

REM WORKING PAPER SERIES

**National Accounts of Portugal in 2018.
Measurement of institutional interrelations in distributive
transactions**

Susana Santos

REM Working Paper 0305-2023

December 2023

REM – Research in Economics and Mathematics

Rua Miguel Lúpi 20,
1249-078 Lisboa,
Portugal

ISSN 2184-108X

Any opinions expressed are those of the authors and not those of REM. Short, up to two paragraphs can be cited provided that full credit is given to the authors.





REM – Research in Economics and Mathematics

Rua Miguel Lupi, 20
1249-078 LISBOA
Portugal

Telephone: +351 - 213 925 912

E-mail: rem@iseg.ulisboa.pt

<https://rem.rc.iseg.ulisboa.pt/>



<https://twitter.com/ResearchRem>

<https://www.linkedin.com/company/researchrem/>

<https://www.facebook.com/researchrem/>

National Accounts of Portugal in 2018.

Measurement of institutional interrelations in distributive transactions.

Susana Santos¹

UECE (Research Unit on Complexity and Economics) - REM (Research in Economics and Mathematics)

ISEG - Lisbon School of Economics and Management, Universidade de Lisboa

Abstract:

Complementing the working paper with the same title - National Accounts of Portugal in 2018 - and subtitle “Integrated economic accounts, matrix representations and extensions” (Santos, 2022), the measurement of institutional interrelations in distributive transactions is now explored in more detail, with a view to facilitating and improving the construction and extension of matrix representations. For the six groups of institutional sectors, identified by the System of National Accounts, starting from the published totals of the current and capital accounts, organized in the form of integrated economic accounts, the nine categories of distributive transactions (disaggregated at the second level) are analysed individually and the possibilities of filling in from-whom-to-whom matrices are explored. Since the resources of some are the uses of others, it will be shown as information about the origin of the resources (from-whom) or the destination of the uses (to-whom) can complete the filling of those matrices.

Like the supply and use tables for industry interrelations in transactions in products, tables with the origin of the resources or the destination of the uses of distributive transactions can have a relevant contribution to the measurement of institutional interrelations. This would take another step towards the possibility of having more credible disaggregation of matrices derived from national accounts (for example, national/social accounting matrices), of undeniable utility in measuring and modelling countries' economic activity.

Key words: National Accounts; Social Accounting Matrix

JEL Codes: E01; E16

Notes:

- This is the English version of the *REM (Research in Economics and Mathematics) Working Paper 0306-2023*: https://rem.rc.iseg.ulisboa.pt/wps/pdf/REM_WP_0306_2023.pdf.
- This paper is also available in: <http://hdl.handle.net/10400.5/29734>, with the corresponding spreadsheet (excel file).

(December 2023)

¹ Rua Miguel Lupi, 20, 1249-078 Lisboa, Portugal; ssantos@iseg.ulisboa.pt; <https://orcid.org/0000-0002-8884-3103>.
The author acknowledges financial Support from FCT – *Fundação para a Ciência e Tecnologia* (Portugal), with national funding through research grant UIDB/05069/2020.

OUTLINE

1. Introduction	1
2. Institutional sectors and distributive transactions, description and representation	3
2.1. Meaning and disaggregation	3
2.2. Positioning in flow accounts; origin and destination	3
2.3. Matrix representations	16
3. Identification of institutional interrelations in distributive transactions. Construction of from-whom-to-whom matrices	20
3.1. Compensation of employees	20
3.2. Taxes on production and imports	23
3.3. Subsidies	25
3.4. Property income	27
3.5. Current taxes on income, wealth, etc.	31
3.6. Social contributions and benefits	35
3.7. Other current transfers	38
3.8. Adjustment for the change in pension entitlements	42
3.9. Capital transfers	43
3.10. Aggregation and positioning in matrix representations	46
4. Concluding remarks	53
References	54
Annex. Recording of the resources of distributive transactions extended to origin institutional sectors	55

ACRONYMS AND ABBREVIATIONS

ESA ...	European System of National and Regional Accounts in the European Union
EU ...	European Union
GNI ...	Gross National Income
IEA ...	Integrated Economic Accounts Table
INE ...	<i>Instituto Nacional de Estatística</i> - Statistics Portugal (Portuguese Statistical Office)

National Accounts of Portugal in 2018.

Measurement of institutional interrelations in distributive transactions.

Santos, S.

ISWGNA ... Intersecretariat Working Group on National Accounts - with representatives of the United Nations, European Commission, International Monetary Fund, Organisation for Economic Cooperation and Development and World Bank

NPISHs ... Non-Profit Institutions Serving Households

SNA ... System of National Accounts

VAT ... Value added type taxes

LIST OF TABLES²

2.2-1a. Part of IEA relating to the primary distribution of income account - generation of income (sub)account – uses	6
2.2-1b. Part of IEA relating to the primary distribution of income account - generation of income (sub)account - resources	7
2.2-2a. Part of IEA relating to the primary distribution of income account - allocation of primary income (sub)account - uses	8
2.2-2b. Part of IEA relating to the primary distribution of income account - allocation of primary income (sub)account - resources	9
2.2-3a. Part of IEA relating to the secondary distribution of income and redistribution of income in kind accounts - uses	10
2.2-3b. Part of IEA relating to the secondary distribution of income and redistribution of income in kind accounts - resources	11
2.2-4a. Part of IEA relating to the use of disposable income and of use of adjusted disposable income accounts - uses	12
2.2-4b. Part of IEA relating to the use of disposable income and of use of adjusted disposable income accounts - resources	13
2.2-5a. Part of IEA relating to the capital account - changes in assets	14
2.2-5b. Part of IEA relating to the capital account - changes in liabilities and net worth.	15
2.3-1. Aggregated national accounting matrix of transactions with gross balancing items	18
2.3-2. Aggregated social accounting matrix of transactions with gross balancing items	19

² The numbering of tables is preceded by a dash and the number of the section in which they are inserted, starting with each one.

National Accounts of Portugal in 2018.

Measurement of institutional interrelations in distributive transactions.

Santos, S.

3.1-1. Recording of compensation of employees in the generation of income account	20
3.1-2. Recording of compensation of employees in the allocation of primary income account	21
3.1-3. Possible filling in of the from-whom-to-whom matrices relating to compensation of employees, from the subaccounts of the primary income distribution account	22
3.2-1. Recording of taxes on production and imports in the generation of income account	23
3.2-2. Recording of taxes on production and imports in the allocation of primary income account	23
3.2-3. Possible filling in of the from-whom-to-whom matrices relating to taxes on production and imports, from the subaccounts of the primary income distribution account	24
3.3-1. Recording of subsidies in the generation of income account	26
3.3-2. Recording of subsidies in the allocation of primary income account	26
3.3-3. Possible filling in of the from-whom-to-whom matrices relating to subsidies, from the subaccounts of the primary income distribution account	27
3.4-1. Recording of property income in the allocation of primary income account	28
3.4-2. Possible filling in of the from-whom-to-whom matrices relating to property income, from the allocation of primary income account	29
3.4-3. Recording of the uses of property income in the allocation of primary income account, extended to destination institutional sectors	30
3.4-4. Filling in of the from-whom-to-whom matrices relating to property income, from the corresponding uses in the allocation of primary income account, extended to destination institutional sectors.....	31
3.5-1. Recording of the uses of current taxes on income, wealth, etc. in the secondary distribution of income account	32
3.5-2. Possible filling in of the from-whom-to-whom matrices relating to current taxes on income, wealth, etc., from the secondary distribution of income account	33
3.5-3. Recording of the uses of current taxes on income, wealth, etc. in the secondary distribution of income account, extended to destination institutional sectors	34
3.5-4. Filling in of the from-whom-to-whom matrices relating to current taxes on income, wealth, etc., from the corresponding uses in the secondary distribution of income account, extended to destination institutional sectors.....	34
3.6-1. Recording of social contributions and benefits in the secondary distribution of income and redistribution of income in kind accounts	35

National Accounts of Portugal in 2018.

Measurement of institutional interrelations in distributive transactions.

Santos, S.

3.6-2. Possible filling in of the from-whom-to-whom matrices relating to social contributions and benefits, from the secondary distribution of income and redistribution of income in kind accounts	36
3.6-3. Recording of the uses of social contributions and benefits in the secondary distribution of income and redistribution of income in kind accounts, extended to destination institutional sectors	37
3.6-4. Filling in of the from-whom-to-whom matrices relating to social contributions and benefits, from the secondary distribution of income and redistribution of income in kind accounts, extended to destination institutional sectors.....	38
3.7-1. Recording of other current transfers in the secondary distribution of income account	39
3.7-2. Possible filling in of the from-whom-to-whom matrices relating to other current transfers, from the secondary distribution of income account	40
3.7-3. Recording of the uses of other current transfers in the secondary distribution of income accounts, extended to destination institutional sectors	41
3.7-4. Filling in of the from-whom-to-whom matrices relating to other current transfers, from the corresponding uses in the secondary distribution of income account, extended to destination institutional sectors.	42
3.8-1. Recording of adjustment for the change in pension entitlements in the use of disposable income and of adjusted disposable income accounts	43
3.8-2. Filling in of the from-whom-to-whom matrices relating to adjustment for the change in pension entitlements, from the use of disposable income and of adjusted disposable income accounts	43
3.9-1. Recording of capital transfers in the capital account	44
3.9-2. Possible filling in of the from-whom-to-whom matrices relating to capital transfers, from the capital account	44
3.9-3. Recording of capital transfers payable in the capital account, extended to destination institutional sectors	45
3.9-4. Filling in of the from-whom-to-whom matrices relating to capital transfers, from the transfers payable of capital account, extended to destination institutional sectors.....	46
3.10-1. Association of the from-whom-to-whom matrices to the primary distribution of income and the rest of the world accounts of the aggregated national accounting matrix of transactions with gross balancing items	47

National Accounts of Portugal in 2018.

Measurement of institutional interrelations in distributive transactions.

Santos, S.

3.10-2. Association of the from-whom-to-whom matrices to the secondary distribution of income and the rest of the world accounts of the aggregated national accounting matrix of transactions with gross balancing items	48
3.10-3. Association of the from-whom-to-whom matrices to the use of income, capital and the rest of the world accounts of the aggregated national accounting matrix of transactions with gross balancing items	49
3.10-4. Association of the from-whom-to-whom matrices to the current transactions of the aggregated and disaggregated social accounting matrices of transactions with gross balancing items	51
3.10-5. Association of the from-whom-to-whom matrices to the capital transactions of the aggregated and disaggregated social accounting matrices of transactions with gross balancing items	52
A.1. Property income	55
A.2. Current taxes on income, wealth, etc.	56
A.3. Social contributions and benefits	56
A.4. Other current transfers	57
A.5. Capital transfers, receivable	58

National Accounts of Portugal in 2018.

Measurement of institutional interrelations in distributive transactions.

Santos, S.

1. Introduction

This working paper complements other with the same title - National Accounts of Portugal in 2018 - and subtitle “Integrated economic accounts, matrix representations and extensions” (Santos, 2022) exploring some details related to the measurement of institutional interrelations in distributive transactions, with a view to facilitating and improving the construction and extension of matrix representations. Both are part of a larger work, of which they are intended to be a real illustrative case.

Since distributive transactions are flows recorded by current and capital accounts, this working paper focuses on them, within the scope of (non-financial) national accounts – produced and made available by the *Instituto Nacional de Estatística (INE)* - Statistics Portugal (Portuguese Statistical Office).

As in the initial working paper, the definitions and compilation of national accounts’ statistical data of Portugal, continue to be based on the current version (2008) of the SNA - System of National Accounts (ISWGNA,2009), although the aforementioned source of information follow the current version (2010) of the ESA - European System of National and Regional Accounts in the European Union (EU, 2013), which is the adaptation of SNA to the European Union.

The level of aggregation continues to be high, not only to continue the intention to confirm and show in a simpler way the consistency of the underlying system, but also by the unavailability or conditional availability of information. The codes corresponding to the transactions and institutional sectors also accompany (almost always) the explanation.

Although for some it was possible to go a little further, from the published information, we did not go beyond the first level of disaggregation in the institutional sectors and the second level in distributive transactions. We will try to show the possibility of going a little further in the grand totals of all distributive transactions, with the knowledge of the origin of the resources or the destination of the uses – origin "or" destination because, being the resources of some the uses of others, one is enough. Thus, resources and uses are worked out, from an expanded version of the part relating to the above-mentioned accounts (current and capital) of the IEA - Integrated Economic Accounts Table, compiled for the first working paper, from the accounts of the institutional sectors, published by *INE*.

While for transactions in products, or goods and services, already exist the supply and use tables, from which it is possible to study, in more or less detail, various aspects of relations between industries, we now explore an approach to the relations between institutional sectors with regard to distributive transactions. Let's say that, while the former feed the study of the system of production, the latter would feed the study of the system of distribution.

In fact, for the reality worked here, supply and use tables are published for 88 industries and 98 products, from which in the initial work (Santos, 2022) we treated in an aggregated way, for 10 industries and 10 products, the interrelations underlying the system of production, in the accounting

National Accounts of Portugal in 2018.

Measurement of institutional interrelations in distributive transactions.

Santos, S.

matrix presented in Section 4.2 d). Now, based on the published totals for 6 institutional sectors and 9 distributive transactions, we sought to address the interrelations underlying the distributive system by filling in the missing parts from proposal to expand the uses and resources of institutional sectors, by institutional sectors of destination and origin. We know that, in the national accounts, the detail of the relations between industries with regard to transactions in products can go as far as the supply and use tables allow. We explore here the idea that the detail of institutional interrelations with regard to distributive transactions can go as far as the availability of information on their origin or destination, in expanded IEAs or others, allow. Thus, knowing that *INE* and, certainly, other countries' statistical offices, have teams working on that information, the corresponding disclosure, at a level of detail considered non-confidential, would avoid many less correct estimates and would be a better starting point for the research of a greater detail with the use of statistics beyond of national accounts, such as the household surveys. In turn, information of the essential about the sources and the methods used in the underlying calculations (metadata), would, certainly, allow a more documented and rigorous research.

This work began with the treatment of a small series, for the period 2017-2020, of from-whom-to-whom matrices, for the above-mentioned transactions and institutional sectors, not published but provided particularly by *INE*, with the non-disclosure recommendation. Thus, from the first level of disaggregation in the institutional sectors and from the second level in the distributive transactions, coefficients representative of the proportions of each cell (interinstitutional flow) in the total of each row (of resources of the institutional sector) and of each column (of uses of the institutional sector) were calculated. The intention was, in a first approach, to explore the stability of these coefficients and identify behaviors so that they can, eventually, from broader series, update and design matrices of coefficients that can be applied to the published information, that is, totals in row and column. The failure of such an intention, the experience of this work and some contacts with someone involved in the production of those matrices (to whom the author is very grateful), led us to this working paper.

Thus, following these introductory notes, Chapter 2 describes, in a systematic way, the institutional sectors and transactions covered by this work and inserts them into the various forms of representation of national accounts. Chapter 3, for each of the nine categories that make up the group of transactions under study, starting from its main components and the published information for total resources and uses, compiled in an IEA (table), constructs from-whom-to-whom matrices by filling in the missing cells with the information from a proposal for an expanded IEA. Finally, these matrices are aggregated and their positioning in the in already worked matrix representations is identified. The concluding remarks, in Chapter 4, bring together a number of arguments in favour of publishing the proposed information.

2. Institutional sectors and distributive transactions, description and representation³

2.1. Meaning and disaggregation

Resuming the introduction to the aforementioned initial work (Santos, 2022), institutional sectors are mutually exclusive groups of institutional units, that is, entities with legal responsibility for their actions and various economic functions in the country. Depending on whether or not they are involved in the country's economic activities for a year or more, institutional units are considered resident and non-resident, respectively.

The resident institutional units constitute the "economy" (often associated with the S1 code) and are grouped on the basis of their main functions, behaviours and objectives. Two types of resident institutional units are distinguished: 1) persons or groups of persons; and, 2) legal or social entities whose existence is recognized by law or by society, regardless of the persons, or other entities, that may own or control them. The institutional sector corresponding to the first type is that of "households" (code S14). The second type is organized in the following sectors: "non-financial corporations" (code S11); "financial corporations" (code S12); "general government" (code S13); and "non-profit institutions serving households" (code S15).

All non-resident institutional units which have economic links with resident units constitute the institutional sector "rest of the world" (code S2).

The systems of national accounts, basic and European, foresee some levels of disaggregation for any of the above-mentioned sectors, for which some national accounts are produced. We will not go into that detail because we will not consider it.

In turn, distributive transactions (codes D) are one of the four groups of flows recorded by national accounts. They include, on the one hand, transactions in which the income generated in the process of production is distributed among labour, capital and general government, and, on the other hand, transactions involving redistribution of the income and wealth. As we will see in Chapter 3, this group has nine categories of transactions, in which there may be several levels of disaggregation, although we will not go beyond the first.

2.2. Positioning in flow accounts; origin and destination

Although the published information on distributive transactions integrates the accounts of the institutional sectors, not identifying the accounts of the SNA in which they are recorded, we resume here the compilation made in Santos (2022) in an IEA (table). Therefore, since those transactions are recorded in the current and capital (flow) accounts (the last, within the scope of accumulation

³ In order not to overload the description, the information in the first line of the header will not be mentioned.

accounts), we will position them in the corresponding parts, also treated in Chapter 2 – Section 2.1 and 2.2.a) of Santos (2022).

For the set to be more visible, some tables have a smaller font size, so when reading the file, it is suggested to use the zoom + function.

i) Current accounts - record the uses and resources of transactions associated, on the one hand, to the production and (intermediate and final) consumption of goods and services, and, on the other hand, to the generation, distribution and redistribution of income. The former are transactions in products. The latter are distributive transactions.

Given the focus of this work, we will exclude the production and external of goods and services accounts.

i.1) Primary distribution of income account – composed of (sub)accounts of generation of income and allocation of primary income, records the distribution of income generated in the process of production - added value, or domestic product, through the receipt and payment of remuneration of production factors and taxes, net of subsidies, on production and products. Tables 2.2-1 and 2 (a and b) represent them with records relating to four categories of distributive transactions: compensation of employees (code D1); taxes on production and imports (code D2); subsidies (code D3); and property income (code D4). The balancing item of the account, seen as a whole, is the balance of primary income, also known as national product or national income⁴.

i.2) Secondary distribution of income account and redistribution of income in kind account – record the (re)distribution of the balance of primary income – national income, through the receipt and payment of current transfers. Tables 2.2-3 (a and b) represent them with records relating to three categories of distributive transactions: current taxes on income, wealth, etc. (code D5); social contributions and benefits (code D6); and other current transfers (code D7). The partition of transactions relating to social contributions and benefits (code D6), on the one hand, into net social contributions (code D61) and social benefits except social transfers in kind (code D62) and, on the other hand, into social transfers in kind (code D63), allows the distinction between the secondary and tertiary distribution of income. The first, represented in the account with the same name, records the redistribution through the current transfers other than social transfers in kind and has as balancing item the available income. The second, represented by the redistribution of income in kind account, records the redistribution through the social transfers in kind, made by the general government and the NPISH to households, and has as balancing item the adjusted available income. The latter is equal to the former to the total economy and financial and non-financial corporations and is different for the remaining institutional sectors.

⁴ As can be seen in Section 2.1.b.5) of Santos (2022), p.11, the entrepreneurial income of non-financial and financial corporations can also be identified within its scope.

i.3) Use of income account – records the distribution of disposable income between final consumption and savings. Table 2.2-4 represents it in the variants corresponding to disposable income and adjusted disposable income, both recording a category of distributive transactions: the adjustment for the change in pension entitlements (code D8). The balancing item of this account is the saving.

ii) Capital account – within the scope of accumulation accounts, this account records: acquisitions and disposals of non-financial assets, produced and not produced; internal bookkeeping transactions linked to production (such as changes in inventories, acquisitions less disposals of valuables and consumption of fixed capital); and redistribution of wealth by means of capital transfers. Table 2.2-5 (a and b) represents it by recording the last category of distribution operations: capital transfers (code D9).

In this account, instead of uses and resources, we have changes in assets and changes in liabilities and net worth. On the other hand, for reasons beyond the scope of this work, capital transfers appear in the side of changes in liabilities and net worth with the distinction “receivable” and “payable”, the latter of which has a negative sign. We will treat “capital transfers payable” and “capital transfers receivable” in the same way as the uses and resources, respectively, of the other eight categories of transactions.

We have, therefore, the nine categories of distributive transactions properly positioned in the national accounts where they are recorded and a first approach to their meaning. For the first eight categories (codes D1 to D8) we have information on the total uses and resources of the various institutional sectors. For the last category (code D9) we have information on the total payable and receivable by the various institutional sectors. We know that the resources of some are the uses of others, or what some have to receive will be paid for by others. This is where institutional interrelations arise, the measurement of which may be possible from information regarding the origin of the resources (from-whom), or of the part to be received, or the destination of the uses (to-whom), or of the part to be paid. Thus, the possibilities of disaggregating the distributive transactions in matrix representations would be expanded, avoiding, in many cases, the use of intuition and subjectivity of its users.

National Accounts of Portugal in 2018 (at current prices, in millions of €).

Measurement of institutional interrelations in distributive transactions.

Santos, S.

Table 2.2-1a. Part of IEA relating to the primary distribution of income account - generation of income (sub)account - uses.

CURRENT ACCOUNTS

		Total	S.2 Rest of the World	S.1 Total of the Economy	S.15 NPISHs	S.14 Households	S.13 General Government	S.12 Financial Corporations	S.11 Non- Financial Corporations		
										Code	Transactions and balancing items
Uses											
Primary distribution of income account	Generation of income account									B1g	Value added, gross / Gross domestic product
										B1n	Value added, net / Net domestic product
		91 633		91 633	3 514	2 953	22 030	3 866	59 271	D1	Compensation of employees
		71 223		71 223	2 535	2 636	16 098	2 782	47 171	D11	Wages and salaries
		20 410		20 410	978	317	5 932	1 083	12 100	D12	Employers' social contributions
		31 298		31 298						D2	Taxes on production and imports
		28 075		28 075						D21	Taxes on products
		3 223		3 223	8	1 021	0	469	1 725	D29	Other taxes on production
		-2 393		-2 393						D3	Subsidies
				- 357						D31	Subsidies on products
		-2 036		-2 036	- 265	- 585	- 302	- 3	- 881	D39	Other subsidies on production
		63 245		63 245	650	13 042	5 548	4 264	39 742	B2g	Operating surplus, gross
		21 401		21 401		21 401				B3g	Mixed income, gross
		34 097		34 097	650	10 166	5 468	956	16 857	P51c1	Consumption of fixed capital on gross operating surplus
		1 919		1 919		1 919				P51c2	Consumption of fixed capital on gross mixed income
		29 149		29 149	0	2 876	80	3 308	22 885	B2n	Operating surplus, net
		19 481		19 481		19 481				B3n	Mixed income, net

National Accounts of Portugal in 2018 (at current prices, in millions of €).

Measurement of institutional interrelations in distributive transactions.

Santos, S.

Table 2.2-1b. Part of IEA relating to the primary distribution of income account - generation of income (sub)account - resources.

CURRENT ACCOUNTS									
		S.11 Non- Financial Corporations	S.12 Financial Corporations	S.13 General Government	S.14 Households	S.15 NPISHs	S.1 Total of the Economy	S.2 Rest of the World	Total
Code	Transactions and balancing items								
Resources									
B1g	Value added, gross / Gross domestic product	99 856	8 597	27 275	37 831	3 907	205 184		205 184
B1n	Value added, net / Net domestic product	82 999	7 640	21 807	25 746	3 257	169 168		169 168
D1	Compensation of employees								
D11	Wages and salaries								
D12	Employers' social contributions								
D2	Taxes on production and imports								
D21	Taxes on products								
D29	Other taxes on production								
D3	Subsidies								
D31	Subsidies on products								
D39	Other subsidies on production								
B2g	Operating surplus, gross								
B3g	Mixed income, gross								
P51c1	Consumption of fixed capital on gross operating surplus								
P51c2	Consumption of fixed capital on gross mixed income								
B2n	Operating surplus, net								
B3n	Mixed income, net								

Primary distribution of income account	Generation of income account	
--	------------------------------	--

Primary distribution of income account
Generation of income account

National Accounts of Portugal in 2018 (at current prices, in millions of €).
Measurement of institutional interrelations in distributive transactions.
Santos, S.

Table 2.2-2a. Part of IEA relating to the primary distribution of income account - allocation of primary income (sub)account - uses.

CURRENT ACCOUNTS

		Total	S.2 Rest of the World	S.1 Total of the Economy	S.15 NPISHs	S.14 Households	S.13 General Government	S.12 Financial Corporations	S.11 Non- Financial Corporations	Code	Transactions and balancing items
Uses											
Primary distribution of income account	Allocation of primary income account									B2g	Operating surplus, gross
										B3g	Mixed income, gross
										B2n	Operating surplus, net
										B3n	Mixed income, net
		461	461							D1	Compensation of employees
		402	402							D11	Wages and salaries
		59	59							D12	Employers' social contributions
										D2	Taxes on production and imports
										D21	Taxes on products
										D29	Other taxes on production
										D3	Subsidies
										D31	Subsidies on products
										D39	Other subsidies on production
		47 565	6 762	40 803	12	644	6 918	11 396	21 833	D4	Property income
		18 729	2 457	16 272	10	596	6 903	4 624	4 140	D41	Interest
		23 955	2 393	21 562				4 803	16 760	D42	Distributed income of corporations
		2 360	1 550	810	0	0	0	311	499	D43	Reinvested earnings on foreign direct investment
		2 019	362	1 657	0	0	0	1 657		D44	Other investment income
		501		501	2	48	16	0	436	D45	Rents
		200 173		200 173	799	137 141	30 229	4 997	27 007	B5g	Balance of primary incomes, gross / National income, gross
		164 157		164 157	149	125 056	24 762	4 041	10 149	B.5n	Balance of primary incomes, net / National income, net

National Accounts of Portugal in 2018 (at current prices, in millions of €).
Measurement of institutional interrelations in distributive transactions.
Santos, S.

Table 2.2-2b. Part of IEA relating to the primary distribution of income account - allocation of primary income (sub)account - resources.

CURRENT ACCOUNTS									
		S.11 Non- Financial Corporations	S.12 Financial Corporations	S.13 General Government	S.14 Households	S.15 NPISHs	S.1 Total of the Economy	S.2 Rest of the World	Total
Code	Transactions and balancing items								
Resources									
B2g	Operating surplus, gross	39 742	4 264	5 548	13 042	650	63 245		63 245
B3g	Mixed income, gross				21 401		21 401		21 401
B2n	Operating surplus, net	22 885	3 308	80	2 876	0	29 149		29 149
B3n	Mixed income, net				19 481		19 481		19 481
D1	Compensation of employees				91 941		91 941	153	92 095
D11	Wages and salaries				71 491		71 491	134	71 625
D12	Employers' social contributions				20 450		20 450	20	20 470
D2	Taxes on production and imports			30 942			30 942	356	31 298
D21	Taxes on products			27 852			27 852	224	28 075
D29	Other taxes on production			3 091			3 091	132	3 223
D3	Subsidies			- 799			- 799	-1 594	-2 393
D31	Subsidies on products			- 121			- 121	- 236	- 357
D39	Other subsidies on production			- 678			- 678	-1 358	-2 036
D4	Property income	9 098	12 129	1 457	11 401	161	34 246	13 319	47 565
D41	Interest	1 755	7 893	290	2 936	91	12 965	5 765	18 729
D42	Distributed income of corporations	6 274	3 238	707	6 904	112	17 236	6 720	23 955
D43	Reinvested earnings on foreign direct investment	936	615	49	0	- 50	1 550	810	2 360
D44	Other investment income	82	382	61	1 467	2	1 994	24	2 019
D45	Rents	50	0	351	94	7	501		501
B5g	Balance of primary incomes, gross / National income,								
B.5n	Balance of primary incomes, net / National income, net								

Allocation of primary income account
Primary distribution of income account

National Accounts of Portugal in 2018 (at current prices, in millions of €).
Measurement of institutional interrelations in distributive transactions.
Santos, S.

Table 2.2-3a. Part of IEA relating to the secondary distribution of income and redistribution of income in kind accounts - uses.

CURRENT ACCOUNTS

		Total	S.2 Rest of the World	S.1 Total of the Economy	S.15 NPISHs	S.14 Households	S.13 General Government	S.12 Financial Corporations	S.11 Non- Financial Corporations	Code	Transactions and balancing items
Uses											
Secondary distribution of income account										B5g	Balance of primary incomes, gross / National income, gross
										B.5n	Balance of primary incomes, net / National income, net
	20 931	413	20 518	13	13 601	40	1 073	5 791	D5	D5	Current taxes on income, wealth, etc.
	20 366	413	19 953	11	13 164	17	1 036	5 725	D51	D51	Taxes on income
	565		565	2	436	23	38	66	D59	D59	Other current taxes
	28 342	70	28 272		28 272				D61	D61	Net social contributions
	39 525	1 884	37 641	323	26	33 453	2 088	1 751	D62	D62	Social benefits other than social transfers in kind
	23 395	6 755	16 639	109	6 051	4 597	4 150	1 732	D7	D7	Other current transfers
	3 087	180	2 907	34	1 126	34	885	828	D71	D71	Net non-life insurance premiums
	3 122	314	2 808				2 808		D72	D72	Non-life insurance claims
	0		0			0			D73	D73	Current transfers within general government
	645	452	192			192			D74	D74	Current international cooperation
	14 842	5 809	9 033	75	4 925	2 672	457	904	D75	D75	Miscellaneous current transfers
	1 699		1 699			1 699			D76	D76	VAT- and GNI-based EU own resources
Redistribution of income in kind account	204 660		204 660	4 093	137 266	39 383	3 937	19 981	B6g	B6g	Disposable income, gross
	168 644		168 644	3 443	125 181	33 916	2 980	3 124	B6n	B6n	Disposable income, net
									B6g	B6g	Disposable income, gross
									B6n	B6n	Disposable income, net
	23 316		23 316	4 134		19 182			D63	D63	Social transfers in kind
	0		0								
	204 660		204 660	- 41	160 582	20 201	3 937	19 981	B7g	B7g	Adjusted disposable income, gross
	168 644		168 644	- 691	148 497	14 733	2 980	3 124	B7n	B7n	Adjusted disposable income, net

National Accounts of Portugal in 2018 (at current prices, in millions of €).

Measurement of institutional interrelations in distributive transactions.

Santos, S.

Table 2.2-3b. Part of IEA relating to the secondary distribution of income and redistribution of income in kind accounts – resources.

CURRENT ACCOUNTS									
		S.11	S.12	S.13	S.14	S.15	S.1	S.2	Total
		Non- Financial Corporations	Financial Corporations	General Government	Households	NPISHs	Total of the Economy	Rest of the World	
Code	Transactions and balancing items								
Resources									
B5g	Balance of primary incomes, gross / National income,	27 007	4 997	30 229	137 141	799	200 173		200 173
B.5n	Balance of primary incomes, net / National income, net	10 149	4 041	24 762	125 056	149	164 157		164 157
D5	Current taxes on income, wealth, etc.			20 679			20 679	252	20 931
D51	Taxes on income			20 114			20 114	252	20 366
D59	Other current taxes			565			565	0	565
D61	Net social contributions	1 751	2 069	23 860	26	394	28 100	150	28 250
D62	Social benefits other than social transfers in kind				39 295		39 295	231	39 525
D7	Other current transfers	497	4 182	2 706	8 754	3 345	19 484	3 911	23 395
D71	Net non-life insurance premiums		2 808				2 808	279	3 087
D72	Non-life insurance claims	473	877	33	1 495	20	2 897	225	3 122
D73	Current transfers within general government			0			0		0
D74	Current international cooperation			452			452	192	645
D75	Miscellaneous current transfers	24	497	2 221	7 259	3 325	13 327	1 515	14 842
D76	VAT- and GNI-based EU own resources						0	1 699	1 699
B6g	Disposable income, gross								
B6n	Disposable income, net								
B6g	Disposable income, gross	19 981	3 937	39 383	137 266	4 093	204 660		204 660
B6n	Disposable income, net	3 124	2 980	33 916	125 181	3 443	168 644		168 644
D63	Social transfers in kind				23 316		23 316		23 316
					0		0		0
B7g	Adjusted disposable income, gross								
B7n	Adjusted disposable income, net								

National Accounts of Portugal in 2018 (at current prices, in millions of €).
Measurement of institutional interrelations in distributive transactions.
Santos, S.

Table 2.2-4a. Part of IEA relating to the use of disposable income and of use of adjusted disposable income accounts - uses.

CURRENT ACCOUNTS

	Total	S.2 Rest of the World	S.1 Total of the Economy	S.15 NPISHs	S.14 Households	S.13 General Government	S.12 Financial Corporations	S.11 Non- Financial Corporations	Code	Transactions and balancing items
Uses										
Use of disposable income account									B6g	Disposable income, gross
									B6n	Disposable income, net
	166 706		166 706	4 134	127 737	34 834			P3	Final consumption expenditure
	73		73				73		D8	Adjustment for the change in pension entitlements
	38 046		38 046	- 41	9 601	4 549	3 956	19 981	B8g	Saving, gross
	2 030		2 030	- 691	-2 484	- 919	2 999	3 124	B8n	Saving, net
	- 517	- 517							B12	Current external balance
Use of adjusted disposable income account									B7g	Adjusted disposable income, gross
									B7n	Adjusted disposable income, net
	166 706		166 706	0	151 054	15 652			P4	Actual final consumption
	73		73				73		D8	Adjustment for the change in pension entitlements
	38 046		38 046	- 41	9 601	4 549	3 956	19 981	B8g	Saving, gross
	2 030		2 030	- 691	-2 484	- 919	2 999	3 124	B8n	Saving, net

National Accounts of Portugal in 2018 (at current prices, in millions of €).
Measurement of institutional interrelations in distributive transactions.
Santos, S.

Table 2.2-4b. Part of IEA relating to the use of disposable income and of use of adjusted disposable income accounts - resources.

CURRENT ACCOUNTS										
		S.11 Non- Financial Corporations	S.12 Financial Corporations	S.13 General Government	S.14 Households	S.15 NPISHs	S.1 Total of the Economy	S.2 Rest of the World	Total	
Code	Transactions and balancing items									
Resources										
B6g	Disposable income, gross	19 981	4 029	39 383	137 266	4 093	204 752		204 752	Use of disposable income account
B6n	Disposable income, net	3 124	3 072	33 916	125 181	3 443	168 736		168 736	
P3	Final consumption expenditure								166 706	
D8	Adjustment for the change in pension entitlements				73		73		73	
B8g	Saving, gross									
B8n	Saving, net									
B12	Current external balance									
B7g	Adjusted disposable income, gross	19 981	4 029	20 201	160 582	- 41	204 752		204 752	Use of adjusted disposable income account
B7n	Adjusted disposable income, net	3 124	3 072	14 733	148 497	- 691	168 736		168 736	
P4	Actual final consumption								166 706	
D8	Adjustment for the change in pension entitlements				73		73		73	
B8g	Saving, gross									
B8n	Saving, net									

National Accounts of Portugal in 2018 (at current prices, in millions of €).
Measurement of institutional interrelations in distributive transactions.
Santos, S.

Table 2.2.5a. Part of IEA relating to the capital account - changes in assets.

ACCUMULATION ACCOUNTS

	Total	S.2 Rest of the World	S.1 Total of the	S.15 NPISHs	S.14 Households	S.13 General Governme	S.12 Financial Corporatio	S.11 Non- Financial	Code	Transactions and balancing items
Changes in assets										
Capital account									B8n	<i>Saving, net</i>
	37 529		37 529	634	7 257	3 818	224	25 596	P5g	Gross capital formation
	1 513		1 513	- 16	-4 828	-1 650	- 732	8 739	P5n	Net capital formation
			35 953	626	7 127	3 790	224	24 187	P51g	Gross fixed capital formation
	-36 016		-36 016	- 650	-12 085	-5 468	- 956	-16 857	P51c	Consumption of fixed capital
	1 432		1 432	5	56	18	0	1 353	P52	Changes in inventories
	144		144	4	75	10	0	56	P53	Acquisitions less disposals of valuables
	0	307	- 307	- 3	-1 152	34	- 74	888	NP	Acquisitions less disposals of non-produced assets
									D9r	Capital transfers, receivable
									D91r	Capital taxes, receivable
									D92r	Investment grants, receivable
									D99r	Other capital transfers, receivable
									D9p	Capital transfers, payable
									D91p	Capital taxes, payable
									D92p	Investment grants, payable
									D99p	Other capital transfers, payable
	0	-2 563	2 563	- 255	3 980	- 716	4 508	-4 954	B9	<i>Net lending (+) / net borrowing (-)</i>

National Accounts of Portugal in 2018 (at current prices, in millions of €).

Measurement of institutional interrelations in distributive transactions.

Santos, S.

Table 2.2-5b. Part of IEA relating to the capital account - changes in liabilities and net worth.

		ACCUMULATION ACCOUNTS								
		S.11 Non- Financial	S.12 Financial Corporatio	S.13 General Governme	S.14 Households	S.15 NPISHs	S.1 Total of the	S.2 Rest of the World	Total	
Code	Transactions and balancing items									
										Changes in liabilities and net worth
B8n	<i>Saving, net</i>	3 124	2 999	- 919	-2 484	- 691	2 030		2 030	Capital account
P5g	Gross capital formation								37 529	
P5n	Net capital formation								1 513	
P51g	Gross fixed capital formation									
P51c	Consumption of fixed capital								-36 016	
P52	Changes in inventories								1 432	
P53	Acquisitions less disposals of valuables								144	
NP	Acquisitions less disposals of non-produced assets								0	
D9r	Capital transfers, receivable	1 751	1 200	978	491	421	4 841	173	5 014	
D91r	Capital taxes, receivable			0			0	0	0	
D92r	Investment grants, receivable	1 384	1	660	144	272	2 460	58	2 518	
D99r	Other capital transfers, receivable	367	1 199	318	348	149	2 380	115	2 496	
D9p	Capital transfers, payable	- 202	- 498	-2 392	- 6	- 5	-3 102	-1 912	-5 014	
D91p	Capital taxes, payable		0		0	0	0	0	0	
D92p	Investment grants, payable	0		- 638			- 638	-1 881	-2 518	
D99p	Other capital transfers, payable	- 202	- 498	-1 754	- 6	- 5	-2 465	- 31	-2 496	
B9	<i>Net lending (+) / net borrowing (-)</i>									

2.3. Matrix representations

Following Chapter 4 of Santos (2022), we distinguish matrix representations of national accounts in supply and use tables and accounting matrices.

The former, representative of the production and generation of primary income processes, and corresponding interrelations, allow the disaggregation, by industries and products, of production and distributive transactions (compensation of employees, taxes on production and imports, and subsidies), represented in the production account, goods and services account and generation of income account (sub-account of the primary distribution of income account). Input-Output matrices can be derived from them.

The latter broaden the scope of the previous ones to the income and wealth distribution process. They can represent only flows, that is, transactions and other flows, or flows and *stocks*, that is, they can represent all or part of the sequence of national accounts. In them, it is possible or, at least, feasible to measure institutional interrelations. With different treatments at the level of current and goods and services accounts, we identified national accounting and social accounting matrices – the first, representing exactly the sequence of national accounts, defined in the last two versions of the System of National Accounts (1993 and 2008); the second, in a version developed within the scope of the author's research work based on the works of R. Stone and G. Pyatt, in line with the first two versions of that System (1953 and 1968), focusing on issues of income (re)distribution⁵.

Having regard to the intention to measure the institutional interrelations in distributive transactions, which, as we saw in the previous section, are recorded in the current and capital (flow) accounts, we will restrict this work to the representations that cover them. Therefore, we will do below an approach based on what we have called complete (aggregated) versions of the matrices of transactions with

⁵ In addition to the references to this work, relating to the 2008 SNA (ISWGNA (2009)) and to one of the works by R. Stone (Stone, 1981), we complete this information with the following:

- ISWGNA. (1993). *System of National Accounts* 1993, Bruxelles (Bélgica)/Luxemburgo, Nova York (EUA), Paris (França), Washington, D.C. (EUA). [<https://unstats.un.org/unsd/nationalaccount/sna1993.asp>]
- UN (1968). *A System of National Accounts*, New York (ST/ESA/STAT/SER.F/2/Rev.3). [<https://unstats.un.org/unsd/nationalaccount/docs/1968SNA.pdf>]
- UN (1953). *A System of National Accounts and Supporting Tables*, New York (ST/ESA/STAT/SER.F/2). [<https://unstats.un.org/unsd/nationalaccount/docs/1953SNA.pdf>]
- Stone, R. (1986) "Nobel Memorial Lecture 1984. The Accounts of Society", *Journal of Applied Econometrics*, 1(1), 5-28. [<http://dx.doi.org/10.1002/jae.3950010103>]
- Pyatt, G. (1991) "Fundamentals of Social Accounting". *Economic Systems Research*, 3(3), 315-341. [<https://doi.org/10.1080/09535319100000024>]

The last two are the most representative in the framework of this work.

It should also be recalled that the first two versions of the SNA (1953 and 1968) were prepared by a group of specialists in national income under the coordination of R. Stone, to whom G. Pyatt was an assistant in the Department of Applied Economics, at the University of Cambridge.

gross balancing items. We leave for the end of the next chapter the approach of a part of a disaggregated version, presented in Santos (2022), Section 4.2d), pp. 77-94.

In both the case of the national accounting matrix and the social accounting matrix, each column and row pair represents an account with the uses represented in the column and the resources in the row. On the other hand, reflecting the existence of equilibrium in the accounts, the sum of each column is equal to the sum of the corresponding row.

Tables 2.3-1 and 2.3-2 are a fusion of the complete and simplified versions of the national and social accounting matrices presented in Santos (2022) - in Sections 4.2a), pp. 51-60, and 4.2c), pp. 68-76, respectively. These are matrices representing the totals of transactions recorded in the sequence of national accounts, where to the description of the accounts, in the rows and columns, preceded by the designation of the simplified version in curved brackets, we added the numbers of the tables in which they are represented in the previous section, in square brackets. In turn, to the description of the cells that explicitly include distributive transactions in which institutional interrelations can be identified, in addition to a thicker border, we added their identifying codes, to facilitate the association with the development that we will make in Chapter 3, where their implicit inclusion will also be mentioned.

National Accounts of Portugal in 2018 (at current prices, in millions of €).
Measurement of institutional interrelations in distributive transactions.
Santos, S.

Table 2.3-1. Aggregated national accounting matrix of transactions with gross balancing items.

Uses/Changes in Assets Resources/Changes in Liabilities and Net Worth		Economy							V. Rest of the world account [Table 2.2-1,2,3,4 and 5]	Total	
		(0) Goods and services account	Current accounts				Accumulation accounts				
			(I) Production	(II.1) Primary distribution of income [Tables 2.2-1 and 2]	(II.2) Secondary distribution of income [Table 2.2-3]	(II.4) Use of income [Table 2.2-4]	(III.1) Capital [Table 2.2-5]	(III.2) Financial			
Economy	(0) Goods and services account		Intermediate consumption = 189 269			Final consumption = 166 706	Gross capital formation = 37 529		Exports = 89 144	482 647	
	Current accounts	(I) Production	Output of goods and services + Taxes on products, net of subsidies 394 453							394 453	
		(II.1) Primary distribution of income [Tables 2.2-1 and 2]		<i>Value added, gross/Gross domestic product (GDP)</i> = 205 184	Property income (D4) = 27 484					Compensation of employees (D1)+ Property income (D4) = 7 224	239 892
		(II.2) Secondary distribution of income [Table 2.2-3]			<i>Balance of primary incomes, gross / National income, gross (GNI) =</i> 200 173	Current transactions (D5,D61,D62,D7) = 98 526				Current transactions (D5,D61,D62,D7) = 9 122	307 822
		(II.4) Use of income [Table 2.2-4]				<i>Gross Disposable Income (GDI) =</i> 204 752	Adjustment for the change in pension funds reserve (D8) = 73				204 825
	Accumulation accounts	(III.1) Capital [Table 2.2-5]					<i>Gross Saving =</i> 38 046	Capital transfers (D9) + Aquisitions less disposals of non-produced assets = 2 622		Capital transfers (D9) +Acquisitions less disposals of non-produced assets = 2 219	42 887
		(III.2) Financial						<i>Net lending (+) /borrowing (-) =</i> 2 563	Net acquisitions of financial assets/ liabilities = 11 457	Net acquisitions of liabilities + Statistical discrepancy = 9 871	23 892
(V) Rest of the world account [Tables 2.2-1,2,3,4 and 5]		Imports = 88 194		Compensation of employees (D1)+ Property income (D4)+ Taxes on production and imports, net of subsidies (D2-D3) = 12 235	Current transactions (D5,D61,D62,D7) = 4 544		Capital transfers (D9) = 173	Net acquisitions of financial assets = 12 434		117 580	
Total		482 647	394 453	239 892	307 822	204 825	42 887	23 892	117 580		

National Accounts of Portugal in 2018 (at current prices, in millions of €).
Measurement of institutional interrelations in distributive transactions.
Santos, S.

Table 2.3-2. Aggregated social accounting matrix of transactions with gross balancing items.

Uses/Changes in assets Resources/ Changes in liabilities and net worth		Economy						(rw) Rest of the world account [Tables 2.2-1,2,3,4 and 5]	Total	
		Production accounts			Institutions accounts					
		(f) Factors of production [Tables 2.2-1 and 2]	(a) Activities (industries)	(p) Products (goods and services)	(dic) Current [Tables 2.2-3 and 4]	(dik) Capital [Table 2.2-5]	(dif) Financial			
Economy	Production accounts	(f) Factors of production [Tables 2.2-1e2]	0	Value added, gross [excluding taxes on production and imports, net of subsidies] = 176 279	0	0	0	0	Compensation of employees (D1) + Property income (D4) = 7 224	183 503
		(a) Activities (industries)	0	0	Output of goods and services = 366 734	0	0	0	0	366 734
		(p) Products (goods and services)	0	Intermediate consumption = 189 269	Trade and transport margins = 0	Final consumption = 166 706	Gross capital formation = 37 529	0	Exports = 89 144	482 647
	Institutions accounts	(dic) Current [Tables 2.2-3 and 4]	National income, gross [excluding taxes on production and imports, net of subsidies] = 170 030	Other taxes on production, net of subsidies (D29-D39) = 2 412	Taxes on products, net of subsidies (D21-D31) = 27 730	Current transactions (D5,D61, D62,D7, D8) = 98 599	0	0	Current transactions (D5,D61,D62,D7) = 9 122	307 895
		(dik) Capital [Table 2.2-5]	0	0	0	Gross saving = 38 046	Capital transfers (D9) + Aquisitions less disposals of non-produced assets = 2 622	0	Capital transfers (D9) + Acquisitions less disposals of non-produced assets = 2 219	42 887
		(dif) Financial	0	0	0	0	Net lending (+) / net borrowing (-) = 2 563	Net acquisitions of financial assets / liabilities = 11 457	Net acquisitions of liabilities + Statistical discrepancy = 9 871	23 892
		(rw) Rest of the world account [Tables 2.2-1,2,3,4 and 5]		Compensation of employees (D1)+ Property income (D4) = 13 472	Other net taxes on production, net of subsidies (D29-D39) = -1 225	Imports + Taxes on products, net of subsidies (D21-D31) = 88 182	Current transactions (D5,D61,D62,D7) = 4 544	Capital transfers (D9) = 173	Net acquisitions of financial assets = 12 434	117 580
Total		183 503	366 734	482 647	307 895	42 887	23 892	117 580		

3. Identification of institutional interrelations in distributive transactions. Construction of from-whom-to-whom matrices⁶

For reasons of coherence with previous working paper (Santos, 2022) and with the previous parts of this, we will maintain in this chapter the statistical information unit in millions (10^6) of euros, with zero decimal places, although some cases could become more comprehensible in thousands (10^3) of euros and some rounding errors could be avoided.

Once again, for the set to be more visible, some tables have a smaller font size, so when reading the file, it is suggested to use the zoom + function.

We will continue to represent uses in column and resources in row.

For a better understanding of the various steps in the construction of from-whom-to-whom matrices, we will represent in italics the values calculated from those we are considering as available.

In the categories of transactions for which we have information to work with at the second level of disaggregation, the totals will be calculated by the sum of the components.

In Sections 3.1 to 3.9, we will begin by identifying the positioning of each category of transactions in the flow accounts and matrix representations presented in Sections 2.2 e 2.3, respectively.

3.1. Compensation of employees

With two components - wages and salaries and employers' social contributions, the compensation of employees (code D1) is recorded in both subaccounts of primary distribution of income account. The generation of income (sub)account records it as uses of the total economy and its five institutional sectors - Table 3.1-1. The allocation of primary income (sub)account records it as resources of households and the rest of the world and as uses of the rest of the world - Table 3.1-2.

Table 3.1-1. Recording of compensation of employees in the generation of income account (excerpt from Table 2.2-1a)

S.1 Total of the Economy	S.15 NPISHs	S.14 Households	S.13 General Government	S.12 Financial Corporations	S.11 Non- Financial Corporations	Code Transactions and balancing items	
Uses							
91 633	3 514	2 953	22 030	3 866	59 271	D1	Compensation of employees
71 223	2 535	2 636	16 098	2 782	47 171	D11	Wages and salaries
20 410	978	317	5 932	1 083	12 100	D12	Employers' social contributions

⁶ In order not to overload the description, the information in the first line of the header will not be mentioned.

National Accounts of Portugal in 2018 (at current prices, in millions of €).

Measurement of institutional interrelations in distributive transactions.

Santos, S.

Table 3.1-2. Recording of compensation of employees in the allocation of primary income account (excerpts from Tables 2.2-2a and b).

S.2 Rest of the World			S.14 Households	S.2 Rest of the World
	Code	Transactions and balancing items		
Uses			Resources	
461	D1	Compensation of employees	91 941	153
402	D11	Wages and salaries	71 491	134
59	D12	Employers' social contributions	20 450	20

In terms of matrix representations, it is possible to explicitly identify these transactions with the rest of the world - cells (V, II.1) and (II.1, V) in the national accounting matrix (Table 2.3 -1); and cells (rw, f) and (f, rw) in the social accounting matrix (Table 2.3-2). In turn, transactions in the economy are implicit in the cells representing value added and national income – cells (II.1, I) and (II.2, II.1) in the national accounting matrix; cells (f, a) and (dic, f) in the social accounting matrix.

In the construction of from-whom-to-whom matrices from the information in the tables above, it is possible to fill in the rows and columns of the totals (S1+S2) and deduce the amounts corresponding to some cells, as can be seen in Table 3.1-3.

Thus, for both components of compensation of employees, we have information regarding the total uses (in column):

- of all sectors of resident institutional units (S1), in the economy and in the rest of the world (S1+S2), amounting to 91 633;
- of the rest of the world, that is, of non-resident institutional units (S2), in the economy (S1), amounting to 461.

In turn, also for both components of compensation of employees, we have information regarding the total resources (in row):

- of households (S14), from the economy and the rest of the world (S1+S2), amounting to 91 941;
- of the rest of the world (S2), from the economy (S1), amounting to 153.

With the above information, knowing that the resources of the rest of the world are uses of the economy and vice versa, we can calculate the total transactions (that we are analysing) in the economy, that is, only between resident institutional units, in this case: $91\,480 = 91\,633 - 153 = 91\,941 - 461$.

National Accounts of Portugal in 2018 (at current prices, in millions of €).

Measurement of institutional interrelations in distributive transactions.

Santos, S.

Table 3.1-3. Possible filling in of the from-whom-to-whom matrices relating to compensation of employees, from the subaccounts of the primary income distribution account.

D11 Wages and salaries

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11								
S12								
S13								
S14						71 090	402	71 491
S15								
S1	0	0	0	0	0	71 090	402	71 491
S2						134		134
S1+S2	47 171	2 782	16 098	2 636	2 535	71 223	402	71 625

D12 Employers' social contributions

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11								
S12								
S13								
S14						20 390	59	20 450
S15								
S1	0	0	0	0	0	20 390	59	20 450
S2						20		20
S1+S2	12 100	1 083	5 932	317	978	20 410	59	20 470

D1 Compensation of employees (D11+D12)

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11								
S12								
S13								
S14						91 480	461	91 941
S15								
S1	0	0	0	0	0	91 480	461	91 941
S2						153		153
S1+S2	59 271	3 866	22 030	2 953	3 514	91 633	461	92 095

Since, on the one hand, in the economy (S1) only households (S14) have resources and all sectors (S1) have uses and, on the other hand, the rest of the world (S2) has resources and uses, we can now deduce the following:

- of the total received by households (S14), 91 480 originates from the economy (S1) and 461 from the rest of the world (S2), we do not know the distribution of the first amount by institutional sectors (S11-S15);
- we do not know the origin by institutional sectors (S11-S15) of the total resources of the rest of the world (S2), that is, 153;
- of the total used by the sectors of the economy (S1), 91 480 have as destination the economy (S1), that is, the households (S14) and 153 the rest of the world (S2), we do not know the distribution of both values by institutional sectors (S11-S15).

Note that the reading made in c) is equivalent to that made in a) and b), which means that the unknown parts of our matrices correspond to the shaded parts, that is, the origin of the resources of households and the rest of the world, or the destination of the uses of all institutional sectors.

National Accounts of Portugal in 2018 (at current prices, in millions of €).

Measurement of institutional interrelations in distributive transactions.

Santos, S.

The information we had access to did not help to overcome this lack of knowledge, however, the available amounts, represented in Tables 3.1-1 and 3.1-2 and the deductions made from them and explained in Table 3.1-3 are sufficient for the construction of the aggregated matrices, as we will see in Section 3.10. They also serve as control totals in possible disaggregation of the parts in which they are included, either explicitly or implicitly, see, for example, in Section 4.2, of Santos (2022), the parts relating to: value added, in d.1), p.82, and national income (part relating to labor income), in d.8), p.89.

3.2. Taxes on production and imports

With two components - taxes on products and other taxes on production, the taxes on production and imports (code D2) are recorded in both subaccounts of primary distribution of income account⁷. The generation of income (sub)account records them as uses of the total economy and its five institutional sectors, without apportioning the taxes on the products among the latter - Table 3.2-1. The allocation of primary income (sub)account records them as resources of the general government and the rest of the world - Table 3.2-2.

Table 3.2-1. Recording of taxes on production and imports in the generation of income account (excerpt from Table 2.2-1a).

S.1 Total of the Economy	S.15 NPISHs	S.14 Households	S.13 General Government	S.12 Financial Corporations	S.11 Non- Financial Corporations	Code	Transactions and balancing items
Uses							
31 298						D2	Taxes on production and imports
28 075						D21	Taxes on products
3 223	8	1 021	0	469	1 725	D29	Other taxes on production

Table 3.2-2. Recording of taxes on production and imports in the allocation of primary income account (excerpt from Table 2.2-2b).

		S.13 General Government	S.2 Rest of the World	Total
Code	Transactions and balancing items			
Resources				
D2	Taxes on production and imports	30 942	356	31 298
D21	Taxes on products	27 852	224	28 075
D29	Other taxes on production	3 091	132	3 223

⁷ Total taxes on products is also recorded as resource of the total economy in the production account and in the goods and services account.

National Accounts of Portugal in 2018 (at current prices, in millions of €).

Measurement of institutional interrelations in distributive transactions.

Santos, S.

These transactions often appear net of subsidies, that is, deducted from the corresponding subsidy amounts, which we will see in the following section. This is the case of matrix representations, in which in the national accounting matrix (Table 2.3-1) it is possible to identify them, on the one hand, explicitly in the transactions with the rest of the world - cell (V, II.I), and on the other hand, once again, implicitly in the transactions in the economy - cells (II.1, I) and (II.2, II.1), representative of value added and national income. In turn, in the social accounting matrix (Table 2.3-2) it is possible to identify them explicitly, not only in transactions with the rest of the world - cells (rw, a) and (rw, p), but also in transactions in the economy – cells (dic, a) and (dic, p).

In the construction of from-whom-to-whom matrices from the information in the tables above, it is possible to fill in the rows and columns of the totals (S1+S2) and deduce the amounts corresponding to some cells, as can be seen in Table 3.2-3.

Table 3.2-3. Possible filling in of the from-whom-to-whom matrices relating to taxes on production and imports, from the subaccounts of the primary income distribution account.

D21 Taxes on products

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11								
S12								
S13						27 852		27 852
S14								
S15								
S1	0	0	0	0	0	27 852		27 852
S2						224		224
S1+S2						28 075		28 075

D29 Other taxes on production

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11								
S12								
S13						3 091		3 091
S14								
S15								
S1	0	0	0	0	0	3 091		3 091
S2						132		132
S1+S2	1 725	469	0	1 021	8	3 223		3 223

D2 Taxes on production and imports (D21+D22)

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11								
S12								
S13						30 942		30 942
S14								
S15								
S1	0	0	0	0	0	30 942		30 942
S2						356		356
S1+S2						31 298		31 298

Thus, for both components of taxes on production and imports, we can see that 31 298 corresponds to the total uses (in column) of the economy (S1), in the economy and in the rest of the world (S1+S2).

In turn, also for both components of taxes on production and imports, we have information regarding total resources (in row):

- of the general government (S13), from the economy (S1), amounting to 30 942;
- of the rest of the world (S2), from the economy (S1), amounting to 356.

Since the rest of the world only has resources, which are uses of the economy, we can see that the total of transactions (which we are analysing) in the economy, that is, only between resident institutional units, is $30\,942 = 31\,928 - 356$, corresponding to the resources of the general government.

In this case, because we do not know the distribution by institutional sectors (S11-S15) of the uses related to taxes on products, it is not possible to make further deductions, which means that the unknown parts of our matrices correspond to the shaded parts in Table 3.2-3.

Once again, the information we had access to did not help to overcome this lack of knowledge, however, the available amounts, represented in Tables 3.2-1 and 3.2-2 and the few deductions made from them and explained in Table 3.2-3 are sufficient for the construction of the aggregated matrices, as we will see in Section 3.10. They also serve as control totals in possible disaggregations of the parts in which they are included, either explicitly or implicitly, see, for example, in Section 4.2, of Santos (2022), d.5), p.86, and d.6), p.87.

3.3. Subsidies

With two components – subsidies on products and other subsidies on production, subsidies (code D3) are recorded in both subaccounts of the primary income distribution account. As mentioned in the previous section, subsidies are often deducted from the values of taxes on production and imports (code D2) and, as such, their registration is identical to them and preceded by the minus sign⁸. Therefore, the generation of income account records them as uses of the total economy and its five institutional sectors, without apportioning the subsidies on products among the latter - Table 3.3-1. The allocation of primary income account, in turn, records them as resources of general government and the rest of the world - Table 3.3-2.

⁸ Similarly to taxes on products, the total of subsidies on products is also recorded (preceded by the minus sign) as resource of the total economy in the production account and the goods and services account.

National Accounts of Portugal in 2018 (at current prices, in millions of €).

Measurement of institutional interrelations in distributive transactions.

Santos, S.

Table 3.3-1. Recording of subsidies in the in the generation of income account (excerpt from Table 2.2-1a).

S.1 Total of the Economy	S.15 NPISHs	S.14 Households	S.13 General Government	S.12 Financial Corporations	S.11 Non- Financial Corporations	Code	Transactions and balancing items
Uses							
-2 393						D3	Subsidies
-357						D31	Subsidies on products
-2 036	-265	-585	-302	-3	-881	D39	Other subsidies on production

Table 3.3-2. Recording of subsidies in the allocation of primary income account (excerpt from Table 2.2-2b).

		S.13 General Government	S.2 Rest of the World	Total
Code	Transactions and balancing items			
Resources				
D3	Subsidies	-799	-1 594	-2 393
D31	Subsidies on products	-121	-236	-357
D39	Other subsidies on production	-678	-1 358	-2 036

Since the matrix representations presented above consider taxes on production and imports net of subsidies, we remit to the previous section the identification of their positioning.

With regard to the construction of from whom-to-whom matrices from the information in the Tables 3.3-1 and 2, as in the previous section, it is possible to fill in the rows and columns of the totals (S1+S2) and deduce the amounts corresponding to some cells, as can be seen in Table 3.3-3.

National Accounts of Portugal in 2018 (at current prices, in millions of €).

Measurement of institutional interrelations in distributive transactions.

Santos, S.

Table 3.3-3. Possible filling in of the from-whom-to-whom matrices relating to subsidies, from the subaccounts of the primary income distribution account.

D31 Subsidies on products

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11								
S12								
S13						-121		-121
S14								
S15								
S1	0	0	0	0	0	-121		
S2						-236		-236
S1+S2						-357		-357

D39 Other subsidies on production

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11								
S12								
S13						-678		-678
S14								
S15								
S1	0	0	0	0	0	-678		-678
S2						-1 358		-1 358
S1+S2	-881	-3	-302	-585	-265	-2 036		-2 036

D3 Subsidies (D31+D32)

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11								
S12								
S13						-799		-799
S14								
S15								
S1	0	0	0	0	0	-799		-799
S2						-1 594		-1 594
S1+S2						-2 393		-2 393

The treatment of this category of transactions could also be done with positive amounts, transposing the matrices represented in Table 3.3-3.

The addition of the matrices represented in Tables 3.2-3 and 3.3-3 would show us the possible filling in of the from-whom-to-whom matrices relating to taxes on production and importation net of subsidies, with a reading and remarks similar to those of the previous section, with the due adaptations.

3.4. Property income

With five components - interest, distributed income of corporations, reinvested earnings on foreign direct investment, investment income disbursements and rent, property income (code D4) are recorded in the allocation of primary income account (subaccount of the primary income distribution account) - Table 3.4-1.

National Accounts of Portugal in 2018 (at current prices, in millions of €).

Measurement of institutional interrelations in distributive transactions.

Santos, S.

Table 3.4-1. Recording of property income in the allocation of primary income account (excerpts from Tables 2.2-2a and b).

Total	S.2 Rest of the World	S.1 Total of the Economy	S.15 NPISHs	S.14 Households	S.13 General Government	S.12 Financial Corporations	S.11 Non- Financial Corporations	Code Transactions and balancing items	
Uses									
47 565	6 762	40 803	12	644	6 918	11 396	21 833	D4	Property income
18 729	2 457	16 272	10	596	6 903	4 624	4 140	D41	Interest
23 955	2 393	21 562				4 803	16 760	D42	Distributed income of corporations
2 360	1 550	810	0	0	0	311	499	D43	Reinvested earnings on foreign direct investment
2 019	362	1 657	0	0	0	1 657		D44	Other investment income
501		501	2	48	16	0	436	D45	Rents

		S.11 Non- Financial Corporations	S.12 Financial Corporations	S.13 General Government	S.14 Households	S.15 NPISHs	S.1 Total of the Economy	S.2 Rest of the World	Total
Code Transactions and balancing items									
Resources									
D4	Property income	9 098	12 129	1 457	11 401	161	34 246	13 319	47 565
D41	Interest	1 755	7 893	290	2 936	91	12 965	5 765	18 729
D42	Distributed income of corporations	6 274	3 238	707	6 904	112	17 236	6 720	23 955
D43	Reinvested earnings on foreign direct investment	936	615	49	0	-50	1 550	810	2 360
D44	Other investment income	82	382	61	1 467	2	1 994	24	2 019
D45	Rents	50	0	351	94	7	501		501

Within the scope of matrix representations, the national accounting matrix (Table 2.3-1), allows the explicit identification of this category of transactions both in the economy - cell (II.1, II.1) and with the rest of the world - cells (V, II.1) and (II.1, V). The same does not happen with the social accounting matrix (Table 2.3-2), which only allows the explicit identification of transactions with the rest of the world - cells (rw, f) and (f, rw), with transactions in the economy, once again, implicit in the cells representing value added and national income - cells (f, a) and (dic, f).

When constructing from-whom-to-whom matrices from the information in the tables above, it is possible, once again, to fill in the rows and columns of the totals (S1+S2) and deduce the amounts corresponding to some cells, as can be seen in Table 3.4-2.

National Accounts of Portugal in 2018 (at current prices, in millions of €).

Measurement of institutional interrelations in distributive transactions.

Santos, S.

Table 3.4-2. Possible filling in of the from-whom-to-whom matrices relating to property income, from the allocation of primary income account.

D41 Interest									D44 Other investment income								
	S11	S12	S13	S14	S15	S1	S2	S1+S2		S11	S12	S13	S14	S15	S1	S2	S1+S2
S11	1 086	360	85	94	8	1 633	122	1 755	S11		61				61	21	82
S12	1 505	2 050	2 068	499	0	6 122	1 772	7 893	S12		162				162	220	382
S13	43	148	0	2	0	194	96	290	S13		30				30	31	61
S14	764	740	986	0	0	2 490	446	2 936	S14		1 377				1 377	90	1 467
S15	1	65	3	0	0	69	22	91	S15		2				2	0	2
S1	3 400	3 363	3 142	595	8	10 507	2 457	12 965	S1	0	1 633	0	0	0	1 633	362	1 994
S2	739	1 262	3 761	1	2	5 765	5 765	5 765	S2		24				24		24
S1+S2	4 140	4 624	6 903	596	10	16 272	2 457	18 729	S1+S2	0	1 657	0	0	0	1 657	362	2 019
D42 Distributed income of corporations									D45 Rents								
	S11	S12	S13	S14	S15	S1	S2	S1+S2		S11	S12	S13	S14	S15	S1	S2	S1+S2
S11	3 190	1 305				4 494	1 780	6 274	S11	48	0			2	50		50
S12	1 721	934				2 655	584	3 238	S12						0		0
S13	152	555				707		707	S13	351					351		351
S14	6 750	124				6 874	30	6 904	S14	37	0	16	41		94		94
S15	111	1				112		112	S15				7		7		7
S1	11 924	2 919	0	0	0	14 842	2 393	17 236	S1	435	0	16	48	2	501	0	501
S2	4 836	1 884				6 720	6 720	6 720	S2						0		0
S1+S2	16 760	4 803	0	0	0	21 562	2 393	23 955	S1+S2	435	0	16	48	2	501	0	501
D43 Reinvested earnings on foreign direct investment									D4 Property income (D41+D42+D43+D44+D45)								
	S11	S12	S13	S14	S15	S1	S2	S1+S2		S11	S12	S13	S14	S15	S1	S2	S1+S2
S11						0	936	936	S11	4 324	1 726	85	94	10	6 239	2 859	9 098
S12						0	615	615	S12	3 226	3 146	2 068	499	0	8 939	3 190	12 129
S13						0	49	49	S13	546	734	0	2	0	1 281	176	1 457
S14						0		0	S14	7 551	2 242	1 002	41	0	10 836	565	11 401
S15						0	- 50	- 50	S15	112	67	3	7	0	190	- 28	161
S1	0	0	0	0	0	0	1 550	1 550	S1	15 759	7 914	3 157	643	10	27 484	6 762	34 246
S2	499	311				810	810	810	S2	6 074	3 481	3 761	1	2	13 319		13 319
S1+S2	499	311	0	0	0	810	1 550	2 360	S1+S2	21 833	11 396	6 918	644	12	40 803	6 762	47 565

The fact that we are working with a category of transactions with five components and that all of them record uses and resources of all, or almost all, institutional sectors, restricts us to the possibility of deducing only the total transactions in the economy.

Thus, from the column reading, we know that the resident institutional units (S1) recorded a total of uses in the economy and in the rest of the world (S1+S2) in the amount of 40 803. Because the resources of the rest of the world (S2), which totalled 13 319, are uses of the economy (S1), we can deduce the amount of transactions in the economy (S1), that is, among the resident institutional units: $27\,484 = 40\,803 - 13\,319$.

We arrive at the same figure by reading in row, that is, starting from the total resources of the resident institutional units (S1), from the economy and the rest of the world (S1+S2), that is, 34 246. This time we have uses of the rest of the world (S2), which total 6 762, which are resources of the economy (S1), which allow us to deduce the amount of transactions in the economy (S1), that is, among the resident institutional units: $27\,484 = 34\,246 - 6\,762$.

Moreover, we do not know the entire network of institutional interrelations of property income, and its components, represented by the shaded parts in Table 3.4-2. Such lack of knowledge could be overcome with information on the institutional sectors of destination of the uses or of origin of the resources.

National Accounts of Portugal in 2018 (at current prices, in millions of €).

Measurement of institutional interrelations in distributive transactions.

Santos, S.

Table 3.4-3, by expanding the first part of Table 3.4-1, illustrates the first case. Table 3.4-4, in turn, shows how this information makes it possible to fill in all the from-whom-to-whom matrices related to the category of transactions under analysis.

Table 3.4-3. Recording of the uses of property income in the allocation of primary income account, extended to destination institutional sectors.

Total	S.2 Rest of the World	S.1 Total of the Economy	S.15 NPISHs	S.14 Households	S.13 General Government	S.12 Financial Corporations	S.11 Non- Financial Corporations		
								Code	Transactions and balancing items
Uses									
47 565	6 762	40 803	12	644	6 918	11 396	21 833	D4	Property income
9 098	2 859	6 239	10	94	85	1 726	4 324		S11 - Non-Financial Corporations
12 129	3 190	8 939	0	499	2 068	3 146	3 226		S12 - Financial Corporations
1 457	176	1 281	0	2	0	734	546		S13 - General Government
11 401	565	10 836	0	41	1 002	2 242	7 551		S14 - Households
161	-28	190	0	7	3	67	112		S15 - NPISHs
13 319	0	13 319	2	1	3 761	3 481	6 074		S2 - Rest of the World
18 729	2 457	16 272	10	596	6 903	4 624	4 140	D41	Interest
1 755	122	1 633	8	94	85	360	1 086		S11 - Non-Financial Corporations
7 893	1 772	6 122	0	499	2 068	2 050	1 505		S12 - Financial Corporations
290	96	194	0	2	0	148	43		S13 - General Government
2 936	446	2 490	0	0	986	740	764		S14 - Households
91	22	69	0	0	3	65	1		S15 - NPISHs
5 765	0	5 765	2	1	3 761	1 262	739		S2 - Rest of the World
23 955	2 393	21 562				4 803	16 760	D42	Distributed income of corporations
6 274	1 780	4 494				1 305	3 190		S11 - Non-Financial Corporations
3 238	584	2 655				934	1 721		S12 - Financial Corporations
707	0	707				555	152		S13 - General Government
6 904	30	6 874				124	6 750		S14 - Households
112	0	112				1	111		S15 - NPISHs
6 720	0	6 720				1 884	4 836		S2 - Rest of the World
2 360	1 550	810	0	0	0	311	499	D43	Reinvested earnings on foreign direct investment
936	936	0							S11 - Non-Financial Corporations
615	615	0							S12 - Financial Corporations
49	49	0							S13 - General Government
0	0	0							S14 - Households
-50	-50	0							S15 - NPISHs
810		810				311	499		S2 - Rest of the World
2 019	362	1 657	0	0	0	1 657		D44	Other investment income
82	21	61				61			S11 - Non-Financial Corporations
382	220	162				162			S12 - Financial Corporations
61	31	30				30			S13 - General Government
1 467	90	1 377				1 377			S14 - Households
2	0	2				2			S15 - NPISHs
24	0	24				24			S2 - Rest of the World
501		501	2	48	16	0	436	D45	Rents
50		50	2			0	48		S11 - Non-Financial Corporations
0		0				0	0		S12 - Financial Corporations
351		351				0	351		S13 - General Government
94		94		41	16	0	37		S14 - Households
7		7		7		0	0		S15 - NPISHs
0		0				0	0		S2 - Rest of the World

National Accounts of Portugal in 2018 (at current prices, in millions of €).

Measurement of institutional interrelations in distributive transactions.

Santos, S.

Table 3.4-4. Filling in of the from-whom-to-whom matrices relating to property income, from the corresponding uses in the allocation of primary income account, extended to destination institutional sectors.

D41 Interest

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11	1 086	360	85	94	8	1 633	122	1 755
S12	1 505	2 050	2 068	499		6 121	1 772	7 893
S13	43	148	0	2		194	96	290
S14	764	740	986	0		2 490	446	2 936
S15	1	65	3	0		69	22	91
S1	3 400	3 363	3 142	595	8	10 507	2 457	12 964
S2	739	1 262	3 761	1	2	5 765		5 765
S1+S2	4 140	4 624	6 903	596	10	16 272	2 457	18 729

D44 Other investment income

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11		61				61	21	82
S12		162				162	220	382
S13		30				30	31	61
S14		1 377				1 377	90	1 467
S15		2				2	0	2
S1	0	1 633	0	0	0	1 633	362	1 994
S2		24				24		24
S1+S2	0	1 657	0	0	0	1 657	362	2 019

D42 Distributed income of corporations

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11	3 190	1 305				4 494	1 780	6 274
S12	1 721	934				2 655	584	3 238
S13	152	555				707	0	707
S14	6 750	124				6 874	30	6 904
S15	111	1				112	0	112
S1	11 924	2 919	0	0	0	14 842	2 393	17 236
S2	4 836	1 884				6 720		6 720
S1+S2	16 760	4 803	0	0	0	21 562	2 393	23 955

D45 Rents

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11	48	0			2	50		50
S12	0	0				0		0
S13	351	0				351		351
S14	37	0	16	41		94		94
S15	0	0		7		7		7
S1	436	0	16	48	2	501	0	501
S2	0	0						0
S1+S2	436	0	16	48	2	501	0	501

D43 Reinvested earnings on foreign direct investment

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11						0	936	936
S12						0	615	615
S13						0	49	49
S14						0	0	0
S15						0	-50	-50
S1	0	0	0	0	0	0	1 550	1 550
S2	499	311				810		810
S1+S2	499	311	0	0	0	810	1 550	2 360

D4 Property income (D41+D42+D43+D44+D45)

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11	4 324	1 726	85	94	10	6 239	2 859	9 098
S12	3 226	3 146	2 068	499	0	8 938	3 190	12 128
S13	546	734	0	2	0	1 281	176	1 457
S14	7 551	2 242	1 002	41	0	10 836	565	11 401
S15	112	67	3	7	0	190	-28	161
S1	15 759	7 914	3 157	643	10	27 483	6 762	34 246
S2	6 074	3 481	3 761	1	2	13 319		13 319
S1+S2	21 833	11 396	6 918	644	12	40 803	6 762	47 565

Therefore, with the extension proposed in Table 3.4-3, that is, with the information related to the destination institutional sectors of the uses ("to-whom") of property income and its components, we come to know all the corresponding institutional interrelations and to be able to complete the filling in of the corresponding from-whom-to-whom matrices. The same would be possible with the extension of the second part of Table 3.4-1, that is, with the information regarding the origin institutional sectors of the resources ("from-whom") of the property income and its components, an exercise that we leave to the interested parties, based on the Table A-1 of the Annex.

3.5. Current taxes on income, wealth, etc.

With two components - taxes on income and other current taxes, the current taxes on income, wealth, etc. (code D5) are recorded in the secondary distribution of income account - Table 3.5-1. It is a category with uses by all institutional sectors, except in the case of other current taxes by the rest of the world, and with resources only by general government and the rest of the world.

This category of transactions is integrated into current transactions in the economy and with the rest of the world, represented, respectively: in the national accounting matrix (Table 2.3.-1), by cells (II.2,

National Accounts of Portugal in 2018 (at current prices, in millions of €).

Measurement of institutional interrelations in distributive transactions.

Santos, S.

II.2), (V, II.2) and (II.2, V); and in the social accounting matrix (Table 2.3.-2), by cells (dic, dic), (rw, dic) and (dic, rw).

Table 3.5-1. Recording of current taxes on income, wealth, etc. in the secondary distribution of income account (excerpts from Tables 2.2-3a e b).

Total	S.2 Rest of the World	S.1 Total of the Economy	S.15 NPISHs	S.14 Households	S.13 General Government	S.12 Financial Corporations	S.11 Non- Financial Corporation			
								Code	Transactions and balancing items	
Uses										
20 931	413	20 518	13	13 601	40	1 073	5 791	D5	Current taxes on income, wealth, etc.	
20 366	413	19 953	11	13 164	17	1 036	5 725	D51	Taxes on income	
565		565	2	436	23	38	66	D59	Other current taxes	

		S.13	S.2	Total
		General Government	Rest of the World	
Code	Transactions and balancing items			
				Resources
D5	Current taxes on income, wealth, etc.	20 679	252	20 931
D51	Taxes on income	20 114	252	20 366
D59	Other current taxes	565	0	565

Table 3.5-2. Possible filling in of the from-whom-to-whom matrices relating to current taxes on income, wealth, etc., from the secondary distribution of income account.

D51 Taxes on income

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11								
S12								
S13						19 701	413	20 114
S14								
S15								
S1	0	0	0	0	0	19 701	413	20 114
S2						252		252
S1+S2	5 725	1 036	17	13 164	11	19 953	413	20 366

D59 Other current taxes

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11								
S12								
S13	66	38	23	436	2	565		565
S14								
S15								
S1	66	38	23	436	2	565		565
S2						0		0
S1+S2	66	38	23	436	2	565		565

D5 Current taxes on income, wealth etc. (D51+D59)

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11								
S12								
S13						20 266	413	20 679
S14								
S15								
S1	0	0	0	0	0	20 266	413	20 679
S2						252		252
S1+S2	5 791	1 073	40	13 601	13	20 518	413	20 931

When constructing from-whom-to-whom matrices from the information in Table 3.5-1, as we did previously, we filled in the rows and columns of the totals (S1+S2) and deduced the amounts corresponding to some cells, as can be seen in Table 3.5-2.

Thus, from the column reading, we know that the resident institutional units (S1) recorded a total of uses in the economy and in the rest of the world (S1+S2) in the amount of 20 518. Because the resources of the rest of the world (S2), which totalled 252, are uses of the economy (S1), we can deduce the amount of transactions in the economy (S1), that is, among the resident institutional units: $20\,266 = 20\,518 - 252$.

When reading in row, we see a total of resources of resident institutional units (S1), in this case, of general government (S13), coming from the economy and the rest of the world (S1+S2) in the amount of 20 679. Being the resources from the rest of the world its uses in the economy, in the amount of 413, we deduce, once again, the amount of transactions in the economy (S1), that is, among the resident institutional units, in this case, general government resources from all resident institutional units: $20\,266 = 20\,679 - 413$.

Because there are no transactions relating to other current taxes (D59) with the rest of the world, we deduce that the total uses provided in the IEA table correspond to transactions in the economy (S1), that is, uses of resident institutional units (S11-S15) and resources of general government (S13).

We therefore have our matrix, which in this case is a row vector, filled in. The same does not happen with income taxes (D51), where we do not know whether the destination of the uses of resident institutional units (S11-S15) is the economy, that is, general government (S13) or the rest of the world (S2). This lack of knowledge, represented by the shaded parts in Table 3.5-2, also corresponds to the origin of resources of the general government (S13) and the rest of the world (S2).

As we did previously, we overcame our lack of knowledge by expanding the uses, represented in Table 3.5-1, to destination institutional sectors ("to-whom"). Thus, from Table 3.5-3, it was possible to complete the filling in of the from-whom-to-whom matrices relating to the category of transactions under analysis – as shown in Table 3.5-4. The same would have been possible with the information regarding the origin institutional sectors of the resources ("from-whom") of the same category of transactions, as can be tested from Table A-2 of the Annex.

National Accounts of Portugal in 2018 (at current prices, in millions of €).

Measurement of institutional interrelations in distributive transactions.

Santos, S.

Table 3.5-3. Recording of the uses of current taxes on income, wealth, etc. in the secondary distribution of income account, extended to destination institutional sectors.

Total	S.2 Rest of the World	S.1 Total of the Economy	S.15 NPISHs	S.14 Households	S.13 General Government	S.12 Financial Corporations	S.11 Non- Financial Corporation		
								Code	Transactions and balancing items
Uses									
20 931	413	20 518	13	13 601	40	1 073	5 791	D5	Current taxes on income, wealth, etc.
0		0	0						S11 - Non-Financial Corporations
0		0							S12 - Financial Corporations
20 679	413	20 266	8	13 557	40	966	5 695		S13 - General Government
0		0							S14 - Households
0		0							S15 - NPISHs
252		252	5	44		108	96		S2 - Rest of the World
20 366	413	19 953	11	13 164	17	1 036	5 725	D51	Taxes on income
									S11 - Non-Financial Corporations
									S12 - Financial Corporations
20 114	413	19 701	6	13 121	17	928	5 629		S13 - General Government
									S14 - Households
									S15 - NPISHs
252		252	5	44		108	96		S2 - Rest of the World
565		565	2	436	23	38	66	D59	Other current taxes
									S11 - Non-Financial Corporations
									S12 - Financial Corporations
565		565	2	436	23	38	66		S13 - General Government
									S14 - Households
									S15 - NPISHs
									S2 - Rest of the World

Table 3.5-4. Filling in of the from-whom-to-whom matrices relating to current taxes on income, wealth, etc., from the corresponding uses in the secondary distribution of income account, extended to destination institutional sectors.

D51 Impostos sobre o rendimento

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11						0		0
S12						0		0
S13	5 629	928	17	13 121	6	19 701	413	20 114
S14						0		0
S15						0		0
S1	5 629	928	17	13 121	6	19 701	413	20 114
S2	96	108		44	5	252		252
S1+S2	5 725	1 036	17	13 164	11	19 953	413	20 366

D59 Outros impostos correntes

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11						0		0
S12						0		0
S13	66	38	23	436	2	565		565
S14						0		0
S15						0		0
S1	66	38	23	436	2	565	0	565
S2						0		0
S1+S2	66	38	23	436	2	565	0	565

D5 Impostos correntes sobre o rendimento, património, etc. (D51+D59)

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11						0		0
S12						0		0
S13	5 695	966	40	13 557	8	20 266	413	20 679
S14						0		0
S15						0		0
S1	5 695	966	40	13 557	8	20 266	413	20 679
S2	96	108	0	44	5	252		252
S1+S2	5 791	1 073	40	13 601	13	20 518	413	20 931

National Accounts of Portugal in 2018 (at current prices, in millions of €).

Measurement of institutional interrelations in distributive transactions.

Santos, S.

3.6. Social contributions and benefits

With three components - net social contributions, social benefits other than social transfers in kind, and social transfers in kind, social contributions and benefits (code D6) are recorded in the secondary distribution of income and redistribution of income in kind accounts - Table 3.6-1. The secondary distribution of income account records the first two components and the redistribution of income in kind account records the last component.

Not directly representing monetary flows, it is not possible to identify social transfers in kind (D63) in our matrix representations, the same does not happen with the other two components (D61 and D62), which are integrated into current transactions in the economy and with the rest of the world, represented, respectively: in the national accounting matrix (Table 2.3.-1), by cells (II.2, II.2), (V, II.2) and (II.2, V); and in the social accounting matrix (Table 2.3.-2), through the cells (dic, dic), (rw, dic) and (dic, rw).

Table 3.6-1. Recording of social contributions and benefits in the secondary distribution of income and redistribution of income in kind accounts (excerpts from Tables 2.2-3a e b).

Total	S.2 Rest of the World	S.1 Total of the Economy	S.15 NPISHs	S.14 Households	S.13 General Government	S.12 Financial Corporations	S.11 Non- Financial Corporation	Code Transactions and balancing items	
Uses									
28 342	70	28 272		28 272				D61	Net social contributions
39 525	1 884	37 641	323	26	33 453	2 088	1 751	D62	Social benefits other than social transfers in kind
23 316		23 316	4 134		19 182			D63	Social transfers in kind

					S.11 Non- Financial Corporation	S.12 Financial Corporations	S.13 General Government	S.14 Households	S.15 NPISHs	S.1 Total of the Economy	S.2 Rest of the World	Total
Code Transactions and balancing items												
Resources												
D61	Net social contributions				1 751	2 161	23 860	26	394	28 192	150	28 342
D62	Social benefits other than social transfers in kind							39 295		39 295	231	39 525
D63	Social transfers in kind							23 316		23 316		23 316

As shown in Table 3.6-2, the amounts in Table 3.6-1 allow filling in the rows and columns of the totals (S1+S2) of the from-whom-to-whom matrices, as well as deducing some of the amounts needed for its construction, following a methodology identical to the one previously adopted.

National Accounts of Portugal in 2018 (at current prices, in millions of €).

Measurement of institutional interrelations in distributive transactions.

Santos, S.

Table 3.6-2. Possible filling in of the from-whom-to-whom matrices relating to social contributions and benefits, from the secondary distribution of income and redistribution of income in kind accounts.

D61 Net social contributions

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11						0		1 751
S12						0		2 161
S13						0		23 860
S14						0		26
S15						0		394
S1				28 122		28 122	70	28 192
S2				150		150		150
S1+S2				28 272		28 272	70	28 342

D63 Social transfers in kind

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11								
S12								
S13								
S14			19 182		4 134	23 316		23 316
S15								
S1			19 182		4 134	23 316		23 316
S2								
S1+S2			19 182		4 134	23 316		23 316

D62 Social benefits other than social transfers in kind

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11								
S12								
S13								
S14						37 411	1 884	39 295
S15								
S1	0	0	0	0	0	37 411	1 884	39 295
S2						231		231
S1+S2	1 751	2 088	33 453	26	323	37 641	1 884	39 525

D6 Social contributions and benefits (D61+D62+D63)

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11						0		1 751
S12						0		2 161
S13						0		23 860
S14						0		62 637
S15						0		394
S1	0	0	0	0	0	88 849	1 954	90 803
S2						381		381
S1+S2	1 751	2 088	52 635	28 298	4 457	89 229	1 954	91 183

Thus, we learn that: net social contributions (D61) record resources by all institutional sectors and uses by households and the rest of the world; social benefits other than social transfers in kind (D62) record resources by households and the rest of the world and uses by all institutional sectors; and that only households register resources related to social transfers in kind (D63), of which general government and non-profit institutions serving households record uses. It is therefore possible to deduce institutional interrelations under the last component, but not for the other two, that is, we do not know the grey parts of Table 3.6-2. Once again, we have overcome our lack of knowledge by expanding the uses, represented in Table 3.6-1, to the destination institutional sectors ("to-whom"), as shown in Table 3.6-3.

National Accounts of Portugal in 2018 (at current prices, in millions of €).

Measurement of institutional interrelations in distributive transactions.

Santos, S.

Table 3.6-3. Recording of the uses of social contributions and benefits in the secondary distribution of income and redistribution of income in kind accounts, extended to destination institutional sectors.

Total	S.2 Rest of the World	S.1 Total of the Economy	S.15 NPISHs	S.14 Households	S.13 General Government	S.12 Financial Corporations	S.11 Non- Financial Corporation	Code	Transactions and balancing items
Uses									
28 342	70	28 272		28 272				D61	Net social contributions
1 751		1 751		1 751					S11 - Non-Financial Corporations
2 161		2 161		2 161					S12 - Financial Corporations
23 860	70	23 790		23 790					S13 - General Government
26		26		26					S14 - Households
394		394		394					S15 - NPISHs
150		150		150					S2 - Rest of the World
39 525	1 884	37 641	323	26	33 453	2 088	1 751	D62	Social benefits other than social transfers in kind
0		0							S11 - Non-Financial Corporations
0		0							S12 - Financial Corporations
0		0							S13 - General Government
39 295	1 884	37 411	323	26	33 222	2 088	1 751		S14 - Households
0		0							S15 - NPISHs
231		231			231				S2 - Rest of the World
23 316		23 316	4 134		19 182			D63	Social transfers in kind
									S11 - Non-Financial Corporations
									S12 - Financial Corporations
									S13 - General Government
23 316		23 316	4 134		19 182				S14 - Households
									S15 - NPISHs
									S2 - Rest of the World

Therefore, it was possible to quantify the unknown institutional interrelationships, as can be seen in Table 3.6-4. The same result would have been obtained by expanding the resources of the same transactions to the institutional sectors of origin (“from whom”), an exercise that we leave to the interested parties from Table A-3 of the Annex.

National Accounts of Portugal in 2018 (at current prices, in millions of €).

Measurement of institutional interrelations in distributive transactions.

Santos, S.

Table 3.6-4. Filling in of the from-whom-to-whom matrices relating to social contributions and benefits, from corresponding uses in the secondary distribution of income and redistribution of income in kind accounts, extended to destination institutional sectors.

D61 Net social contributions

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11				1 751		1 751		1 751
S12				2 161		2 161		2 161
S13				23 790		23 790	70	23 860
S14				26		26		26
S15				394		394		394
S1				28 122		28 122	70	28 192
S2				150		150		150
S1+S2				28 272		28 272	70	28 342

D63 Social transfers in kind

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11								
S12								
S13								
S14			19 182		4 134	23 316		23 316
S15								
S1			19 182		4 134	23 316		23 316
S2								
S1+S2			19 182		4 134	23 316		23 316

D62 Social benefits other than social transfers in kind

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11								
S12								
S13								
S14	1 751	2 088	33 222	26	323	37 411	1 884	39 295
S15								
S1	1 751	2 088	33 222	26	323	37 411	1 884	39 295
S2			231			231		231
S1+S2	1 751	2 088	33 453	26	323	37 641	1 884	39 525

D6 Social contributions and benefits (D61+D62+D63)

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11	0	0	0	1 751	0	1 751	0	1 751
S12	0	0	0	2 161	0	2 161	0	2 161
S13	0	0	0	23 790	0	23 790	70	23 860
S14	1 751	2 088	52 404	52	4 457	60 753	1 884	62 637
S15	0	0	0	394	0	394	0	394
S1	1 751	2 088	52 404	28 148	4 457	88 849	1 954	90 803
S2	0	0	231	150	0	381		381
S1+S2	1 751	2 088	52 635	28 298	4 457	89 229	1 954	91 183

3.7. Other current transfers

With six components - net non-life insurance premiums, non-life insurance claims, current transfers within general government, current international cooperation, miscellaneous current transfers and VAT- and GNI-based EU own resources⁹, other current transfers (code D7) are recorded in the secondary distribution of income account - Table 3.7-1.

This category of transactions is integrated into current transactions in the economy and with the rest of the world, represented, respectively: in the national accounting matrix (Table 2.3.-1), by cells (II.2, II.2), (V, II.2) and (II.2, V); and in the social accounting matrix (Table 2.3.-2), by cells (dic, dic), (rw, dic) and (dic, rw).

⁹ Component added by the ESA (adaptation of the SCN to the European Union)

National Accounts of Portugal in 2018 (at current prices, in millions of €).

Measurement of institutional interrelations in distributive transactions.

Santos, S.

Table 3.7-1. Recording of other current transfers in the secondary distribution of income account (excerpts from Tables 2.2-3a e b).

Total	S.2 Rest of the World	S.1 Total of the Economy	S.15 NPISHs	S.14 Households	S.13 General Government	S.12 Financial Corporations	S.11 Non- Financial Corporations		
								Code	Transactions and balancing items
Uses									
23 395	6 755	16 639	109	6 051	4 597	4 150	1 732	D7	Other current transfers
3 087	180	2 907	34	1 126	34	885	828	D71	Net non-life insurance premiums
3 122	314	2 808				2 808		D72	Non-life insurance claims
0		0			0			D73	Current transfers within general government
645	452	192			192			D74	Current international cooperation
14 842	5 809	9 033	75	4 925	2 672	457	904	D75	Miscellaneous current transfers
1 699		1 699			1 699			D76	VAT- and GNI-based EU own resources

								S.11 Non- Financial Corporations	S.12 Financial Corporations	S.13 General Government	S.14 Households	S.15 NPISHs	S.1 Total of the Economy	S.2 Rest of the World	Total
Resources															
Code	Transactions and balancing items														
D7	Other current transfers								497	4 182	2 706	8 754	3 345	19 484	23 395
D71	Net non-life insurance premiums									2 808				2 808	3 087
D72	Non-life insurance claims								473	877	33	1 495	20	2 897	3 122
D73	Current transfers within general government										0			0	0
D74	Current international cooperation										452			452	645
D75	Miscellaneous current transfers								24	497	2 221	7 259	3 325	13 327	14 842
D76	VAT- and GNI-based EU own resources													0	1 699

When constructing from-whom-to-whom matrices from the information in Table 3.7-1, it is possible, once again, to fill in the rows and columns of the totals (S1+S2) and deduce the amounts corresponding to some cells, as can be seen in Table 3.7-2.

Thus, it was possible to deduce the content of those matrices in the case of the components: current transfers within general government (D73), without recording transactions; current international cooperation (D74), with two records of transactions; and VAT- and GNI-based EU own resources (D76) with a record of transactions. In fact, in the case of current international cooperation (D74), we have: 192, which corresponds to the total uses of the general government (S13) and resources of the rest of the world (S2), that is, the only amount of resources of the latter originating from the former; and 452, which corresponds to the total resources of the general government (S13) and uses of the rest of the world (S2), that is, the only amount of uses of the latter destined to the former. In the case of flows corresponding to the VAT- and GNI-based EU own resources (D76), we just have the amount of 1,699, which corresponds to the total uses of the general government (S13) and resources of the rest of the world (S2), that is, the only amount of resources of the latter originating from the former.

On the other hand, in the remaining components, we verify uses and resources of all, or almost all, institutional sectors, which restricts the possibilities of deducing the amounts of the shaded cells in the corresponding matrices.

In terms of category totals (D7), reading the column, we know that the resident institutional units (S1) recorded a total of uses in the economy and in the rest of the world (S1+S2) in the amount of 16 639. Because the resources of the rest of the world (S2), which totalled 3 911, are uses of the economy

National Accounts of Portugal in 2018 (at current prices, in millions of €).

Measurement of institutional interrelations in distributive transactions.

Santos, S.

(S1), we can deduce the amount of transactions in the economy (S1), that is, among the resident institutional units: $12\,728 = 16\,639 - 3\,911$.

In the same way, reading in row, we have a total of resources of the resident institutional units (S1), coming from the economy and the rest of the world (S1+S2) amounting to 19 484. In turn, we have uses of the rest of the world (S2), which total 6 755 that are resources of the economy (S1), which allow us to deduce the amount of transactions in the economy (S1), that is, among the resident institutional units: $12\,728 = 19\,484 - 6\,755$.

The above-mentioned lack of information regarding three of its components makes the entire network of institutional interrelations of the total of the other current transfers (D7), represented by the shaded parts in Table 3.7-2, unknown.

Table 3.7-2. Possible filling in of the from-whom-to-whom matrices relating to other current transfers, from the secondary distribution of income account.

D71 Net non-life insurance premiums

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11								
S12						2 628	180	2 808
S13								
S14								
S15								
S1	0	0	0	0	0	2 628	180	2 808
S2						279		279
S1+S2	828	885	34	1 126	34	2 907	180	3 087

D72 Non-life insurance claims

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11						0		473
S12						0		877
S13						0		33
S14						0		1 495
S15						0		20
S1		2 582				2 582	314	2 897
S2		225				225		225
S1+S2		2 808				2 808	314	3 122

D73 Current transfers within general government

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11								
S12								
S13						0		0
S14								
S15								
S1			0			0		0
S2								
S1+S2			0			0		0

D74 Current international cooperation

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11								
S12								
S13						0	452	452
S14								
S15								
S1			0			0	452	452
S2			192			192		192
S1+S2			192			192	452	645

D75 Miscellaneous current transfers

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11						0		24
S12						0		497
S13						0		2 221
S14						0		7 259
S15						0		3 325
S1	0	0	0	0	0	7 518	5 809	13 327
S2						1 515		1 515
S1+S2	904	457	2 672	4 925	75	9 033	5 809	14 842

D76 VAT- and GNI-based EU own resources

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11								
S12								
S13								
S14								
S15								
S1			0			0		0
S2			1 699			1 699		1 699
S1+S2			1 699			1 699		1 699

D7 Other current transfers (D71+D72+D73+D74+D75)

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11						0		497
S12						0		4 182
S13						0		2 706
S14						0		8 754
S15						0		3 345
S1	0	0	0	0	0	12 728	6 755	19 484
S2						3 911		3 911
S1+S2	1 732	4 150	4 597	6 051	109	16 639	6 755	23 395

National Accounts of Portugal in 2018 (at current prices, in millions of €).

Measurement of institutional interrelations in distributive transactions.

Santos, S.

Table 3.7-3. Recording of the uses of other current transfers in the secondary distribution of income accounts, extended to destination institutional sectors.

Total	S.2 Rest of the World	S.1 Total of the Economy	S.15 NPISHs	S.14 Households	S.13 General Government	S.12 Financial Corporations	S.11 Non- Financial Corporations		
								Code	Transactions and balancing items
Uses									
23 395	6 755	16 639	109	6 051	4 597	4 150	1 732	D7	Other current transfers
497	77	420	0	0	13	407	0		S11 – Non-Financial Corporations
4 182	684	3 498	34	1 126	43	1 536	759		S12 – Financial Corporations
2 706	485	2 220	16	1 612	0	42	550		S13 – General Government
8 754	5 284	3 470	0	1 711	264	1 495	0		S14 – Households
3 345	225	3 120	25	530	2 342	54	169		S15 – NPISHs
3 911	0	3 911	34	1 072	1 935	617	254		S2 – Rest of the World
3 087	180	2 907	34	1 126	34	885	828	D71	Net non-life insurance premiums
									S11 – Non-Financial Corporations
2 808	180	2 628	34	1 126	34	677	757		S12 – Financial Corporations
									S13 – General Government
									S14 – Households
									S15 – NPISHs
279		279	0	0	0	208	71		S2 – Rest of the World
3 122	314	2 808				2 808		D72	Non-life insurance claims
473	66	407				407			S11 – Non-Financial Corporations
877	248	629				629			S12 – Financial Corporations
33		33				33			S13 – General Government
1 495		1 495				1 495			S14 – Households
20		20				20			S15 – NPISHs
225		225				225			S2 – Rest of the World
0		0			0			D73	Current transfers within general government
645	452	192			192			D74	Current international cooperation
									S11 – Non-Financial Corporations
									S12 – Financial Corporations
452	452								S13 – General Government
									S14 – Households
									S15 – NPISHs
192		192			192				S2 – Rest of the World
14 842	5 809	9 033	75	4 925	2 672	457	904	D75	Miscellaneous current transfers
24	11	13	0	0	13	0	0		S11 – Non-Financial Corporations
497	256	241	0	0	9	230	2		S12 – Financial Corporations
2 221	33	2 188	16	1 612	0	10	550		S13 – General Government
7 259	5 284	1 975	0	1 711	264	0	0		S14 – Households
3 325	225	3 100	25	530	2 342	35	169		S15 – NPISHs
1 515	0	1 515	34	1 072	43	183	183		S2 – Rest of the World
1 699		1 699			1 699			D76	VAT- and GNI-based EU own resources
									S11 – Non-Financial Corporations
									S12 – Financial Corporations
									S13 – General Government
									S14 – Households
									S15 – NPISHs
1 699		1 699			1 699				S2 – Rest of the World

Once again, we used an extension of the first part of Table 3.7-1, that is, the information regarding the institutional sectors of destination for the uses (“to-whom”) of other current transfers, represented in Table 3.7-3, to overcome this lack of knowledge, as can be seen in Table 3.7-4, with all from-whom-to-whom matrices related to the category of transactions under analysis filled in.

National Accounts of Portugal in 2018 (at current prices, in millions of €).

Measurement of institutional interrelations in distributive transactions.

Santos, S.

Table 3.7-4. Filling in of the from-whom-to-whom matrices relating to other current transfers, from the corresponding uses in the secondary distribution of income account, extended to destination institutional sectors.

D71 Net non-life insurance premiums

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11								
S12	757	677	34	1 126	34	2 628	180	2 808
S13								
S14								
S15								
S1	757	677	34	1 126	34	2 628	180	2 808
S2	71	208	0	0	0	279		279
S1+S2	828	885	34	1 126	34	2 907	180	3 087

D72 Non-life insurance claims

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11		407				407	66	473
S12		629				629	248	877
S13		33				33		33
S14		1 495				1 495		1 495
S15		20				20		20
S1		2 582				2 582	314	2 897
S2		225				225		225
S1+S2		2 808				2 808	314	3 122

D73 Current transfers within general government

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11								
S12								
S13						0		0
S14								
S15								
S1			0			0		0
S2								
S1+S2			0			0		0

D74 Current international cooperation

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11								
S12								
S13						0	452	452
S14								
S15								
S1			0			0	452	452
S2			192			192		192
S1+S2			192			192	452	645

D75 Miscellaneous current transfers

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11	0	0	13	0	0	13	11	24
S12	2	230	9	0	0	241	256	497
S13	550	10	0	1 612	16	2 188	33	2 221
S14	0	0	264	1 711	0	1 975	5 284	7 259
S15	169	35	2 342	530	25	3 100	225	3 325
S1	721	274	2 629	3 853	41	7 518	5 809	13 327
S2	183	183	43	1 072	34	1 515		1 515
S1+S2	904	457	2 672	4 925	75	9 033	5 809	14 842

D76 VAT- and GNI-based EU own resources

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11								
S12								
S13								
S14								
S15								
S1			0			0		0
S2			1 699			1 699		1 699
S1+S2			1 699			1 699		1 699

D7 Other current transfers (D71+D72+D73+D74+D75)

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11	0	407	13	0	0	420	77	497
S12	759	1 536	43	1 126	34	3 498	684	4 182
S13	550	42	0	1 612	16	2 220	485	2 706
S14	0	1 495	264	1 711	0	3 470	5 284	8 754
S15	169	54	2 342	530	25	3 120	225	3 345
S1	1 478	3 534	2 663	4 979	75	12 728	6 755	19 484
S2	254	617	1 935	1 072	34	3 911		3 911
S1+S2	1 732	4 150	4 597	6 051	109	16 639	6 755	23 395

Similar to what we have been referring to, the same would have been possible with the extension of the second part of Table 3.7-1, that is, with the information regarding the institutional sectors of origin of the resources (“from-whom”) of the other transfers currents and their components, an exercise that we leave to those interested, based on Table A-4 of the Annex.

3.8. Adjustment for the change in pension entitlements

Without decomposition, the adjustment for the change in pension entitlements (code D8) is recorded, in the same way, in the use of disposable income and of adjusted disposable income accounts - Table 3.8-1, as a use of financial corporations and a resource of households.

Thus, we have only one category of transactions which, as can be seen in Table 3.8-2, occupies a single cell of the corresponding from-whom-to-whom matrix, and therefore no extension of the IEA table is required to fill it in.

National Accounts of Portugal in 2018 (at current prices, in millions of €).

Measurement of institutional interrelations in distributive transactions.

Santos, S.

Table 3.8-1. Recording of adjustment for the change in pension entitlements in the use of disposable income and of adjusted disposable income accounts (excerpt from Table 2.2-4).

S.1 Total of the Economy	S.12 Financial Corporations			S.14 Households	S.1 Total of the Economy
		Code	Transactions and balancing items		
Uses				Resources	
73	73	D8	Adjustment for the change in pension entitlements	73	73

Table 3.8-2. Filling in of the from-whom-to-whom matrix relating to adjustment for the change in pension entitlements, from the use of disposable income and of adjusted disposable income accounts.

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11								
S12								
S13								
S14		73				73		73
S15								
S1		73				73		73
S2								
S1+S2		73				73		73

Without relations with the rest of the world, the category under analysis occupies the cell (II.4, II.4) of the national accounting matrix (Table 2.3.-1), and integrates current transactions in the economy, cell (dic, dic), of the social accounting matrix (Table 2.3.-2).

3.9. Capital transfers

With three components - capital taxes, investment grants, and other capital transfers, capital transfers (code D9) are recorded in the capital account – Table 3.9-1. As we saw in the previous chapter, this is the only category of distributive transactions recorded in an accumulation account; the other eight categories are recorded in current accounts.

Capital transfers in the economy and with the rest of the world are treated identically, respectively: in the national accounting matrix (Table 2.3.-1) - cells (III.1, III.1), (V, III.1) and (III.1, V); and in the social accounting matrix (Table 2.3.-2) - cells (dik, dik), (rw, dik) and (dik, rw).

Measurement of institutional interrelations in distributive transactions.

Santos, S.

Table 3.9-1. Recording of capital transfers in the capital account (excerpt from Table 2.2-5b).

	S.11 Non- Financial Corporation	S.12 Financial Corporations	S.13 General Government	S.14 Households	S.15 NPISHs	S.1 Total of the Economy	S.2 Rest of the World	Total
Code	Transactions and balancing items							
	Changes in liabilities and net worth							
D9r	Capital transfers, receivable	1 751	1 200	978	491	421	4 841	5 014
D91r	Capital taxes, receivable			0			0	0
D92r	Investment grants, receivable	1 384	1	660	144	272	2 460	2 518
D99r	Other capital transfers, receivable	367	1 199	318	348	149	2 380	2 496
D9p	Capital transfers, payable	-202	-498	-2 392	-6	-5	-3 102	-5 014
D91p	Capital taxes, payable		0		0	0	0	0
D92p	Investment grants, payable	0		-638			-638	-2 518
D99p	Other capital transfers, payable	-202	-498	-1 754	-6	-5	-2 465	-2 496

Also returning to the previous chapter, we will treat “capital transfers, receivable” as resources and “capital transfers, payable” as uses and without a negative sign. Thus, when constructing from-whom-to-whom matrices based on the information in Table 3.9-1, it was possible, once again, to fill in the rows and columns of the totals (S1+S2) and deduce the amounts corresponding to some cells, as can be seen in Table 3.9-2.

3.9-2. Possible filling in of the from-whom-to-whom matrices relating to capital transfers, from the capital account.

D91 Capital taxes

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11								
S12								
S13								0
S14								
S15								
S1						0	0	0
S2						0	0	0
S1+S2		0		0	0	0	0	0

D92	Investment grants		
-----	-------------------	--	--

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11						0		1 384
S12						0		1
S13						0		660
S14						0		144
S15						0		272
S1			580			580	1 881	2 460
S2			58			58		58
S1+S2	0		638			638	1 881	2 518

D99 Other capital transfers

Other capital transfers								
	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11						0		367
S12						0		1 199
S13						0		318
S14						0		348
S15						0		149
S1	0	0	0	0	0	2 349	31	2 380
S2						115		115
S1+S2	202	498	1 754	6	5	2 465	31	2 496

D9 Capital transfers (D91+D92+D99)

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11						0		1 751
S12						0		1 200
S13						0		978
S14						0		491
S15						0		421
S1	0	0	0	0	0	2 929	1 912	4 841
S2						173		173
S1+S2	202	498	2 392	6	5	3 102	1 912	5 014

Without records in the capital taxes component (D91), we verify the existence of resources by all institutional sectors and uses by general government (S13) and the rest of the world (S2), in the case of investment grants (D92). In the case of other capital transfers (D99) we verify the existence of resources and uses by all institutional sectors.

In terms of category totals (D9), reading in a column, we know that resident institutional units (S1) recorded a total of uses in the economy and in the rest of the world (S1+S2) in the amount of 3 102. Because the resources of the rest of the world (S2), which totalled 173, are uses of the economy (S1), we can deduce the amount of capital transfers in the economy (S1), that is, among the resident institutional units: $2\,929 = 3\,102 - 173$.

National Accounts of Portugal in 2018 (at current prices, in millions of €).

Measurement of institutional interrelations in distributive transactions.

Santos, S.

In the same way, reading in row, we have a total of resources of the resident institutional units (S1), from the economy and the rest of the world (S1+S2) in the amount of 4 841. In turn, we have uses of the rest of the world (S2), which total 1 912 that are resources of the economy (S1), which allows us to deduce the amount of transactions in the economy (S1), that is, among the resident institutional units: $2\,929 = 4\,841 - 1\,912$.

We are therefore unaware of all the shaded parts in Table 3.9-2, that is, the network of institutional interrelations of total capital transfers (D9) and its components.

As we did for some of the other distributive transactions, in order to overcome this gap, we used an extension of the second part of Table 3.9-1, that is, the information on the institutional sectors of destination ("to-whom") of the capital transfers payable (without a negative sign), represented in Table 3.9-3, as can be seen in Table 3.9-4. with all the from-whom-to-whom matrices for the category of transactions under analysis filled in.

Table 3.9-3. Recording of capital transfers payable in the capital account, extended to destination institutional sectors.

Code	Transactions and balancing items	S.11 Non- Financial	S.12 Financial Corporations	S.13 General Government	S.14 Households	S.15 NPISHs	S.1 Total of the Economy	S.2 Rest of the World	Total
Changes in liabilities and net worth									
D9p	Capital transfers, payable	- 202	- 498	-2 392	- 6	- 5	-3 102	-1 912	-5 014
	S11 - Non-Financial Corporations	0	- 1	- 662	0	0	- 663	-1 088	-1 751
	S12 - Financial Corporations	0	0	-1 199	0	0	-1 199	0	-1 200
	S13 - General Government	- 140	- 166	0	- 6	- 5	- 318	- 660	- 978
	S14 - Households	0	- 330	- 64	0	0	- 393	- 98	- 491
	S15 - NPISHs	0	- 1	- 355	0	0	- 356	- 65	- 421
	S2 - Rest of the World	- 61	0	- 112	0	0	- 173	0	- 173
D91p	Capital taxes, payable		0		0	0	0	0	0
D92p	Investment grants, payable	0		- 638			- 638	-1 881	-2 518
	S11 - Non-Financial Corporations			- 326			- 326	-1 059	-1 384
	S12 - Financial Corporations			0			0	0	- 1
	S13 - General Government			0			0	- 660	- 660
	S14 - Households			- 47			- 47	- 96	- 144
	S15 - NPISHs			- 207			- 207	- 65	- 272
	S2 - Rest of the World			- 58			- 58	0	- 58
D99p	Other capital transfers, payable	- 202	- 498	-1 754	- 6	- 5	-2 465	- 31	-2 496
	S11 - Non-Financial Corporations		- 1	- 337			- 338	- 30	- 367
	S12 - Financial Corporations			-1 199			-1 199	0	-1 199
	S13 - General Government	- 140	- 166		- 6	- 5	- 318	0	- 318
	S14 - Households		- 330	- 16			- 346	- 1	- 348
	S15 - NPISHs		- 1	- 148			- 149	0	- 149
	S2 - Rest of the World	- 61		- 54			- 115	0	- 115

National Accounts of Portugal in 2018 (at current prices, in millions of €).

Measurement of institutional interrelations in distributive transactions.

Santos, S.

Table 3.9-4. Filling in of the from-whom-to-whom matrices relating to capital transfers, from the transfers payable of capital account, extended to destination institutional sectors.

D91 Capital taxes

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11								
S12								
S13				0				
S14								
S15								
S1								
S2								
S1+S2								

D99 Other capital transfers

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11		1	337			338	30	367
S12			1 199			1 199	0	1 199
S13	140	166	0	6	5	318	0	318
S14		330	16			346	1	348
S15		1	148			149	0	149
S1	140	498	1 700	6	5	2 349	31	2 380
S2	61		54			115		115
S1+S2	202	498	1 754	6	5	2 465	31	2 496

D92 Investment grants

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11			326			326	1 059	1 384
S12			0			0	0	1
S13			0			0	660	660
S14			47			47	96	144
S15			207			207	65	272
S1			580			580	1 881	2 460
S2			58			58		58
S1+S2			638			638	1 881	2 518

D9 Capital transfers (D91+D92+D99)

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11	0	1	662	0	0	663	1 088	1 751
S12	0	0	1 199	0	0	1 199	0	1 200
S13	140	166	0	6	5	318	660	978
S14	0	330	64	0	0	393	98	491
S15	0	1	355	0	0	356	65	421
S1	140	498	2 280	6	5	2 929	1 912	4 841
S2	61	0	112	0	0	173		173
S1+S2	202	498	2 392	6	5	3 102	1 912	5 014

Once again, we leave it to the interested parties to fill in the same from-whom-to-whom matrices based on the extension of the first part of Table 3.9-1, that is, the information on the origin institutional sectors ("from-whom") of the capital transfers receivable, available in Table A-5 of the Annex.

3.10. Aggregation and positioning in matrix representations

Throughout the nine previous sections, we have identified the positioning of each of the nine categories of distributive transactions in the aggregated matrix representations of the national and social accounting matrices of transactions, presented in Section 4.2 of Santos (2022) and re-presented in Section 2.3 of this working paper. We now associate the amounts of the from-whom-to-whom matrices, which we have just worked on, to the amounts of the cells of the aforementioned (national and social accounting) matrices, by associating text boxes with excerpts from tables with the corresponding parts and exemplifying some calculations.

In the national accounting matrix, we have identified distributive transactions explicitly in the primary and secondary distribution of income, use of income and capital accounts, as well as in the rest of the world account. With the corresponding connection to the rest of the world account, the primary and secondary distribution of income accounts aggregate several categories of transactions, as shown in Tables 3.10-1 and 3.10-2, and the use of income and capital accounts two categories, as shown in Tables 3.10-3.

National Accounts of Portugal in 2018 (at current prices, in millions of €).

Measurement of institutional interrelations in distributive transactions.

Santos, S.

Table 3.10-1. Association of the from-whom-to-whom matrices to the primary distribution of income and the rest of the world accounts of the aggregated national accounting matrix of transactions with gross balancing items.

Uses/Changes in Assets		Economy	V. Rest of the world
Resources/Changes in Liabilities and Net Worth		Current accounts	account
		(II.1) Primary distribution of income [Tables 2.2-1 and 2]	[Table 2.2-1,2,3,4 and 5]
Economy	(II.1) Primary distribution of income [Tables 2.2-1 and 2]	Property income (D4) = 27 484	Compensation of employees (D1)+ Property income (D4) = 7 224
Current acc			
(V) Rest of the world account [Tables 2.2-1,2,3,4 and 5]		Compensation of employees (D1)+ Property income (D4)+ Taxes on production and imports, net of subsidies (D2-D3) = 12 235	

[excerpt from Table 2.3-1]

Cell (V, II.1): $12\,235 = 153 + 356 - 1\,594 + 13\,319$

Cell (II.1, V): $7\,224 = 461 + 6\,762$

D1 Compensation of employees (D11+D12)								
	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11								
S12								
S13								
S14						91 480	461	91 941
S15								
S1	0	0	0	0	0	91 480	461	91 941
S2							153	153
S1+S2	59 271	3 866	22 030	2 953	3 514	91 633	461	92 095

[excerpt from Table 3.1-3]

D2 Taxes on production and imports (D21+D22)								
	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11								
S12								
S13						30 942		30 942
S14								
S15								
S1	0	0	0	0	0	30 942		30 942
S2							356	356
S1+S2						31 298		31 298

[excerpt from Table 3.2-3]

D3 Subsidies (D31+D32)								
	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11								
S12								
S13						- 799		- 799
S14								
S15								
S1	0	0	0	0	0	- 799		- 799
S2							-1 594	-1 594
S1+S2						-2 393		-2 393

[excerpt from Table 3.3-3]

D4 Property income (D41+D42+D43+D44+D45)								
	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11						0		9 098
S12						0		12 129
S13						0		1 457
S14						0		11 401
S15						0		161
S1	0	0	0	0	0	27 484	6 762	34 246
S2							13 319	13 319
S1+S2	21 833	11 396	6 918	644	12	40 803	6 762	47 565

[excerpt from Table 3.4-2]

National Accounts of Portugal in 2018 (at current prices, in millions of €).

Measurement of institutional interrelations in distributive transactions.

Santos, S.

Table 3.10-2. Association of the from-whom-to-whom matrices to the secondary distribution of income and the rest of the world accounts of the aggregated national accounting matrix of transactions with gross balancing items.

Uses/Changes in Assets Resources/Changes in Liabilities and Net Worth	Economy		V. Rest of the world account [Table 2.2-1,2,3,4 and 5]
	Current accounts (II.2) Secondary distribution of income [Table 2.2-3]		
Economy Current acc. (II.2) Secondary distribution of income [Table 2.2-3]	Current transactions (D5,D61,D62,D7) = 98 526	Current transactions (D5,D61,D62,D7) = 9 122	
(V) Rest of the world account [Tables 2.2-1,2,3,4 and 5]	Current transactions (D5,D61,D62,D7) = 4 544		

[excerpt from Table 2.3-1]

Cell (II.2, II.2): $98\ 526 = 20\ 266 + 28\ 122 + 37\ 411 + 12\ 728$

Cell (V, II.2): $4\ 544 = 252 + 150 + 231 + 3\ 911$

Cell (II.2, V): $9\ 122 = 413 + 70 + 1884 + 6\ 755$

D5 Current taxes on income, wealth etc. (D51+D59)

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11								
S12								
S13						20 266	413	20 679
S14								
S15								
S1	0	0	0	0	0	20 266	413	20 679
S2						252		252
S1+S2	5 791	1 073	40	13 601	13	20 518	413	20 931

[excerpt from Table 3.5-2]

D61 Net social contributions

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11						0		1 751
S12						0		2 161
S13						0		23 860
S14						0		26
S15						0		394
S1				28 122		28 122	70	28 192
S2				150		150		150
S1+S2				28 272		28 272	70	28 342

D62 Social benefits other than social transfers in kind

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11								
S12								
S13								
S14						37 411	1 884	39 295
S15								
S1	0	0	0	0	0	37 411	1 884	39 295
S2						231		231
S1+S2	1 751	2 088	33 453	26	323	37 641	1 884	39 525

[excerpt from Table 3.6-2]

D7 Other current transfers (D71+D72+D73+D74+D75)

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11						0		497
S12						0		4 182
S13						0		2 706
S14						0		8 754
S15						0		3 345
S1	0	0	0	0	0	12 728	6 755	19 484
S2						3 911		3 911
S1+S2	1 732	4 150	4 597	6 051	109	16 639	6 755	23 395

[excerpt from Table 3.7-2]

National Accounts of Portugal in 2018 (at current prices, in millions of €).

Measurement of institutional interrelations in distributive transactions.

Santos, S.

Table 3.10-3. Association of the from-whom-to-whom matrices to the use of income, capital and the rest of the world accounts of the aggregated national accounting matrix of transactions with gross balancing items.

Uses/Changes in Assets Resources/Changes in Liabilities and Net Worth		Economy		V. Rest of the world account [Table 2.2-1,2,3,4 and 5]
		Current accounts	Accumulation accounts	
		(II.4) Use of income [Table 2.2-4]	(III.1) Capital [Table 2.2-5]	
Economy	(II.4) Use of income [Table 2.2-4]	Adjustment for the change in pension funds reserve (D8) = 73		
	(III.1) Capital [Table 2.2-5]	Gross Saving = 38 046	Capital transfers (D9) + Acquisitions less disposals of non-produced assets = 2 622	Capital transfers (D9) +Acquisitions less disposals of non-produced assets = 2 219
(V) Rest of the world account [Tables 2.2-1,2,3,4 and 5]			Capital transfers (D9) = 173	

[excerpt from Table 2.3-1]

Cell (III.1, III.1): $2\,622 = 2\,929 - 307$ (acquisitions less disposals of non-produced assets, see Table 2.2-5a)

Cell (V, III.1): $2\,219 = 1\,912 + 307$ (acquisitions less disposals of non-produced assets, see Table 2.2-5a)

D8 Adjustment for the change in pension entitlements

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11								
S12								
S13								
S14		73				73		73
S15								
S1		73				73		73
S2								
S1+S2		73				73		73

[excerpt from Table 3.8-2]

D9 Capital transfers (D91+D92+D99)

	S11	S12	S13	S14	S15	S1	S2	S1+S2
S11						0		1 751
S12						0		1 200
S13						0		978
S14						0		491
S15						0		421
S1	0	0	0	0	0	2 929	1 912	4 841
S2						173		173
S1+S2	202	498	2 392	6	5	3 102	1 912	5 014

[excerpt from Table 3.9-2]

In turn, we have identified distributive transactions explicitly in all accounts of the social accounting matrix, except in the financial account.

The connection of the aggregated version of the social accounting matrix of transactions (Table 2.3-2) with the national accounting matrix, treated in Santos (2022) - in Section 4.2c), pp.68-76, allows us to deduce the possibility of its construction in the same way as the latter, as systematized in Tables 3.10-1 to 3.10-4. Therefore, the possible filling in of the from-whom-to-whom matrices of the distributive transactions from the published information of the accounts of the institutional sectors

allows us to construct aggregated matrices, with the totals of the various categories of transactions. However, versions involving institutional interrelations, at any level of aggregation, are impossible.

In order to overcome this impossibility, we worked in the previous sections on the extension of the published information on the uses of distributive transactions to the destination institutional sectors, which allowed us to quantify institutional interrelations in the from-whom-to-whom matrices. As shown in Tables 3.10-4 and 3.10-5, we now have the necessary information to fill in the sub-matrices that we have called current and capital transactions, in the economy and with the rest of the world, treated in Santos (2022) - in Section 4.2, d.9) and d.10), pp.90-91, in a disaggregated version of the social accounting matrix. We leave it to those interested to exercise the disaggregation of the national accounting matrix, based on the same from-whom-to-whom matrices.

Santos, S.

Uses/Changes in assets			Economy		(rw) Rest of the world account [Tables 2.2-1,2,3,4 and 5]	dic							rw 37
			Institutions accounts (dic) Current [Tables 2.2-3 and 4]			nfc	fc	g	h	npi	total		
Resources/ Changes in liabilities and net worth			(dic) Current [Tables 2.2-3 and 4]	Current transactions (D5,D61, D62,D7, D8) = 98 599	Current transactions (D5,D61,D62,D7) = 9 122	nfc	24	25	26	27	27	27	37
Economy	Institutions		(dic) Current [Tables 2.2-3 and 4]	Current transactions (D5,D61,D62,D7) = 98 599	Current transactions (D5,D61,D62,D7) = 9 122	nfc	24	25	26	27	27	27	37
(rw) Rest of the world account [Tables 2.2-1,2,3,4 and 5]				Current transactions (D5,D61,D62,D7) = 4 544		nfc	24	25	26	27	27	27	37

[legend: nfc - non-financial corporations (S11); fc - financial corporations (S12); g - general government (S13); h – households (S14); npi – non-profit institutions serving households (S15); rw – rest of the world (S2)]

$$(\text{dic, rw}): 9\ 122 = 413 + 70 + 1884 + 6\ 755$$

Cells:

(nfc(S12), fc(S11)): 759

...

[excerpt from Table 3.6-4]

[excerpt from Table 3.8-2]

National Accounts of Portugal in 2018 (at current prices, in millions of €).

Measurement of institutional interrelations in distributive transactions.

Santos, S.

Table 3.10-5. Association of the from-whom-to-whom matrices to the capital transactions of the aggregated and disaggregated social accounting matrices of transactions with gross balancing items.

Uses/Changes in assets Resources/ Changes in liabilities and net worth			Economy	(rw) Rest of the world account [Tables 2.2-1,2,3,4 and 5]	dik							rw
			Institutions accounts (dik) Capital [Table 2.2-5]		nfc	fc	g	h	npi	total		
Economy Institutions	(dik) Capital [Table 2.2-5]	Capital transfers (D9) + Acquisitions less disposals of non-produced assets =	Capital transfers (D9) + Acquisitions less disposals of non-produced assets =	nfc	28	888	1	662	0	0	1 551	200
				fc	29	0	- 74	1 199	0	0	1 125	75
				g	30	140	166	34	6	5	351	627
				h	31	0	330	64	- 1 152	0	- 758	1 249
				npi	32	0	1	355	0	- 3	353	68
				total		1 029	424	2 313	- 1 145	1	2 622	2 219
				rw	37	61	0	112	0	0	173	0
(rw) Rest of the world account [Tables 2.2-1,2,3,4 and 5]			Capital transfers (D9) = 173	[from: Santos (2022) - Secção 4.2, d.10), p.91] [legend: nfc - non-financial corporations (S11); fc - financial corporations (S12); g - general government (S13); h – households								

[from: Santos (2022) - Secção 4.2, d.10), p.91]

[legend: nfc - non-financial corporations (S11); fc - financial corporations (S12); g - general government (S13); h - households (S14); npi - non-profit institutions serving households (S15); rw - rest of the world (S2)]

[excerto do Quadro 2.3-2]

D9 Capital transfers (D91+D92+D99)									
	S11	S12	S13	S14	S15	S1	S2	S1+S2	
S11	0	1	662	0	0	663	1 088	1 751	
S12	0	0	1 199	0	0	1 199	0	1 200	
S13	140	166	0	6	5	318	660	978	
S14	0	330	64	0	0	393	98	491	
S15	0	1	355	0	0	356	65	421	
S1	140	498	2 280	6	5	2 929	1 912	4 841	
S2	61	0	112	0	0	173	173	173	
S1+S2	202	498	2 392	6	5	3 102	1 912	5 014	

Cells:

(dic, dic): 2 622 = 2 929 - 307 (acquisitions less disposals of non-produced assets, see Table 2.2-5a)

(rw, dic): 173

(dic, rw): 2 219 = 1 912 + 307 (acquisitions less disposals of non-produced assets, see Table 2.2-5a)

Cells:

(nfc(S11), g(S13)): 662

(h(S14), h(S14)): - 1 152 (acquisitions less disposals of non-produced assets, see Table 2.2-5a)

(rw(S2), nfc(S11)): 61

...

4. Concluding remarks

Within the scope of the current System of National Accounts - SNA, 2008 (ISWGNA, 2009) - for Europe, ESA, 2010 (EU, 2013), with national accounts statistics published regularly, it is now possible to study in some detail, in a consistent macroeconomic framework, the system of production and the corresponding relations between industries. However, this is impossible with regard to the system of distribution and the corresponding relations between institutional sectors.

Confidentiality, or statistical secrecy, and uncertainty regarding sources and methods are, in general, the arguments used to justify non-publication and restrictions on the disclosure of national accounts statistics on the origin of resources (from-whom) and the destination of uses (to-whom) of distributive transactions. With them, it is possible to measure institutional interrelations, from which the accounts of the institutional sectors are calculated and published.

We believe that professionals working on national accounts in statistical institutes, with access to a wider range of data from different sources of information and with in-depth knowledge of sampling and error handling methods, are better able and available to produce the best possible quantitative description of the institutional interrelations in the distributive transactions of the country they are dealing with. Certainly, with the disclosure of this information, the subjectivity and intuition inherent in the estimates made by users of the published information to fill the lack of data would be alleviated, if not eliminated.

This perception and the observation of the comparative instability in the representative coefficients of the aforementioned interrelations, calculated from existing but not disclosed information, motivated the preparation of this working paper in which we make a proposal that we consider can be understood as a starting point for reviewing the situation and, at the same time, to overcome the non-full use (or waste) of highly useful statistical data, capable of contributing to completing and making national accounts more consistent, as is supposed by the system that underlies them.

Therefore, based on the development and reasoning made in the previous chapters, we propose that to the statistics of national accounts published regularly, in the part relating to the accounts of institutional sectors, others be added relating to the origin of resources (from-whom) and to the destination of uses (to-whom) of distributive transactions. We showed a possible way to do this, with a disaggregation of institutional sectors that did not exceed six (five for the economy and one for the rest of the world), and of distributive transactions that did not exceed the second level, in each category.

We consider that with such information, accompanied by appropriate metadata, it would become possible, within a consistent macroeconomic framework, to identify institutional interrelations, whose level of disaggregation could go as far as statistical secrecy, as well as sources and methods, would allow.

National Accounts of Portugal in 2018.

Measurement of institutional interrelations in distributive transactions.

Santos, S.

Thinking in terms of modelling the economy on the basis of these (more or less detailed) statistics, we could speak of better models and sub-models for the distributive system, just as R. Stone did for the productive system, within the scope of the *Cambridge Growth Project* (Stone, 1981, pp.84-85).

References

European Union - **EU (2013)**, Regulation (EU) No. 549/2013 of the European Parliament and of the European Council of 21 May 2013, on the *European System of National and Regional Accounts in the European Union* – Official Journal of the European Union, L174, Volume 56, 26 June, 732p.

[<https://eur-lex.europa.eu/eli/reg/2010/912/oj>; <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:174:FULL:EN:PDF>]

Inter-Secretariat Working Group on National Accounts (United Nations, European Commission, International Monetary Fund, Organisation for Economic Cooperation and Development and World Bank) – **ISWGNA (2009)**, *System of National Accounts 2008*, Series F, No. 2, Rev. 5, United Nations, New York (USA), 716p. [<http://unstats.un.org/unsd/nationalaccount/sna2008.asp>]

Santos, S. (2022), *National Accounts of Portugal in 2018. Integrated economic accounts, matrix representations and extensions*. MPRA (Munich Personal RePEc Archive) Paper No. 115787, December 2022, 109p.

[https://mpra.ub.uni-muenchen.de/115787/20/MPRA_paper_115787.pdf;
<http://hdl.handle.net/10400.5/25561> , with the corresponding excel file]

Stone, R. (1981), *Aspects of Economic and Social Modelling*, Editions Droz, Genève (Suisse), 154p.

National Accounts of Portugal in 2018 (at current prices, in millions of €).

Measurement of institutional interdependencies in distributive transactions.

Santos, S.

Annex. Recording of the resources of distributive transactions extended to origin institutional sectors¹⁰.

Table A.1. Property income.

		S.11 Non- Financial Corporations	S.12 Financial Corporations	S.13 General Government	S.14 Households	S.15 NPISHs	S.1 Total of the Economy	S.2 Rest of the World	Total
Code Transactions and balancing items									
		Resources							
D4	Property income	9 098	12 129	1 457	11 401	161	34 246	13 319	47 565
	S11 - Non-Financial Corporations	4 324	3 226	546	7 551	112	15 759	6 074	21 833
	S12 - Financial Corporations	1 726	3 146	734	2 242	67	7 914	3 481	11 396
	S13 - General Government	85	2 068	0	1 002	3	3 157	3 761	6 918
	S14 - Households	94	499	2	41	7	643	1	644
	S15 - NPISHs	10	0	0	0	0	10	2	12
	S2 - Rest of the World	2 859	3 190	176	565	- 28	6 762	0	6 762
D41	Interest	1 755	7 893	290	2 936	91	12 965	5 765	18 729
	S11 - Non-Financial Corporations	1 086	1 505	43	764	1	3 400	739	4 140
	S12 - Financial Corporations	360	2 050	148	740	65	3 363	1 262	4 624
	S13 - General Government	85	2 068	0	986	3	3 142	3 761	6 903
	S14 - Households	94	499	2	0	0	595	1	596
	S15 - NPISHs	8	0	0	0	0	8	2	10
	S2 - Rest of the World	122	1 772	96	446	22	2 457	0	2 457
D42	Distributed income of corporations	6 274	3 238	707	6 904	112	17 236	6 720	23 955
	S11 - Non-Financial Corporations	3 190	1 721	152	6 750	111	11 924	4 836	16 760
	S12 - Financial Corporations	1 305	934	555	124	1	2 919	1 884	4 803
	S13 - General Government								
	S14 - Households								
	S15 - NPISHs								
	S2 - Rest of the World	1 780	584		30		2 393		2 393
D43	Reinvested earnings on foreign direct investment	936	615	49	0	- 50	1 550	810	2 360
	S11 - Non-Financial Corporations						0	499	499
	S12 - Financial Corporations						0	311	311
	S13 - General Government						0		0
	S14 - Households						0		0
	S15 - NPISHs						0		0
	S2 - Rest of the World	936	615	49		- 50	1 550		1 550
D44	Other investment income	82	382	61	1 467	2	1 994	24	2 019
	S11 - Non-Financial Corporations						0		0
	S12 - Financial Corporations	61	162	30	1 377	2	1 633	24	1 657
	S13 - General Government						0		0
	S14 - Households						0		0
	S15 - NPISHs						0		0
	S2 - Rest of the World	21	220	31	90	0	362		362
D45	Rents	50	0	351	94	7	501		501
	S11 - Non-Financial Corporations	48	0	351	37		436		436
	S12 - Financial Corporations	0	0		0		0		0
	S13 - General Government		0		16		16		16
	S14 - Households		0		41	7	48		48
	S15 - NPISHs	2	0				2		2
	S2 - Rest of the World		0				0		0

¹⁰ In order not to overload the description, the information in the first line of the header will not be mentioned.

National Accounts of Portugal in 2018 (at current prices, in millions of €).
Measurement of institutional interdependencies in distributive transactions.
Santos, S.

Table A.2. Current taxes on income, wealth, etc.

		S.11 Non- Financial Corporations	S.12 Financial Corporations	S.13 General Government	S.14 Households	S.15 NPISHs	S.1 Total of the Economy	S.2 Rest of the World	Total
Code	Transactions and balancing items								
Resources									
D5	Current taxes on income, wealth, etc.			20 679			20 679	252	20 931
	S11 - Non-Financial Corporations			5 695			5 695	96	5 791
	S12 - Financial Corporations			966			966	108	1 073
	S13 - General Government			40			40	0	40
	S14 - Households			13 557			13 557	44	13 601
	S15 - NPISHs			8			8	5	13
	S2 - Rest of the World			413			413		413
D51	Taxes on income			20 114			20 114	252	20 366
	S11 - Non-Financial Corporations			5 629			5 629	96	5 725
	S12 - Financial Corporations			928			928	108	1 036
	S13 - General Government			17			17		17
	S14 - Households			13 121			13 121	44	13 164
	S15 - NPISHs			6			6	5	11
	S2 - Rest of the World			413			413		413
D59	Other current taxes			565			565	0	565
	S11 - Non-Financial Corporations			66			66		
	S12 - Financial Corporations			38			38		
	S13 - General Government			23			23		
	S14 - Households			436			436		
	S15 - NPISHs			2			2		
	S2 - Rest of the World						0		

Table A.3. Social contributions and benefits.

		S.11 Non- Financial Corporations	S.12 Financial Corporations	S.13 General Government	S.14 Households	S.15 NPISHs	S.1 Total of the Economy	S.2 Rest of the World	Total
Code	Transactions and balancing items								
Resources									
D61	Net social contributions	1 751	2 161	23 860	26	394	28 192	150	28 342
	S11 - Non-Financial Corporations								
	S12 - Financial Corporations								
	S13 - General Government								
	S14 - Households	1 751	2 161	23 790	26	394	28 122	150	28 272
	S15 - NPISHs								
	S2 - Rest of the World			70			70		70
D62	Social benefits other than social transfers in kind				39 295		39 295	231	39 525
	S11 - Non-Financial Corporations				1 751		1 751		1 751
	S12 - Financial Corporations				2 088		2 088		2 088
	S13 - General Government				33 222		33 222	231	33 453
	S14 - Households				26		26		26
	S15 - NPISHs				323		323		323
	S2 - Rest of the World				1 884		1 884		1 884
D63	Social transfers in kind				23 316		23 316		23 316
	S11 - Non-Financial Corporations								
	S12 - Financial Corporations								
	S13 - General Government				19 182		19 182		19 182
	S14 - Households								
	S15 - NPISHs				4 134		4 134		4 134
	S2 - Rest of the World								

National Accounts of Portugal in 2018 (at current prices, in millions of €).
Measurement of institutional interdependencies in distributive transactions.
Santos, S.

Table A.4. Other current transfers.

		S.11 Non- Financial Corporations	S.12 Financial Corporations	S.13 General Government	S.14 Households	S.15 NPISHs	S.1 Total of the Economy	S.2 Rest of the World	Total
Code	Transactions and balancing items								
									Resources
D7	Other current transfers	497	4 182	2 706	8 754	3 345	19 484	3 911	23 395
	S11 – Non-Financial Corporations	0	759	550	0	169	1 478	254	1 732
	S12 – Financial Corporations	407	1 536	42	1 495	54	3 534	617	4 150
	S13 – General Government	13	43	0	264	2 342	2 663	1 935	4 597
	S14 – Households	0	1 126	1 612	1 711	530	4 979	1 072	6 051
	S15 – NPISHs	0	34	16	0	25	75	34	109
	S2 – Rest of the World	77	684	485	5 284	225	6 755	0	6 755
D71	Net non-life insurance premiums		2 808				2 808	279	3 087
	S11 – Non-Financial Corporations		757				757	71	828
	S12 – Financial Corporations		677				677	208	885
	S13 – General Government		34				34	0	34
	S14 – Households		1 126				1 126	0	1 126
	S15 – NPISHs		34				34	0	34
	S2 – Rest of the World		180				180		180
D72	Non-life insurance claims	473	877	33	1 495	20	2 897	225	3 122
	S11 – Non-Financial Corporations								
	S12 – Financial Corporations	407	629	33	1 495	20	2 582	225	2 808
	S13 – General Government								
	S14 – Households								
	S15 – NPISHs								
	S2 – Rest of the World	66	248				314		314
D73	Current transfers within general government			0			0		0
D74	Current international cooperation			452			452	192	645
	S11 – Non-Financial Corporations								
	S12 – Financial Corporations								
	S13 – General Government							192	192
	S14 – Households								
	S15 – NPISHs								
	S2 – Rest of the World			452			452		452
D75	Miscellaneous current transfers	24	497	2 221	7 259	3 325	13 327	1 515	14 842
	S11 – Non-Financial Corporations	0	2	550	0	169	721	183	904
	S12 – Financial Corporations	0	230	10	0	35	274	183	457
	S13 – General Government	13	9	0	264	2 342	2 629	43	2 672
	S14 – Households	0	0	1 612	1 711	530	3 853	1 072	4 925
	S15 – NPISHs	0	0	16	0	25	41	34	75
	S2 – Rest of the World	11	256	33	5 284	225	5 809	0	5 809
D76	VAT- and GNI-based EU own resources						0	1 699	1 699
	S11 – Non-Financial Corporations								
	S12 – Financial Corporations								
	S13 – General Government						0	1 699	1 699
	S14 – Households								
	S15 – NPISHs								
	S2 – Rest of the World								

National Accounts of Portugal in 2018 (at current prices, in millions of €).
Measurement of institutional interdependencies in distributive transactions.
Santos, S.

Table A.5. Capital transfers, receivable.

		S.11 Non- Financial	S.12 Financial Corporations	S.13 General Government	S.14 Households	S.15 NPISHs	S.1 Total of the Economy	S.2 Rest of the World	Total
Code	Transactions and balancing items								
Changes in liabilities and net worth									
D9r	Capital transfers, receivable	1 751	1 200	978	491	421	4 841	173	5 014
	S11 – Non-Financial Corporations	0	0	140	0	0	140	61	202
	S12 – Financial Corporations	1	0	166	330	1	498	0	498
	S13 – General Government	662	1 199	0	64	355	2 280	112	2 392
	S14 – Households	0	0	6	0	0	6	0	6
	S15 – NPISHs	0	0	5	0	0	5	0	5
	S2 – Rest of the World	1 088	0	660	98	65	1 912	0	1 912
D91r	Capital taxes, receivable			0			0	0	0
D92r	Investment grants, receivable	1 384	1	660	144	272	2 460	58	2 518
	S11 – Non-Financial Corporations								
	S12 – Financial Corporations								
	S13 – General Government	326	0		47	207	580	58	638
	S14 – Households								
	S15 – NPISHs								
	S2 – Rest of the World	1 059	0	660	96	65	1 881		1 881
D99r	Other capital transfers, receivable	367	1 199	318	348	149	2 380	115	2 496
	S11 – Non-Financial Corporations		0	140			140	61	202
	S12 – Financial Corporations	1	0	166	330	1	498	0	498
	S13 – General Government	337	1 199		16	148	1 700	54	1 754
	S14 – Households		0	6			6		6
	S15 – NPISHs		0	5			5		5
	S2 – Rest of the World	30	0	0	1		31		31