

Table of contents

1. Introduction	10
1.1 Background	10
1.2 Concept and data framework	13
2. Review of construction methods	17
2.1 Introduction	17
2.2 Overview of existing interregional input-output tables	18
2.2.1 Overview	18
2.2.2 Dimensionalities	21
2.3 Underlying data sources	21
2.3.1 National accounts and supply and use tables	22
2.3.2 Trade data	24
2.4 Construction of global IC-IOTs	27
2.5 Summary	28
3. Methodological overview	30
3.1 Construction approach: overview	30
3.2 Figaro construction in practice: Eurostat's methodology	36
3.2.1 Estimating missing countries, import flow matrices and/or trade and transport margins matrices	36
3.2.2 Creating a coherent view of EU bilateral trade statistics of goods	37
3.2.3 Creating a coherent view of EU bilateral trade statistics of services	40
3.2.4 Overcoming national data inconsistencies between national accounts and trade statistics	41
3.2.5 Estimation of international trade, transport and insurance costs	43
3.2.6 Direct purchases abroad	43
3.2.7 Harmonising different classifications	45
3.2.8 To balance or not to balance ...and when	46
3.2.9 Construction of inter-country supply, use and input-output tables	46
3.2.10 Assessment of the results	48
4. Data sources	50
4.1 National accounts data	50
4.2 National supply, use and input-output tables	51
4.2.1 Estimating missing countries, import flow matrices and/or distribution margin matrices	53
4.2.2 Data availability after 2010	54
4.3 International trade in goods statistics	55
4.3.1 ITGS	55
4.3.2 UN Comtrade	57
4.3.3 Data for Figaro	58
4.4 International trade in services and balance of payments data	58
4.4.1 Classification of services	59

4.4.2	Coverage	60
4.4.3	Data for Figaro.....	60
4.5	CIF-FOB margins.....	62
4.5.1	CIF-FOB results.....	63
5.	Estimation of missing national supply, use and valuation tables	67
5.1	Introduction	67
5.2	Identification of estimation targets and scenarios	69
5.3	Estimation strategies for scenarios	71
5.3.1	Valuation tables (scenario 1)	71
5.3.2	Domestic and import uses (scenario 2)	72
5.3.3	Use tables at basic prices (scenario 3).....	74
5.4	Conclusions.....	77
6.	Balanced view of traded in goods	78
6.1	Introduction	78
6.2	QDR methodology overview	78
6.3	Non-allocated trade estimation.....	79
6.3.1	Methodology	79
6.3.2	Results.....	80
6.4	Balanced trade flows	81
6.4.1	CIF/FOB.....	82
6.4.2	Methodology	82
6.4.3	Results.....	83
6.5	QDR	85
6.5.1	Methodology	85
6.5.2	Consistency between data sources	86
6.5.3	Correction of bias in domestic estimates	87
6.5.4	Quasi-transit and re-export partners.....	87
6.5.5	Triangular trade and re-export margins	87
6.5.6	Results.....	89
6.6	Future work.....	90
7.	Balanced view of trade in services	91
7.1	Introduction	91
7.2	Fully consistent trade data set	92
7.2.1	Eliminating specific negative values	92
7.2.2	Computing services aggregates	93
7.2.3	Consistency imputations.....	94
7.2.4	Allocation of non-allocated services trade	94
7.2.5	Time series interpolation.....	95
7.2.6	Model estimates.....	95
7.2.7	Manual imputations.....	97
7.2.8	Allocation of non-allocated trade partner	98

7.2.9	Consistency imputations (for totals and sub-totals)	99
7.2.10	Top-down benchmark	100
7.2.11	Balance of payments consistency	103
7.2.12	Final benchmark	104
7.3	A balanced view of trade	105
7.4	From BOP classification to CPA product classification	108
8.	Goods sent abroad for processing	110
8.1	Introduction	110
8.2	Overview of data sources and estimation methods	112
8.2.1	Data sources	112
8.2.2	Process of estimation and methodology	113
8.2.3	Distribution by trading partner	114
8.2.4	Distribution by CPA product	115
8.3	Conclusions	116
9.	Merchanting	117
9.1	Merchanting and different accounting principles	117
9.1.1	Information required for estimating merchanting	119
9.2	Estimation of merchanting in Figaro	120
9.2.1	Information used to estimate merchanting	120
9.2.2	Method and assumptions for estimating merchanting flows	121
9.2.3	Total merchanting adjustment for each country	122
9.2.4	Merchanting adjustment split by trading partner	122
9.2.5	Merchanting adjustment split by trading partner and by product	123
9.3	Conclusions	125
10.	Direct purchases abroad	127
10.1	Domestic and national concepts	127
10.2	From national to inter-country supply and use frameworks	128
10.3	Methodology for the estimation of direct purchases abroad	129
10.3.1	Step 1: National bilateral flows for direct purchases abroad	129
10.3.2	Step 2: Splitting by product	130
10.4	Summary and conclusions	131
11.	Inter-country supply and use tables	132
11.1	Introduction	132
11.2	The inter-country supply table	132
11.3	The inter-country statistical use table	134
11.3.1	Introduction	134
11.3.2	Breaking down trade statistics by user	135
11.3.3	From FOB prices to basic prices	136
11.4	The inter-country use table	137
11.4.1	Introduction	137

11.4.2	Construction of the inter-country use table	138
11.4.3	Setting up targets for removing discrepancies.....	139
11.4.4	Removing discrepancies, qualitative checks and ad hoc interventions	139
12.	Inter-country input-output tables.....	141
12.1	Introduction	141
12.2	The inter-country input-output table.....	142
13.	Assessment of the results	145
13.1	Introduction	145
13.2	Assessment of the results	147
13.2.1	International trade data and national SUTs	147
13.2.2	Analysis of discrepancies	152
13.2.3	GRAS analysis.....	171
14.	Air emissions	178
14.1	Introduction and methodology.....	178
14.1.1	An input-output table and model.....	178
14.1.2	Embodied effects	179
14.2	Data	180
14.3	Results.....	180
15.	Employment	186
15.1	Data	186
15.1.1	Employment data.....	186
15.1.2	Estimation by product	186
15.2	Results.....	186
16.	Reducing discrepancies.....	190
16.1	Introduction	190
16.2	Method for reducing discrepancies	191
16.2.1	Ahmad's (2017) approach: numerical example	191
16.2.2	Ahmad's (2017) approach: revisited for negatives	194
16.2.3	Ahmad's (2017) approach: revisited for users' allocation	196
16.3	Conclusions	197
17.	Limitations and further improvements.....	198
17.1	Introduction	198
17.2	Use of more data.....	198
17.2.1	National supply, use and input-output tables.....	198
17.2.2	Trade data	199
17.2.3	Adjustments from trade to national accounts concepts	199
17.3	Methodological improvements.....	199
17.4	Improvements in the production process	200
18.	Integration with the OECD inter-country input-output tables	201

18.1	Background	201
18.2	Scope of the Figaro project and links to the OECD ICIO tables	201
18.3	Coordination and consistency framework	202
18.4	Work plan	203
19. Figaro Act I		204
19.1	Motivation, scope and objectives	204
19.2	Implementation of the project	205
19.3	Description of tasks	206
19.3.1	Task 1 — Construct EU-IC-SUIOTs at basic prices for the reference years 2010-2018 in current and previous year prices	206
19.3.2	Task 2 — Explore possible extensions of the EU-IC-SUIOTs.....	207
19.3.3	Task 3 — Explore the compilation of a time series of EU Inter-country National/Social/Financial Accounting Matrices.....	208
19.3.4	Task 4 — Dissemination and analyses.....	209
19.3.5	Task 5 — Quality assessment indicators and IT development.....	209
20. References and annexes		211
20.1	References	211
20.2	Annex	216
20.2.1	Format of the Figaro tables.....	216
20.2.2	List of CPA 2008 products	221
20.2.3	List of detailed services categories for Figaro purposes (Ebops 2010)	226
20.2.4	Data availability.....	229
20.2.5	List of acronyms.....	230
20.2.6	List of country codes.....	231