and objectives of the project are:

1.   to take stock of all current international projects related to the construction of multi country SUIOTs and of user needs of various European Commission's DGs for policy analyses;

2.   to define a suitable methodological framework for the regular production of EU-MC-SUIOTs, including the analysis and treatment of specific issues producing inconsistencies or asymmetries in trade statistics and overall balance procedure;

3.   to construct EU-MC-SUIOTs at basic prices for the reference year 2010 based on SNA2008/ESA2010 methodology and the NACE Rev.2/CPA 2008/ISIC Rev. 4 classifications;

4.   to integrate the EU-MC-SUIOTs into Global (World) Supply, Use and Input-Output Tables, in collaboration with the OECD and UN;

5.   to include a reduced version of the EU-MC-SUIOTs at the A10 sector classification with linked capital and labour productivity indicators;

6.   to integrate the EU-MC-SUIOTs with environmental accounts (in particular, air emission accounts, material flow accounts and energy accounts);

7.   to explore possible extensions of the EU-MC-SUIOTs with global business statistics taking into account the recommendations of the OECD Expert Group of Extended Supply and Use Tables;

8.   to propose a strategy for a regular production of Eurostat's annual EU-MC-IOTs and five-yearly EU-MC-SUIOTs, linked to labour and environmental accounts and possibly with an extended SUIOT format using global business statistics;

7.   The EU-MC-SUIOTs aim to be the reference for national and international agencies in terms of analysis of trade, globalisation, socio-economic, National Accounts and environmental policies.

IV. Description of tasks

8.   Task 1. To take stock of all current international projects related to the construction of multi-country SUIOTs and of user needs of various European Commission's DGs for policy analyses

9.   During the last ten years or so, several multi country input-output databases have been developed by the scientific community and/or international organisations. These are: EXIOBASE (TNO, Netherlands), WIOD (University of Groningen, Netherlands), OECD/WTO, GTAP (Purdue University, US), Eora (University of Sydney, Australia), IDE-JETRO (Japan External Trade Organisation, Japan) and GRAM (Vienna University, Austria).

10.   The first task will be to consult the scientific institutes and organisations that have elaborated these global multi country input-output databases regarding their methodological choices in all compilations steps. Assumptions taken by them should be examined and put in relation with the data availability at Eurostat level. As it is the case for Eurostat data, the EU-MC-SUIOTs aims to be based on official statistics. The methodology put in place will be publicly available in the form of reports (deliverables) and transparent for compilers and all users.

11.   Global multi-country input-output databases are increasingly becoming a key quantitative tool in the European Commission for the assessment of socio-economic and environmental consequences of European trade and globalisation. Mostly, GTAP and WIOD databases have been used by DG TRADE, DG GROW and DG ECFIN to carry out many studies and produce relevant Communications for the European Commission. However, there could be other DGs that might be interested in using such type of databases for their policy analyses. With this purpose, this task will explore the different user needs of the European Commission's DGs for policy analyses.

12.   Task 2. To define a suitable methodological framework for the regular production of EU-MC-SUIOTs, including the analysis and treatment of specific issues producing inconsistencies or asymmetries in trade statistics and overall balance procedure

13.   The EU-MC-SUIOTs will be based on data transmitted by Member States of the European Union as well as candidate countries and partner countries. Therefore, the data presented in the EU-MC-SUIOTs will have to reconcile different statistical areas such as trade statistics, balance of payments and National Accounts. Although Task 1 will give insights on the different methodologies and hopefully on some common methods to solve trade data inconsistencies, Task 2 will examine carefully the link between trade statistics and the SUIOTs framework. During the course of the project, different data sources will have to be identified and worked out (e.g. COMTRADE and COMEXT, BoP and National Accounts) to identify a neat process for reconciling trade statistics with National Accounts. Other relevant tasks will have to be addressed, such as (the list is not exhaustive):

(a)   The identification of the country of origin/destination of the imports/exports by product type;

(b)   The valuation of imports and exports (cif/fob) and international trade and transport margins;

(c)   The treatment of re-exports and transit trade;

(d)   The estimation of consumption of residents abroad and in the domestic territory;

(e)   Balancing procedures.

14.   In this task, the input from EU Member States will be important for the decision of the methodology to be retained. With the same purpose, the methodology retained should allow the integration of the tables with the OECD, WTO and UN databases.

15.   Task 3. To construct EU-MC-SUIOTs at basic prices for the reference year 2010 based on SNA2008/ESA2010 methodology and the NACE Rev.2/CPA 2008/ISIC Rev. 4 classifications

16.   The 2010 Edition of the European System of National and Regional Accounts (ESA 2010) is the newest internationally compatible EU accounting framework for a systematic and detailed description of an economy. ESA 2010 was published in the Official Journal on 26 June 2013 and is implemented as from September 2014; from that date onwards the data transmissions from Member States to Eurostat follow ESA 2010 rules. The ESA2010 Transmission programme (TP) of data describes the programme of National Accounts data delivery within the framework of the new ESA 2010, as defined in Annex B of the Council Regulation (EU) No 549/2013 of the European Parliament and of the Council of 21 May 2013 (cf. also Article 3 of this regulation).

17.   The ESA2010 TP establishes that Member States must deliver on an annual basis Supply Tables at basic prices, including a transformation into purchasers' prices and Use Tables at purchasers' prices; and on a five-yearly basis (for reference years ending in 0 or 5) Input-Output Tables at basic prices. With the new ESA2010 TP, the following five additional tables at current prices must also be delivered on a five-yearly basis, starting from the reference year 2010 onwards:
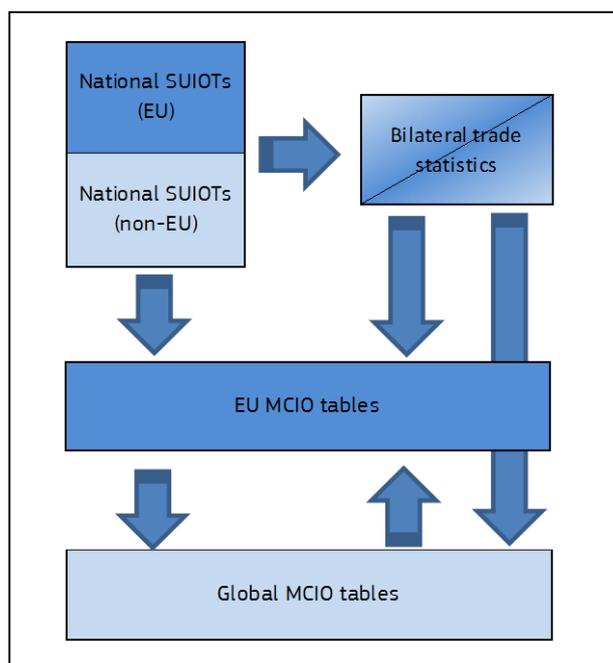
— Use table at basic prices;
— Use table for domestic output at basic prices;
— Use table for imports at basic prices;
— Table of trade and transport margins;
— Table of taxes less subsidies on products

18.   This project will therefore rely on the expected submissions of the Member States and will estimate the missing tables using as much as possible official statistics and Eurostat and DG JRC's expertise, accredited by the longstanding collaboration of the two institutions in the construction of the EU and euro area consolidated SUIOTs (i.e. good practice guidelines). As a result of the new ESA2010 TP, the EU-MC-SUTs will only be produced on a five yearly basis given that the national supply and use tables at basic prices will only be available once every five years. In turn, the construction of the EU-MC-IOTs will be produced annually from the available data but without disclosing the underlying estimated use tables at basic prices.

19.   Task 4. To integrate the EU-MC-SUIOTs into Global (World) Supply, Use and Input-Output Tables, in collaboration with the OECD and UN

20.   The EU-MC-SUIOTs will be incorporated into other international multi-country SUIOTs, such as the OECD and possibly linked to UN input-output databases. The aim is to plug in the EU-MC-SUIOTs compiled by Eurostat as a stand-alone product into the OECD global input-output database. Reconciliations of trade asymmetries will be carried out jointly (see Fig. 1, mixed blues) by ESTAT, DG JRC and OECD, based on some previous joint work carried out in Tasks 2 and 3.

Figure 1

NOTE: MCIO = Multi-Country Input-Output

21.   The EU-MC-SUIOT will be compiled from official national SUIOTs transmitted by EU Member States. The structure of data coordination shall be as shown in Figure 1 (OECD, light blue; ESTAT/DG JRC, dark blue). This structure has already been discussed with the OECD.

22.   Within the block of National SUIOTs (EU) in Figure 1, there will be a clear and transparent process of feedback with the EU Member States through the so called TECHNICAL Group. Besides, they might also be consulted bilaterally on any necessary adjustment to their official national data that could come as a result of the consistency checks with other international trade and global SUIOT databases. The outcome of these consultations will be further implemented in the EU-MC-SUIOTs and communicated to the EU Member States, the OECD and UN.

23.   Task 5. To include a reduced version of the EU-MC-SUIOTs at the A10 sector classification with capital and labour productivity indicators

24.   This project will link the results of the capital and labour productivity indicators project with a reduced version (A10) of the EU-MC-SUIOTs.

25.   The EU-MC-SUIOTs will become more useful to answer policy needs and analyses such as the social and economic consequences of globalisation. Particularly, one could investigate for example how much high skilled employment is used by the Czech manufacturing industry in producing car glasses that will be exported to Germany for the final assembly of a German car or exported to Japan for the final assembly of a Japanese car. By splitting household consumption by income quintiles, age groups, household size, etc. using the Household Budget Surveys, one could also differentiate between different consumption patterns in the EU and consequently, their effects on production and employment. Besides, by adding the sectorial component the new database can also facilitate multifactor productivity analysis in addition to the standard analyses.

26.   **Task 6. To integrate the EU-MC-SUIOTs with environmental accounts (in particular, air emission accounts, material flow accounts and energy accounts)**

27.   The consolidated EU SUIOTs currently serve as an input for Eurostat carbon footprint accounts and the raw material equivalents model. The EU-MC-SUIOTs will particularly allow improving the methods used so far for the estimation of the EU carbon footprint by considering country-specific emission intensities and country-specific technologies, i.e. using multi-regional input-output modelling. These results will be communicated as complements to the estimations of "emissions avoided in the EU" that are obtained with the domestic technology assumption. This task may benefit Eurostat by identifying internal users' needs that can lead to the elaboration of a joint statistical production plan in relation to the EU-MC-SUIOTs and the link with environmental accounts.

28.   **Task 7. To explore possible extensions of the EU-MC-SUIOTs with global business statistics taking into account the recommendations of the OECD Expert Group of Extended Supply and Use Tables**

29.   The EU-MC-SUIOTs will be a powerful tool for policy analysis and decisions. The EU-MC-SUIOTs could be further split considering two or more different populations such as foreign affiliates and non-foreign affiliates, exporters and non-exporters, small and medium enterprises, etc. Substantial progress has been achieved over the last year in terms of availability of linked trade-business data, in particular via Trade by Enterprise Characteristics (TEC) for goods and in the future via Services Trade by Enterprise Characteristics (STEC) for services.

30.   This task consists in defining a framework for the integration of selected global business statistics into the EU-MC-SUIOTs and in establishing a work plan for the regular production of these integrated statistics, where not yet available. This task will take into account the work on data availability and methodology that will be undertaken by the OECD Expert Group of Extended Supply and Use Tables.

31.   This task may also benefit Eurostat by identifying internal users' needs that can lead to the elaboration of a joint statistical production plan in relation to the EU-MC-SUIOTs and the links with global business statistics.

32.   **Task 8. To elaborate a strategy for a regular production of Eurostat's annual EU-MC-IOTs and five-yearly EU-MC-SUIOTs, linked to labour and environmental accounts and possibly with an extended SUIOT format using global business statistics**
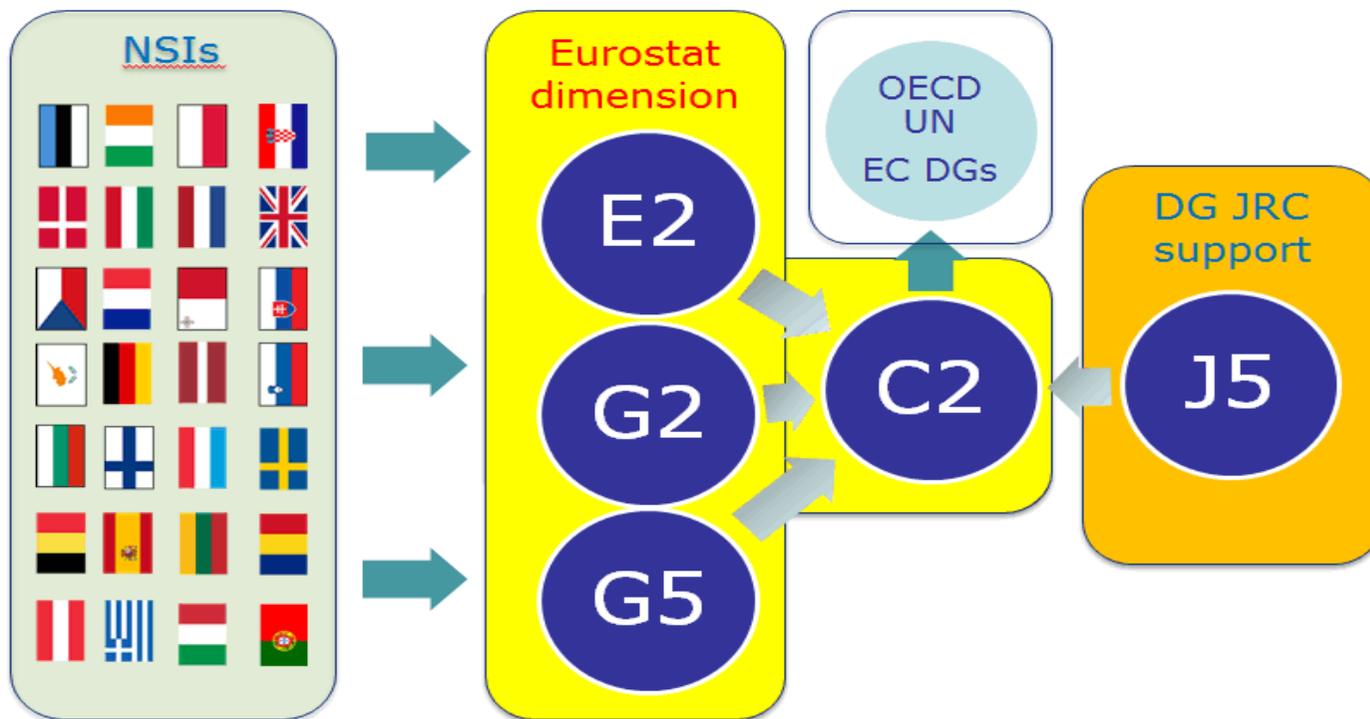
33.   The aim of this task is to develop a strategy for producing a time series of EU-MC-SUIOTs 2010-2015 (IOTs 2010-2015; SUTs 2010 and 2015) and for starting regular productions of annual EU-MC-IOTs and five-yearly EU-MC-SUIOTs starting from 2015 onwards. Besides, the links to labour and environmental accounts and the use of global business statistics will be discussed.

34.   The first EU-MC-SUIOT compiled under the FIGARO Project (2010) will be expected to be presented to the NAWG (National Accounts Working Group), the DMES (Directors of Macroeconomic Statistics) and the BSDG (Business Statistics Directors Group) as well to international instances (OECD and UN) and the academic community (e.g. International Input-Output Association Conference) in 2017.

V.   Duration

35.   The project will start in October 1st 2015 and run until the end of December 2017.

Figure 2
Project participants (in yellow/orange boxes) and stakeholders (elsewhere)[13]

---

[13] E2 is the unit of Environmental statistics and accounts; sustainable development; G2 is the unit of Structural business statistics and global value chains; G5 is the unit of Goods - production and international trade; C2 is the unit of National and regional accounts production. Balance of payments and J5 is the unit of Sustainable Production and Consumption

Table 1
Schedule

		2015			2016												2017											
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18	M19	M20	M21	M22	M23	M24	M25	M26	M27
Inc	Task 1&2						**D1**																					
Rev	Task 1&2				**D2**																							
SUT	Task 3										*D3.1*					**D3.2**												
IOT	Task 3																	**D4**										
OECD	Task 4										*D5.1*									**D5.2**								
LK	Task 5																					**D6**						
Env	Task 6												*D7.1*										**D7.2**					
Ext	Task 7										*D8.1*								*D8.2*						**D8.3**			
Dis	Task 8																					*D9.1*						**D9.2**

Bold = Final reports

Italics = Interim/progress reports