The SAM as a database for a CGE model for Portugal and its Autonomous Region of the Azores.

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(May, 2011)

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Abstract

In this paper a conceptual reflection is carried out to the work undertaken with the aim of updating for 2005 a Social Accounting Matrix (SAM) constructed for 2001 as a database for a Computable General Equilibrium (CGE) model for the Azores. The construction of a similar SAM to support an application of the same model for Portugal is also part of that same work.
A top-down approach is adopted, and the study adheres to the principle that databases for national and regional models (namely SAMs) should be consistent with national and regional accounts.
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Abbreviations[1]

Az	- Azores
CGE	- Computable General Equilibrium
cif	- cost-insurance-freight included
CPA	- Classification of Products by Activity
ESA	- European System of National and Regional Accounts in the European Community
ESA 95	- European System of National and Regional Accounts in the European Community of 1995
fob	- free on board
GAV	- Gross Added Value
GDP	- Gross Domestic Product
INE	- Statistics Portugal (*Instituto Nacional de Estatística*)
ISEG	- School of Economics and Management (*Instituto Superior de Economia e Gestão*)
NACE	- General Industrial Classification of Economic Activities within the European Union
Pgal	- Portugal
SAM	- Social Accounting Matrix
SNA	- System of National Accounts
SREA	- Statistics Azores (*Serviço Regional de Estatística dos Açores*)

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[1] Besides those that are used to describe the cells of the Basic CGE database and the Basic SAM.

Contents

List of Tables

1. **Introduction**

This paper is part of the work relating to two research projects that have been in progress since January 2009 at two research units: the project entitled (at the outset) "CGE Model for the analysis of economic, social and environmental policies", which is being conducted at the Research Centre for Applied Economics in the Atlantic (CEEAplA) of the Universities of the Azores and Madeira, and the project entitled "Measuring and modelling the activity of society", at the Research Unit on Complexity and Economics (UECE) of ISEG, of the Technical University of Lisbon.

The main purpose of this work is to update for 2005 a so-called Social Accounting Matrix (SAM), constructed for 2001 in order to serve as a database for a CGE model for the Azores and, at the same time, to construct a similar one to support an application of the same model for Portugal in 2005.

Unlike the SAM constructed for the Azores in 2001, all the work for 2005 was undertaken using the published statistical information and carried out by one single person – the author of this paper.

This paper is part of the working paper "The Underlying Database of an Instrument for Economic and Social Policy Analysis for the Azores. Application and Extension to 2005" (Santos, 2011), which document and justify all the work that was undertaken. At the same time, that working paper provides a practical and methodological guide to that same work, which can be used in similar experiments.

The principle adopted by the author is that databases, namely SAMs, for national and regional models, should be consistent with national and regional accounts. A top-down approach is also adopted.

Thus, after some conceptual remarks about the use of the SAM as a database for models, Section 2 begins with a description of the basic forms of the above-mentioned CGE database. Next, taking into account the conceptual framework within which the author usually works, an application for Portugal is formalized and quantified (at an aggregate level). The section ends by identifying the differences between the basic CGE database and the basic SAM for Portugal in 2005.

The final matrices (CGE Databases/SAM) for the Azores and Portugal will not be included in this paper due to their extremely large size: 160 rows by 160 columns. However, in Section 2.1, with the presentation of the basic structure, the disaggregation that was carried out is mentioned for each account, with the specification being shown in Appendix A.4.

The paper ends with some concluding remarks of a conceptual and methodological nature (Section 3).

2. The SAM as a database for models.

"A SAM is a framework both for models of how the economy works as well as for data which monitor its workings. Recognition of this duality is of basic importance for quantitative analysis. It implies, *inter alia*, that the accounting identities which are captured by a SAM are not to be regarded simply as consistency requirements which must be imposed on a model, but rather they should be seen as a logical consequence of the paradigms which economists have adopted for analyzing society." (Pyatt, 1991: 316).

Thus, each SAM (which is always square) can be expressed in two versions: numerical or algebraic. In the numerical version, each cell assumes a specific numerical value, with the sums of the rows being equal to the sums of the columns. It is conventionally agreed that the entries made in rows represent resources, incomes, receipts or changes in liabilities and net worth, whilst the entries made in columns represent uses, outlays, expenditures or changes in assets. In the algebraic version, each cell is represented by algebraic expressions that, together with those of all the other cells, represent a SAM-based model, the calibration of which involves a replication of the numerical version (Santos, 2007: 1; 2009: 3).

On the other hand, "the relationship between SAMs and models has several aspects […] for each model there is a corresponding SAM. The converse does not hold, however. For any given SAM there is a variety of possible models. The choice of the SAM restricts the choice of the models, but it does not determine it uniquely" (Pyatt, 1988: 345). Section 2.1. describes a SAM that corresponds to a specific model and, due to this fact, it will be referred to as the "CGE database"; Section 2.2. describes a SAM that obeys a specific conceptual framework and for which the author is researching a model (see Santos, 2010 and 2009). Section 2.3. systematises the differences between these two SAMs.

2.1. The Basic CGE database for the Azores and Portugal in 2005.

The basic structure of the CGE database for the Azores and Portugal in 2005 is the same as that used for the Azores in 2001, which was constructed to calibrate a CGE model developed under the scope of a project whose main objective was "to develop a multi-sectoral, multi-regional dynamic modeling platform of the Azores economy integrated within the European and global context" (Bayar et. al., 2006: 3). Developments of that model and its applications were published – see, for instance, CEEPplA Working Papers 2-6/ 2009. However, the only information available about the underlying database is a preliminary version entitled "Construction of the Social Accounting Matrix for the Azores" (18 pages), whose author is not named and which is dated August 2007. It was this information and some available Excel files that formed the basis for all the work undertaken for 2005. For this reason, no information source is mentioned in Tables 1 and A.1.

Table 1 describes the basic structure of the CGE database. Almost all of this description is adapted to fit the corresponding model. This structure was adopted in its entirety for the Azores and almost totally for Portugal. In the latter case, some adaptations had to be introduced at the disaggregated level. Tables 2 and 3 are the corresponding numerical versions. In the appendix, Table A.1 is the corresponding matrix for the Azores in 2001. In these numerical versions, the totals may not completely add up, due to the rounding off of some figures.

As stated in the introduction, the final matrices are not included in this paper because of their size: 160 rows by 160 columns. Appendix A.4 specifies the disaggregations of the accounts and the corresponding nomenclatures and correspondences. All the sources of information and the methodological details underlying the work that was undertaken are presented in Santos (2011: 26-37).

The SAM as a database for a CGE model for Portugal and its Autonomous Region of the Azores. *SSantos (May, 2011)*

Table 1. Basic CGE Database/SAM for the Azores and Portugal - description

		(p)	(a)	(ttm)	(fk)	(fl)	(f)	(h)	(g)	(vat)	(id)	(id)	(tp)
Commodities (p)			IO	TTMP				C	CG				
Activities (a)		XD											
Trade and Transport Margins (ttm)		TTM											
Factors (f)	Capital (k)		K										
	Labour (l)		L										
Institutio-nal Sectors	Firms (f)												
	Households (h)				KSH	LSH			TRGH				
	Government (g)									TRCG[1]	TRMG[1]	TREG[1]	TRoCG[1]
Other Accounts	VAT (vat)	TRC[1]											
	Import Duties (id)	TRM[1]											
	Excise Taxes (et)	TRE[1]											
	Other Taxes on Products (tp)	TRoC[1]											
	Subsidies on Products (sp)	TRCS[1]											
	Subsidies on Production (sprod)		TRPS[1]										
	Taxes on Production (tprod)		TRP[1]										
	Taxes on Labour (tl)		TRL[1]										
	Taxes on Capital (tk)		TRK[1]										
	Taxes on Household Income (th)							TRH[1]					
	Subsidies (other) (os)		TRPoS[1]										
Capital (i)			DEPR					SH	SG				
Changes in Inventories (ci)													
Rest of the World (rw)		M											
Total		Total Supply	Total Outlays	TTMP	Capital Outlays (households)	Labour Outlays		Households Outlays	Government Outlays	TRCG	TRMG	TREG	TRoCG

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Table 1. Basic CGE Database/SAM for the Azores and Portugal - description (continued)

		(sp)	(sprod)	(tprod)	(tl)	(tk)	(th)	(os)	(i)	(ci)	(rw)	Total
Commodities (p)									I	SV	E	Total Demand (&TTMP)
Activities (a)												Gross Output
Trade and Transport Margins (ttm)												TTM
Factors (f)	Capital (k)											Capital Income
	Labour (l)											Labour Income
Institutional Sectors	Firms (f)											
	Households (h)										TR$_{RoW}$H	Households Income
	Government (g)	TRCSG[1]	TRPSG[1]	TRPG[1]	TRLG[1;2]	TRKG[1]	TRHG[1]	TRPoSG[1]			TR$_{RoW}$G	Government Income
Other Accounts	VAT (vat)											TRC
	Import Duties (id)											TRM
	Excise Taxes (et)											TRE
	Other Taxes on Products (tp)											TRoC
	Subsidies on Products (sp)											TRCS
	Subsidies on Production (sprod)											TRPS
	Taxes on Production (tprod)											TRP
	Taxes on Labour (tl)											TRL
	Taxes on Capital (tk)											TRK
	Taxes on Household Income (th)											TRH
	Subsidies (other) (os)											TRPoS
Capital (i)											S$_{RoW}$	Savings
Changes in Inventories (ci)									SC			Changes in Inventories
Rest of the World (rw)					TRL$_{RoW}$[1;2]							Foreign Exchange Outflows
Total		TRC	TRPS	TRP	TRL	TRK	TRH	TRPoS	Investment (GCF)	Changes in Inventories	Foreign Exchange Inflows	

[1] Transactions considered twice in the matrix.

[2] TRL is received by the government in the SAM for Portugal and by the Mainland (part of the "rest of the world") in the SAM for the Azores

Key to Table 1 (in alphabetical order):

CG	final consumption of the government
C	final consumption of the households
DEPR	depreciation
E	exports
GCF	gross capital formation
I	investments (gross fixed capital formation and acquisitions less disposals of valuables)
IO	intermediate consumption
K	capital use of the sector
KSH	income from capital received by the households
L	labour use of the sector
LSH	income from labour received by the households
M	imports
SC	total changes in inventories
SH	households' savings
SG	government savings
S_{RoW}	foreign savings
SV	changes in inventories by commodity
TRC	taxes on commodities
TRCG	taxes on products received by the government
TRCS	subsidies on products
TRCSG	subsidies on products paid by the government
TRE	excise taxes
TREG	excise taxes received by the government
TRGH	transfers from the government to the households
TRH	taxes on the households' income
TRHG	taxes on the households' income received by the government
TRK	taxes on capital
TRKG	taxes on capital received by the government
TRL	taxes on wages
TRLG	taxes on labour received by the government (in the case of Portugal)
TRL_{RoW}	taxes on labour received by the Mainland (in the case of the Azores)
TRM	taxes on imports
TRMG	taxes on imports by the government

TRoC   other taxes on products

TRoCG   other taxes on products received by the government

TRP   taxes on production

TRPG   taxes on production received by the government

TRPS   subsidies on production

TRPSG   subsidies on production paid by the government

TRPoS   other subsidies (in the case of the Azores)

TRPoSG   other subsidies paid by the government (in the case of the Azores)

$TR_{RoW}H$ transfers from the rest of the world to the households

$TR_{RoW}G$ transfers from the rest of the world to the government

TTM   trade and transport margins

TTMP   trade and transport margins (part of production)

XD   domestic production or gross output delivered to the domestic market and exported

Table 2. Basic CGE Database/SAM for the Azores in 2005 (in millions of euros)

		Commo-dities	Activities	Trade and Transport Margins	Factors		Institutional Sectors			Other Accounts			
					Capital	Labour	Firms	Households	Government	VAT	Import Duties	Excise Taxes	Other Taxes on Products
Commodities		0	2 354	464	0	0	0	1 737	728	0	0	0	0
Activities		4 951	0	0	0	0	0	0	0	0	0	0	0
Trade and Transport Margins		464	0	0	0	0	0	0	0	0	0	0	0
Factors	Capital	0	727	0	0	0	0	0	0	0	0	0	0
	Labour	0	1 133	0	0	0	0	0	0	0	0	0	0
Institutional Sectors	Firms	0	0	0	0	0	0	0	0	0	0	0	0
	Households	0	0	0	727	1 133	0	0	142	0	0	0	0
	Government	0	0	0	0	0	0	0	0	152	1	52	19
Other Accounts	VAT	152	0	0	0	0	0	0	0	0	0	0	0
	Import Duties	1	0	0	0	0	0	0	0	0	0	0	0
	Excise Taxes	52	0	0	0	0	0	0	0	0	0	0	0
	Other Taxes on Products	19	0	0	0	0	0	0	0	0	0	0	0
	Subsidies on Products	- 8	0	0	0	0	0	0	0	0	0	0	0
	Subsidies on Production	0	- 26	0	0	0	0	0	0	0	0	0	0
	Taxes on Production	0	14	0	0	0	0	0	0	0	0	0	0
	Taxes on Labour	0	90	0	0	0	0	0	0	0	0	0	0
	Taxes on Capital	0	42	0	0	0	0	0	0	0	0	0	0
	Taxes on Household Income	0	0	0	0	0	0	117	0	0	0	0	0
	Subsides (other)	0	- 38	0	0	0	0	0	0	0	0	0	0
Capital		0	655	0	0	0	0	180	- 150	0	0	0	0
Changes in Inventories		0	0	0	0	0	0	0	0	0	0	0	0
Rest of the World		1 572	0	0	0	0	0	0	0	0	0	0	0
Total		7 203	4 951	464	727	1 133	0	2 034	720	152	1	52	19

Sources: see Section 3.

Table 2. Basic CGE Database/SAM for the Azores in 2005 (in millions of euros) (continued)

		Other Accounts							Capital	Changes in Inventories	Rest of the World	Total
		Subsidies on Products	Subsidies on Production	Taxes on Production	Taxes on Labour	Taxes on Capital	Taxes on House-hold Income	Subsides (other)	Capital	Changes in Inventories	Rest of the World	Total
Commodities		0	0	0	0	0	0	0	1 290	20	611	7 203
Activities		0	0	0	0	0	0	0	0	0	0	4 951
Trade and Transport Margins		0	0	0	0	0	0	0	0	0	0	464
Factors	Capital	0	0	0	0	0	0	0	0	0	0	727
	Labour	0	0	0	0	0	0	0	0	0	0	1 133
Institutional Sectors	Firms	0	0	0	0	0	0	0	0	0	0	0
	Households	0	0	0	0	0	0	0	0	0	31	2 034
	Government	- 8	- 26	14	0	42	117	- 38	0	0	396	720
Other Accounts	VAT	0	0	0	0	0	0	0	0	0	0	152
	Import Duties	0	0	0	0	0	0	0	0	0	0	1
	Excise Taxes	0	0	0	0	0	0	0	0	0	0	52
	Other Taxes on Products	0	0	0	0	0	0	0	0	0	0	19
	Subsidies on Products	0	0	0	0	0	0	0	0	0	0	- 8
	Subsidies on Production	0	0	0	0	0	0	0	0	0	0	- 26
	Taxes on Production	0	0	0	0	0	0	0	0	0	0	14
	Taxes on Labour	0	0	0	0	0	0	0	0	0	0	90
	Taxes on Capital	0	0	0	0	0	0	0	0	0	0	42
	Taxes on Household Income	0	0	0	0	0	0	0	0	0	0	117
	Subsides (other)	0	0	0	0	0	0	0	0	0	0	- 38
Capital		0	0	0	0	0	0	0	0	0	625	1 310
Changes in Inventories		0	0	0	0	0	0	0	20	0	0	20
Rest of the World		0	0	0	90	0	0	0	0	0	0	1 663
Total		- 8	- 26	14	90	42	117	- 38	1 310	20	1 663	

Sources: see Section 3.

Table 3. Basic CGE Database/SAM for Portugal in 2005 (in millions of euros)

| | | Commo-dities | Activities | Trade and Transport Margins | Factors | | Institutional Sectors | | | Other Accounts | | | |
					Capital	Labour	Firms	Households	Government	VAT	Import Duties	Excise Taxes	Other Taxes on Products
Commodities		0	148 312	25 139	0	0	0	93 695	34 986	0	0	0	0
Activities		276 675	0	0	0	0	0	0	0	0	0	0	0
Trade and Transport Margins		25 139	0	0	0	0	0	0	0	0	0	0	0
Factors	Capital	0	22 589	0	0	0	0	0	0	0	0	0	0
	Labour	0	58 619	0	0	0	0	0	0	0	0	0	0
Institutional Sectors	Firms	0	0	0	0	0	0	0	0	0	0	0	0
	Households	0	0	0	22 589	58 619	0	0	23 046	0	0	0	0
	Government	0	0	0	0	0	0	0	0	13 006	464	6 022	2 189
Other Accounts	VAT	13 006	0	0	0	0	0	0	0	0	0	0	0
	Import Duties	464	0	0	0	0	0	0	0	0	0	0	0
	Excise Taxes	6 022	0	0	0	0	0	0	0	0	0	0	0
	Other Taxes on Products	2 189	0	0	0	0	0	0	0	0	0	0	0
	Subsidies on Products	- 921	0	0	0	0	0	0	0	0	0	0	0
	Subsidies on Production	0	- 2 328	0	0	0	0	0	0	0	0	0	0
	Taxes on Production	0	1 066	0	0	0	0	0	0	0	0	0	0
	Taxes on Labour	0	16 578	0	0	0	0	0	0	0	0	0	0
	Taxes on Capital	0	4 288	0	0	0	0	0	0	0	0	0	0
	Taxes on Household Income	0	0	0	0	0	0	8 255	0	0	0	0	0
	Subsides (other)	0	0	0	0	0	0	0	0	0	0	0	0
Capital		0	27 551	0	0	0	0	2 306	- 6 860	0	0	0	0
Changes in Inventories		0	0	0	0	0	0	0	0	0	0	0	0
Rest of the World		55 774	0	0	0	0	0	0	0	0	0	0	0
Total		378 348	276 675	25 139	22 589	58 619	0	104 255	51 173	13 006	464	6 022	2 189

Sources: see Section 3.

Table 3. Basic CGE Database/SAM for Portugal in 2005 (in millions of euros) (continued)

		Other Accounts							Capital	Changes in Inventories	Rest of the World	Total
		Subsidies on Products	Subsidies on Production	Taxes on Production	Taxes on Labour	Taxes on Capital	Taxes on House-hold Income	Subsides (other)				
Commodities		0	0	0	0	0	0	0	33 268	381	42 567	378 348
Activities		0	0	0	0	0	0	0	0	0	0	276 675
Trade and Transport Margins		0	0	0	0	0	0	0	0	0	0	58 619
Factors	Capital	0	0	0	0	0	0	0	0	0	0	22 589
	Labour	0	0	0	0	0	0	0	0	0	0	25 139
Institutional Sectors	Firms	0	0	0	0	0	0	0	0	0	0	0
	Households	0	0	0	0	0	0	0	0	0	0	104 255
	Government	- 921	- 2 328	1 066	16 578	4 288	8 255	0	0	0	2 554	51 173
Other Accounts	VAT	0	0	0	0	0	0	0	0	0	0	13 006
	Import Duties	0	0	0	0	0	0	0	0	0	0	464
	Excise Taxes	0	0	0	0	0	0	0	0	0	0	6 022
	Other Taxes on Products	0	0	0	0	0	0	0	0	0	0	2 189
	Subsidies on Products	0	0	0	0	0	0	0	0	0	0	- 921
	Subsidies on Production	0	0	0	0	0	0	0	0	0	0	- 2 328
	Taxes on Production	0	0	0	0	0	0	0	0	0	0	1 066
	Taxes on Labour	0	0	0	0	0	0	0	0	0	0	16 578
	Taxes on Capital	0	0	0	0	0	0	0	0	0	0	4 288
	Taxes on Household Income	0	0	0	0	0	0	0	0	0	0	8 255
	Subsides (other)	0	0	0	0	0	0	0	0	0	0	0
Capital		0	0	0	0	0	0	0	0	0	10 653	33 649
Changes in Inventories		0	0	0	0	0	0	0	381	0	0	381
Rest of the World		0	0	0	0	0	0	0	0	0	0	55 774
Total		- 921	- 2 328	1 066	16 578	4 288	8 255	0	33 649	381	55 774	X

Sources: see Section 3.

2.2. A Basic SAM for Portugal in 2005.

All the work that the author has undertaken with SAMs has a conceptual framework based on the works of Graham Pyatt and his associates (Pyatt, 1988 and 1991; Pyatt and Roe, 1977; Pyatt and Round, 1985), which, in turn, was inspired by Sir Richard Stone's works, beginning with his pioneering 1954 article "Input-Output and the Social Accounts". At the same time, an effort has been made to reconcile that framework with what is defined by the Systems of National Accounts (both the one used by the United Nations and the European one), since, in the author's view , it makes perfect sense for SAMs to be perfectly consonant with those systems, especially in the case of macroeconomic approaches.

Thus, having adopted the characteristics specified at the beginning of this section, some other aspects will now be considered here, namely the following points: each transaction is recorded only once in a cell of its own; rows/columns are organised in the form of production (and trade), institutions and rest of the world accounts, which can be subdivided into yet further accounts; all the transactions taking place between the actors in the economic system and measured by the system of national accounts are included in the SAM, which can therefore be considered to provide a complete account of the circular flow in the economy (see, Santos, 2009: 3-8).

Santos (2010) works with a SAM with those characteristics for the year of this study – 2005. Table 4 is a fully aggregated version of the SAM presented in that study, while the description of the cells of that same SAM was also adopted. This can be seen in Table 5.

Table 4. Portuguese Macro SAM for 2005 (in millions of euros)

Incomes (receipts) / Outlays (expenditures)		Production and Trade			(domestic) Institutions accounts			rest of the world (rw)	TOTAL
		products (p)	activities (a)	factors of prod. (f)	current (dic)	capital (dik)	financial (dif)		
Production and Trade	products (p)	Trade and Transport Margins (0)	Intermediate Consumption (148 312)	0	Final Consumption (126 644)	Gross Capital Formation (33 649)	0	Exports (42 567)	Aggregate Demand (351 173)
	activities (a)	Production (276 675)	0	0	0	0	0	0	Production Value (276 675)
	factors of production (f)	0	Gross Added Value, at factor cost (129 626)	0	0	0	0	Compensation of Factors from the RW (7 822)	Aggregate Factors Income (137 447)
(domestic) Institutions accounts	current (dic)	Net taxes on products (20 899)	Net taxes on production (-854)	Gross National Income, at factor cost (126 179)	Current Transfers (78 861)	0	0	Current Transfers from the RW (4 603)	Aggregate Income (229 688)
	capital (dik)	0	0	0	Gross Saving (19 025)	Capital Transfers (8 174)	Net borrowing (12 335)	Capital Transfers from the RW (2 404)	Investment Funds (41 937)
	financial (dif)	0	0	0	0	0	Financial Transactions (37 825)	Financial Transactions from the RW (31 113)	Total financial transactions (68 938)
rest of the world (rw)		Imports + net taxes on products (53 737 - 139)	Net taxes on production (-409)	Compensation of Factors to the RW (11 269)	Current Transfers to the RW (5 158)	Capital Transfers to the RW (114)	Financial Transactions to the RW (18 779)		Transactions Value to the RW (88 509)
TOTAL		Aggregate Supply (351 173)	Total Costs (276 675)	Aggregate Factors Income (137 447)	Aggregate Income (1229 688)	Aggregate Investment (41 937)	Total financial transactions (68 938)	Transactions Value from the RW (88 509)	

Sources: Statistics Portugal (*INE*); Portuguese Central Bank (*Banco de Portugal*) – Portuguese National and Financial Accounts for 2005.

(Santos, 2010: 5)

Table 5. National Accounts transactions in the cells of the Macro SAM

SAM			National Accounts transactions[2]	
row	column	Description (valuation[3])	(SNA) code	Description (valuation[3])
p	p	trade and transport margins	---	trade and transport margins
a	p	production (basic prices)	P1	Output (basic prices)
dic	p	net taxes on products (paid to domestic institutions - general government)	D21- -D31	taxes on products *minus* subsidies on products
rw	p	net taxes on products (paid to the RW)		
		imports (cif prices)	P7	imports of goods and services (cif prices)
p	rw	exports (fob prices)	P6	exports of goods and services (fob prices)
p	*a*	intermediate consumption (purchasers' prices)	P2	intermediate consumption (purchasers' prices)
p	dic	final consumption (purchasers' prices)	P3	final consumption expenditure (purchasers' prices)
p	dik	gross capital formation (purchasers' prices)	P5	gross capital formation (purchasers' prices)
f	*a*	gross added value (factor cost)	D1 D4 B2g B3g	compensation of employees net property income gross operating surplus gross mixed income
dic	*a*	net taxes on production (paid to domestic institutions - general government)	D29-	other taxes on production *minus*

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[2] Transactions at the first level of disaggregation, in accordance with the European System of National and Regional Accounts in the European Community of 1995 – ESA 95 (Eurostat, 1996) – which is itself based on the 1993 version of the International United Nations System of National Accounts – SNA 93 – prepared by the Inter-Secretariat Working Group on National Accounts and published by the United Nations Statistical Office (ISWGNA, 1993).

[3] In the transactions represented by the cells whose row and/or column denotes production accounts, the following types of valuation are identified: factor cost; basic, cif and fob prices; purchasers' or market prices.
Factor cost represents the compensation of the factors, or the primary incomes arising from the labour and capital used in the production process of the domestic economy, excluding taxes on production and imports (taxes on products and other production taxes) and subsidies (subsidies on products and other subsidies on production).
At the second level of disaggregation, one can distinguish between the production of the domestic economy and imports. In the first case, this is measured by the factor cost from the previous level, plus (other) taxes on production) net of subsidies on production, as well as by intermediate consumption. This represents the basic price level of the (domestic) production that will be transacted in the domestic market and the fob (free on board) price level of the production that will be exported. Imports, valued at cif (cost-insurance-freight included) prices, are added, at this level, to the above-mentioned unexported part of domestic production that will be transacted in the domestic market.
Purchasers' or market prices relate to products, either domestically produced or imported, that are transacted in the domestic market. Here, the basic/cif prices will be increased by adding to them the trade and transport margins and the taxes net of subsidies on products.

SAM			National Accounts transactions[2]	
row	column	Description (valuation[3])	(SNA) code	Description (valuation[3])
rw	*a*	net taxes on production (paid to the RW)	-D39	other subsidies on production
dic	f	gross national income	B5g	gross national income
rw	f	compensation of factors to the RW	D1 D4	primary income paid to/received from the rest of the world compensation of employees net property income
f	rw	compensation of factors from the RW		
dic	dic	current transfers within domestic institutions	D5 D6 D7 D8	current taxes on income, wealth, etc. social contributions and benefits other current transfers adjustment for the change in the net equity of households in pension funds reserves
rw	dic	current transfers to the RW		
dic	rw	current transfers from the RW		
dik	dic	gross saving	B8g	gross saving
dik	dik	capital transfers	D9	capital transfers
dik	rw	capital transfers from the RW		
rw	dik	capital transfers to the RW		
dik	dif	- net borrowing[4]	B9	net borrowing
dif	dif	financial transactions	F1 F2 F3 F4 F5 F6 F7	monetary gold and special drawing rights (SDRs) currency and deposits securities other than shares loans shares and other equity insurance technical reserves other accounts receivable/payable
rw	dif	financial transactions to the RW		
dif	rw	financial transactions from the RW		

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[4]   In the National Accounts, the net lending (+) or borrowing (-) of the total economy is the sum of the net lending or borrowing of the institutional sectors. It represents the net resources that the total economy makes available to the rest of the world (if positive) or receives from the rest of the world (if negative). The net lending (+) or borrowing (-) of the total economy is equal, but with an opposite mathematical sign, to the net borrowing (-) or lending (+) of the rest of the world (Eurostat, 1996: paragraph 8.98).

In the SAM's capital account, net lending or borrowing is considered to be a component of the investment funds required/not required to cover the aggregate investment. In other words, it is the financing requirement/capacity of the economy that will be covered/absorbed by financial transactions (from/to the rest of the world, since the national funds are not enough/in excess). Therefore, if there is net borrowing, we have a financing requirement that is covered by financial transactions, i.e. a resource of the capital account (row) and a use of the financial account (column). If there is net lending, we have financing capacity that is absorbed by financial transactions, i.e. a resource of the financial account (row) and a use of the capital account (column).

SAM			National Accounts transactions[2]	
row	column	Description (valuation[3])	(SNA) code	Description (valuation[3])
p	total	aggregate demand		row sum of the p account's cells (see above)
total	p	aggregate supply		column sum of the p account's cells (see above)
a	total	production value	P1	output (basic prices)
total	*a*	total costs		column sum of the *a* account's cells (see above)
f	total	aggregate factors income		row sum of the f account's cells (see above)
total	f			column sum of the f account's cells (see above)
dic	total	aggregate income		row sum of the dic account's cells (see above)
total	dic			column sum of the dic account's cells (see above)
dik	total	investment funds		row sum of the dik account's cells (see above)
total	dik	aggregate investment		column sum of the dik account's cells (see above)
dif	total	total financial transactions		row sum of the dif account's cells (see above)
total	dif			column sum of the dif account's cells (see above)
rw	total	transactions value to the rest of the world		row sum of the rw account's cells (see above)
total	rw	transactions value from the rest of the world		column sum of the rw account's cells (see above)

Source: Santos (2010: 6-7).

Note: See the correspondence identified between this Table and the values (in brackets) of the Portuguese Macro SAM for 2005 – Table 4, in the Integrated Economic Accounts for Portugal in 2005 – Appendix A.3.

We, therefore, have a SAM that is completely consonant with the National Accounts, displaying all the characteristics that were referred to at the beginning of this section.

This SAM was also worked upon at some level of disaggregation. Thus, in the case of the domestic economy, "Production and Trade" was divided into six groups of products and activities[5] and two factors of production – labour (employees) and own assets (employers and/or own account workers and capital). In turn, "Institutions" were divided into current, capital and financial accounts, with the last of these being a totally aggregate figure (due to a lack of information about the "from whom to whom" transactions) while the others were divided into: households, enterprises (or non-financial corporations), financial corporations, general government and non-profit institutions serving households (NPISH). Besides these accounts, we also have an aggregate account for the "rest of the

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[5] Respectively: group P6 of the "Classification of Products by Activity (CPA)" – principal products of activities according to NACE Rev.1., and group A6 of the "New Statistical Nomenclature of the Economic Activities in the European Community (NACE)" Rev. 1.

world" (Santos, 2010: 2-3). From this SAM, and for the purpose of comparing it with the so-called "Basic CGE database", presented in sub-section 2.1, the so-called "Basic SAM" was constructed with the cells described in Table 6 and quantified in Table 7. In the case of Table 6, the description is adapted to the model which, as has already been mentioned, the author is currently researching (see, Santos, 2010 and 2009).

Table 6. Basic SAM for Portugal – description

	(p)	(a)	(fle)	(foa)	(dich)	(dicnfc&fc)	(dicg&np)	(dikh)	(diknfc&fc)	(dikg&np)	(dif)	(rw)	total
products (p)	TM	VIC			FC_h		$FC_{g\&np}$	GCF				EX	AD
activities (a)	VP												VPT
factors — labour (fle) (employees)		$GAV_{fle,a}$										$CFR_{fle,rw}$	$AFIR_{fle}$
factors — own assets (foa)		$GAV_{foa,a}$										$CFR_{foa,rw}$	$AFIR_{foa}$
current (dic) — households (h)			$GNI_{h,fle}$	$GNI_{h,foa}$	$CT_{dic,dic}$							$CT_{dic,rw}$	AI
current (dic) — non&financial corporations (nfc&fc)				$GNI_{nfc\&fc,foa}$								$CT_{dic,rw}$	AI
current (dic) — government &npish (g&np)	NTP	NTA		$GNI_{g\&np,foa}$								$CT_{dic,rw}$	AI
capital (dik) — households (h)					S_h			$KT_{dic,dic}$			NLB	$KT_{dic,rw}$	INVF
capital (dik) — non&financial corporations (nfc&fc)						$S_{nfc\&fc}$					NLB	$KT_{dic,rw}$	INVF
capital (dik) — government &npish (g&np)							$S_{g\&np}$				NLB	$KT_{dic,rw}$	INVF
financial (dif)											$FT_{dif,dif}$	$FT_{dif,rw}$	TFTR
rest of the world (rw)	IM + NTP	NTA	$CFS_{rw,fle}$	$CFS_{rw,foa}$	$CT_{rw,dic}$			$KT_{rw,dic}$			$FTrw,dif$		TVRWP
total	AS	VCT	$AFIP_{fle}$	$AFIP_{foa}$	AIP			AINV			TFTP	TVRWR	

Source: Santos (2010)

Key to Table 6 (in alphabetical order):

AD	value of aggregate demand
AFIP	aggregate factors income (paid)
AFIR	aggregate factors income (received)
AI	aggregate income (received)
AINV	aggregate investment
AIP	aggregate income (paid)
AS	aggregate supply
CFR	compensation of the factors of production received from the rest of the world
CFS	compensation of the factors of production sent to the rest of the world
CT	current transfers
EX	value of exports
FC	value of final consumption
FT	financial transactions
GAV	gross added value
GCF	value of gross capital formation
GNI	gross national income
IM	value of imports
INVF	investment funds
KT	capital transfers
NLB	net lending / borrowing
NTA	net taxes on production
NTP	net taxes on products
S	gross saving
TFTP	total financial transactions (paid)
TFTR	total financial transactions (received)
TM	trade and transport margins
TVRWP	value of transactions to the rest of the world
TVRWR	value of transactions from the rest of the world
VCT	value of total costs
VIC	value of intermediate consumption
VP	value of production
VPT	total production value

Table 7. The Basic SAM for Portugal in 2005 (in millions of euros)

			(p)	(a)	(fle)	(foa)	(dich)	(dicnfc&fc)	(dicg&np)	(dikh)	(diknfc&fc)	(dikg&np)	(dif)	(rw)	total
Production and Trade		Products (p)	0	148 312			93 695		34 986		33 648			42 576	353 210
		Activities (a)	276 675												276 675
	factors	labour (fle) (employees)		75 358										189	75 547
		own assets (foa)		54 267										7 633	61 900
(domestic) Institutions accounts	current (dic)	households (h)			75 198	31 058									229 688
		non&financial corporations (nfc&fc)	20 899	- 854		19 646		78 861						4 603	
		government &npish (g&np)				277									
	capital (dik)	households (h)					9 544								41 937
		non&financial corporations (nfc&fc)						13 956			8 174		12 335	2 404	
		government &npish (g&np)								- 4 475					
		Financial (dif)											37 825	31 113	68 938
rest of the world (rw)			55 774[6] -139	- 409	350	10 919	5 158			114			18 779		88 509
Total			353 209	276 675	75 547	61 900	229 688			41 937			68 938	88 509	

Source: Table A.2.

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[6] The differences between these amounts and those of Table A.2, are the direct purchases abroad made by households, which are considered here as an import and included in the final consumption of the households, whereas, in Table A.2 and the underlying work (Santos, 2010), these are considered as current transfers from the households to the rest of the world.

2.3. Differences between the Basic CGE database and the Basic SAM.

Table 8. Cells of the Basic CGE database directly related with the cells of the Basic SAM

(A) CGE Database/SAM			(B) SAM			National Accounts Transactions		(A)-(B)	
Cell (row, column)	Value (10^6 Euros)	Description	Cell (row, column)	Value (10^6 Euros)	Description	(SNA) code	Description (valuation)	Value (10^6 Euros)	Description
(*p*, *ttm*)	25 139	TTMP: Trade and Transport Margins (part of Production)	(p,p)	0	TM: Trade and Transport Margins	---	trade and transport margins	25 139	TM = TTMP - TTM
(*ttm*,*p*)	25 139	TTM: Trade and Transport Margins						25 139	
(*a*,*p*)	276 675	XD: Domestic production	(*a*,p)	276 675	VP: Value of Production	P1	output (basic prices)	0	---
(*p*,*a*)	148 312	IO: intermediate consumption	(p,*a*)	148 312	VIC: Value of Inter-mediate Consumption	P2	intermediate consumption (purchasers' prices)	0	---
(*p*,*h*)	93 695	C: final Consumption of the households	(p,dich)	93 695	FC$_h$: value of Final Consumption of the households	P3	final consumption expenditure (purchasers' prices)	0	---
(*p*,*g*)	34 986	CG: final Consumption of the Government	(p, dicg&np)	34 986	FC$_{g\&np}$: value of Final Consumption of the government&npish			0	---
(*p*,*i*)	33 268	I: Investments (gross fixed capital formation and acquisitions less disposals of valuables)	(p,dik)	33 648	GCF: value of Gross Capital Formation	P5	gross capital formation (purchasers' prices)	0	GCF = I+SV; GCF = I+SC
(*p*,*ci*)	381	SV: changeS in inVent-tories by commodity							
(*ci*,*i*)	381	SC: total ChangeS in inventories							
(*p*,*rw*)	42 576	E: Exports	(p,rw)	42 576	*EX*: value of EXports	P6	exports of goods and services (fob prices)	0	---
(*rw*,*p*)	55 774	M: iMports	(rw,p) (part)	55 774	*IM*: value of IMports	P7	imports of goods and services (cif prices)	0	---
(*i*,*h*)	2 306	SH: Households Savings	(dikh,dich)	9544	S$_h$: gross Saving of the households	B8g	gross saving	- 7 238	(A) does not consider the part of the current and capital transfers,
(*i*,*a*)	27 551	DEPR	(diknfc&fc,	13 956	S$_{nfc\&fc}$: gross Saving			- 13 594	

(A) CGE Database/SAM			(B) SAM			National Accounts Transactions		(A)-(B)	
Cell (row, column)	Value (10^6 Euros)	Description	Cell (row, column)	Value (10^6 Euros)	Description	(SNA) code	Description (valuation)	Value (10^6 Euros)	Description
			dicnfc&fc)		of non&financial corporations				which are, respectively, a component of the disposable income of domestic institutions and of investment funds. However, this gap is filled by DEPR.
(*i,g*)	- 6 860	SG: Government Savings	(dikg&np, dicg&np)	- 4 475	$S_{g\&np}$: gross Saving of the government&npish			- 2 385	
(*i,rw*)	10 653	S_{RoW}: Foreign Savings	(dik,dif)	12 335	NLB: net lending / borrowing	B9	net lending (+) /borrowing (-)	- 1 682	
(*vat, p*)	13 006	TRC: Taxes on products	(dicg&np, p)	20 899	NTP: net taxes on products (paid to the Portuguese government and to the European Union Institutions, or the rest of the world)	D21- -D31	taxes on products *minus* subsidies on products	0	NTP = = TRC+TRM+ TRE +TRoC + TRCS = TRCG+TRMG +TREG+ TRoCG + TRCSG (A) does not distinguish between who really receives the taxes and who pays the subsidies on products.
(*g, vat*)		TRCG: Taxes on products received by the government							
(*id, p*)	464	TRM: Taxes on imports							
(g, *id*)		TRMG: Taxes on imports received by the government							
(*et, p*)	6 022	TRE: Excise taxes							
(*g, et*)		TREG: Excise taxes received by the government							
(*tp, p*)	2 189	TRoC: Other taxes on products							
(*g, tp)*		TRoCG: Other taxes on products received by the government							
(*sp, p*)	- 921	TRCS: Subsidies on products							
(*g, sp*)		TRCSG: Subsidies on products paid by the government	(rw,p) (part)	- 139					
(*sprod, a*)	- 2 328	TRPS: Subsidies on production	(dicg&np, a)	- 854	NTA: net taxes on production (paid to the Portuguese government and to the European Union Institutions, or the rest of the world)	D29- -D39	other taxes on production *minus* other subsidies on production	0	NTA = = TRPS + TRP = TRPSG+TRPG (A) does not distinguish between who really receives
(*g, sprod*)		TRPSG: Subsidies on production paid by the government							
(*tprod, a*)	1 066	TRP: Taxes on production							

(A) CGE Database/SAM			(B) SAM			National Accounts Transactions		(A)-(B)	
Cell (row, column)	Value (10^6 Euros)	Description	Cell (row, column)	Value (10^6 Euros)	Description	(SNA) code	Description (valuation)	Value (10^6 Euros)	Description
(*g, tprod*)		TRPG: Taxes on production received by the government	(rw,*a*)	- 409					the taxes and who pays the subsidies on production.

Sources: Tables 1, 3, 6 and 7

Table 9. Cells of the Basic CGE database indirectly related with the cells of the Basic SAM

(A) CGE Database/SAM			National Accounts Transactions		(B) SAM			National Accounts Transactions		(A)-(B)	
Cell (row, column)	Value (10^6 Euros)	Description	(SNA) code	Description (valuation)	Cell (row, column)	Value (10^6 Euros)	Description	(SNA) code	Description (valuation)	Value (10^6 Euros)	Description
(*tl, a*)	16 578	TRL: Taxes on wages	D12 (D61)	employers' social contributions (social contributions)	(fle, *a*)	75 358	$GAV_{fle,a}$: gross added value (factor cost), part of compensation of employees paid by the activities	D1 (=D11+D12)	compensation of employees	0	$GNI_{h,fle}$ = TRL + L = TRLG + LSH
(*g, tl*)		TRLG: Taxes on labour received by the government			(dich, fle)	75 198	$GNI_{h,fle}$: gross national income, part of compensation of employees received by households				
(*l, a*)	58 619	L: Labour use of the sector	D11	wages and salaries	(rw,fle)	350	$CFS_{rw,fle}$: compensation of employees paid to the rest of the world			- 161	$CFR_{fle,rw}$ - $CFS_{rw,fle}$ $GAV_{fle,a}$ + ($CFR_{fle,rw}$ - $CFS_{rw,fle}$) = TRL + L = TRLG + LSH
(*h, fl*)		LSH: Income from labour received by the households			(fle, rw)	189	$CFR_{fle,rw}$: compensation of employees received from the rest of the world				

The SAM as a database for a CGE model for Portugal and its Autonomous Region of the Azores. *SSantos (May, 2011)*

(A) CGE Database/SAM					(B) SAM					(A)-(B)	
Cell (row, column)	Value (10^6 Euros)	Description	National Accounts Transactions		Cell (row, column)	Value (10^6 Euros)	Description	National Accounts Transactions		Value (10^6 Euros)	Description
			(SNA) code	Description (valuation)				(SNA) code	Description (valuation)		
(k, a)	22 589	K: Capital use of the sector	B3g	gross mixed income	(foa, a)	54 267	$GAV_{foa,a}$: gross added value (factor cost), part compensation of own account workers and capital paid by the activities	B3g / B2g	gross mixed income / gross operating surplus	- 31 678	B3g+D4(net)
(h, fk)		KSH: Income from capital received by the households			(dich, foa)	31 058	GNI: gross national income, received by households and other institutions	D4	net property income	- 19 646	
--	--	--	--	--	(dicnfc&fc, foa)	19 646				- 19 646	
--	--	--	--	--	(dicg&np, foa)	277				- 277	
--	--	--	--	--	(foa, rw)	7 633	$CFR_{foa,rw}$: compensation capital paid to the rest of the world	D4	property income	- 7 633	(A) does not consider this item
--	--	--	--	--	(rw, foa)	10 919	$CFS_{rw,foa}$: compensation capital received from the rest of the world			- 10 919	
(th, h)	8 255	TRH: Taxes on the households' income	D5	current taxes on income, wealth, etc.	(dic, dic)	78 861	CT: current transfers	D5 / D6 = D61 + D62 + D63	current taxes on income, wealth, etc. / social contributions and benefits =		a) current and capital transfers involving institutions other than households and government are not considered in (A)
(g, th)		TRHG: Taxes on the households' income received by the government									

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(A) CGE Database/SAM					(B) SAM					(A)-(B)	
Cell (row, column)	Value (10⁶ Euros)	Description	National Accounts Transactions		Cell (row, column)	Value (10⁶ Euros)	Description	National Accounts Transactions		Value (10⁶ Euros)	Description
			(SNA) code	Description (valuation)				(SNA) code	Description (valuation)		
(tk, a)	4 288	TRK: Taxes on capital							social contributions + social benefits other than social transfers in kind + social transfers in kind	b) in the current and capital transfers with the rest of the world , (A) only considers a part of the transfers recorded from the rest of the world to the government	
(g, tk)		TRKG: Taxes on capital received by the government						D7	other current transfers	c) a part of the current transfers between government and households is not considered in (A)	
(h, g)	23 046	TRGH: Transfers from the government to the households	D62	social benefits other than social transfers in kind	(rw, dic)	5 158		D8	adjustment for the change in the net equity of households in pension funds reserves		
			D7	other current transfers	(dic, rw)	4 603					
(g, rw)	2 554	TR$_{RoW}$G: Transfers from the rest of the world to the government	D92	investment grants	(dik, dik)	8 174	KT: capital transfers	D9 = D91 + D92 + D99	capital transfers = capital taxes + investment grants + other capital transfers		
			D99	other capital transfers	(rw, dik)	114					
					(dik, rw)	2 404					
					(dif, dif)	37 825	FT: financial transactions	F1-7	financial transactions	(A) does not consider financial transactions.	
					(dif, rw)	31 113					
					(rw, dif)	18 779					

Sources: Tables 1, 3, 6 and 7

3. Concluding Remarks

Nowadays, in the case of developed market economies, macro models generally enjoy the support of consistent and credible databases. The adoption, adaptation and consequent improvement of the United Nations' System of National Accounts (SNA) have been of crucial importance in guaranteeing these conditions. This is the case with the European System of Accounts (ESA), which is the adaptation of the SNA to the European Union, of which Portugal is member. Therefore, all the measured part of the economic activity of a country is periodically quantified, and the information collected is then published, providing further data for those databases. At the regional level, there are the Regional Accounts, which are consonant with the National Accounts, although they do not yet have the same level of detail.

In databases designed to support macro models, at either the regional or the national level, in addition to the part representing the relationship between the economy and the exterior, the relationships within the economy must also be represented. Two parts should be identified in the relationships within the economy: one representing the processes of production and trade and their corresponding results; the other representing the distribution, redistribution and use of income. This income is the one that is generated by the processes of production and trade and comes from the rest of the world, when the economy has net borrowing. The elements that intervene in the processes of production and trade are the production activities or industries that, through the use of the factors of production, produce goods and services, or products. In turn, through their current, capital and financial accounts, the institutions or institutional sectors intervene in the distribution, redistribution and use of the income.

According to the SNA and ESA, supply and use tables support the first part (production and trade), whereas the institutional accounts support the second part (distribution, redistribution and use of income). Both support the quantification of the relationship between the economy and the exterior, which in turn is summarised through the integrated economic accounts. These are an important source of information, not only for working at a highly aggregated level, but also for confirming the consistency of the whole system.

Therefore, regardless of the purpose of each macro model and the particular emphasis that one may wish to give to one part of the economy or another, it is important that these relationships and their corresponding parts are represented, at least at an aggregated level. This was one of the main concerns of the author of this work.

For specific aspects or situations, involving certain disaggregations, other sources of information are needed. This is the case with the country's regions, as in the case of the Azores, for which

supply and use tables and institutional accounts do not exist. An Input-Output matrix should be available, as well as all the possible information from the local government and financial and non financial corporations (enterprises).

The availability of systematised descriptions of the sources and methods used in creating the databases underlying the models, together with a continued concern in ensuring consistency and the use of credible sources of information, will certainly help to avoid biased analysis and lead to better decision-making in terms of economic and social policy.

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Appendixes

Appendix/Table A.1. Basic CGE Database/SAM for Azores in 2001 (in millions of euros)

		Commo-dities	Activities	Trade and Transport Margins	Factors		Institutional Sectors			Other Accounts			
					Capital	Labour	Firms	Households	Government	VAT	Import Duties	Excise Taxes	Other Taxes on Products
Commodities		0	1 837	356	0	0	0	1 470	738	0	0	0	0
Activities		3 777	0	0	0	0	0	0	0	0	0	0	0
Trade and Transport Margins		356	0	0	0	0	0	0	0	0	0	0	0
Factors	Capital	0	545	0	0	0	0	0	0	0	0	0	0
	Labour	0	1 155	0	0	0	0	0	0	0	0	0	0
Institutional Sectors	Firms	0	0	0	0	0	0	0	0	0	0	0	0
	Households	0	0	0	545	1 155	0	0	112	0	0	0	0
	Government	0	0	0	0	0	0	0	0	127	0	35	12
Other Accounts	VAT	127	0	0	0	0	0	0	0	0	0	0	0
	Import Duties	0	0	0	0	0	0	0	0	0	0	0	0
	Excise Taxes	35	0	0	0	0	0	0	0	0	0	0	0
	Other Taxes on Products	12	0	0	0	0	0	0	0	0	0	0	0
	Subsidies on Products	- 6	0	0	0	0	0	0	0	0	0	0	0
	Subsidies on Production	0	- 17	0	0	0	0	0	0	0	0	0	0
	Taxes on Production	0	9	0	0	0	0	0	0	0	0	0	0
	Taxes on Labour	0	64	0	0	0	0	0	0	0	0	0	0
	Taxes on Capital	0	11	0	0	0	0	0	0	0	0	0	0
	Taxes on Household Income	0	0	0	0	0	0	63	0	0	0	0	0
	Subsides (other)	0	- 44	0	0	0	0	0	0	0	0	0	0
Capital		0	216	0	0	0	0	303		0	0	0	0
Changes in Inventories		0	0	0	0	0	0	0	0	0	0	0	0
Rest of the World		1 419	0	0	0	0	0	0	0	0	0	0	0
Total		5 719	3 777	356	545	1 155	0	1 836	849	127	0	35	12

Appendix/Table A.1. Basic CGE Database/SAM for Azores in 2001 (in millions of euros) (continued)

		Other Accounts							Capital	Changes in Inventories	Rest of the World	Total
		Subsidies on Products	Subsidies on Production	Taxes on Production	Taxes on Labour	Taxes on Capital	Taxes on House-hold Income	Subsides (other)				
Commodities		0	0	0	0	0	0	0	747	35	536	5 718
Activities		0	0	0	0	0	0	0	0	0	0	3 777
Trade and Transport Margins		0	0	0	0	0	0	0	0	0	0	356
Factors	Capital	0	0	0	0	0	0	0	0	0	0	545
	Labour	0	0	0	0	0	0	0	0	0	0	1 155
Institutional Sectors	Firms	0	0	0	0	0	0	0	0	0	0	0
	Households	0	0	0	0	0	0	0	0	0	24	1 836
	Government	- 6	- 17	9	0	11	63	- 44	0	0	659	849
Other Accounts	VAT	0	0	0	0	0	0	0	0	0	0	127
	Import Duties	0	0	0	0	0	0	0	0	0	0	0
	Excise Taxes	0	0	0	0	0	0	0	0	0	0	35
	Other Taxes on Products	0	0	0	0	0	0	0	0	0	0	12
	Subsidies on Products	0	0	0	0	0	0	0	0	0	0	- 6
	Subsidies on Production	0	0	0	0	0	0	0	0	0	0	- 17
	Taxes on Production	0	0	0	0	0	0	0	0	0	0	9
	Taxes on Labour	0	0	0	0	0	0	0	0	0	0	64
	Taxes on Capital	0	0	0	0	0	0	0	0	0	0	11
	Taxes on Household Income	0	0	0	0	0	0	0	0	0	0	63
	Subsides (other)	0	0	0	0	0	0	0	0	0	0	- 44
Capital		0	0	0	0	0	0	0	0	0	263	782
Changes in Inventories		0	0	0	0	0	0	0	35	0	0	35
Rest of the World		0	0	0	64	0	0	0	0	0	0	1 483
Total		- 6	- 17	9	64	11	63	- 44	782	35	1 483	

Appendix/Table A.2. SAM for Portugal in 2005 (in millions of euros)

Outlays (expenditures) \ Incomes (receipts)				PRODUCTS: Products of agriculture, hunting, forestry (1)	Products from mining and quarrying (2)	Construction work (3)	Wholesale and retail trade services (4)	Financial intermediation services, real estate (5)	Other services (6)	Total	ACTIVITIES: Agriculture, hunting and forestry (7)	Industry, including energy (8)	Construction (9)	Wholesale and retail trade (10)	Financial, real-estate, renting (11)	Other service activities (12)	Total	FACTORS: Labour-employees (13)	Own assets (14)	Total
PRODUCTION	PRODUCTS	Products of agriculture …	1	0	0	0	0	0	0	0	1 041	4 779	0	631	40	176	6 666	0	0	0
		Products from mining and …	2	0	0	0	0	0	0	0	2 038	46 816	8 915	11 595	1 912	5 994	77 270	0	0	0
		Construction work	3	0	0	0	0	0	0	0	93	735	8 729	771	1 010	326	11 663	0	0	0
		Wholesale and retail trade…	4	2 216	22 919	0	-25 139	0	4	0	157	2 285	244	8 232	1 519	2 605	15 043	0	0	0
		Financial intermediation…	5	0	0	0	0	0	0	0	428	5 690	1 236	9 422	12 411	4 528	33 714	0	0	0
		Other services	6	0	0	0	0	0	0	0	33	267	21	464	610	2 560	3 955	0	0	0
		Total		2 216	22 919	0	-25 139	0	4	0	3 790	60 571	19 145	31 115	17 503	16 189	148 312	0	0	0
	ACTIVITIES	Agriculture, hunting and forestry…	7	6 949	406	16	28	33	0	7 432	0	0	0	0	0	0	0	0	0	0
		Industry, including energy	8	0	81 560	376	704	507	121	83 268	0	0	0	0	0	0	0	0	0	0
		Construction	9	0	72	27 507	127	234	0	27 940	0	0	0	0	0	0	0	0	0	0
		Wholesale and retail trade…	10	0	1 392	184	58 303	2 479	0	62 357	0	0	0	0	0	0	0	0	0	0
		Financial, real-estate, renting ..	11	1	106	73	319	44 556	2	45 057	0	0	0	0	0	0	0	0	0	0
		Other service activities	12	5	211	333	296	2 079	47 698	50 622	0	0	0	0	0	0	0	0	0	0
		Total		6 955	83 747	28 489	59 776	49 888	47 821	276 675	0	0	0	0	0	0	0	0	0	0
	FACTORS	Labour - employees	13	0	0	0	0	0	0	0	826	13 022	6 029	18 325	8 830	28 327	75 358	0	0	0
		Own assets	14	0	0	0	0	0	0	0	3 482	9 900	2 840	13 271	18 352	6 422	54 267	0	0	0
		Total		0	0	0	0	0	0	0	4 308	22 922	8 869	31 596	27 182	34 749	129 626	0	0	0
INSTITUTIONS	CURRENT ACCOUNT	Households	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	75 198	31 058	106 255
		Enterprises (nonfinancial corporations)	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15 009	15 009
		Financial corporations	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4 638	4 638
		Government	18	- 216	13 547	786	2 340	3 596	846	20 899	- 450	- 153	- 50	- 239	252	- 214	- 854	0	- 707	- 707
		Non Profit Institutions Serving Households (NPISH)	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	984	984
		Total		- 216	13 547	786	2 340	3 596	846	20 899	- 450	- 153	- 50	- 239	252	- 214	- 854	75 198	50 981	126 179
	CAPITAL ACCOUNT	Households	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Enterprises (nonfinancial corporations)	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Financial corporations	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Government	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Non Profit Institutions Serving Households (NPISH)	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Total		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	FINANCIAL ACCOUNT		25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REST OF THE WORLD			26	2 220	47 255	- 5	1 606	2 132	391	53 599	- 215	- 73	- 24	- 114	120	- 102	- 409	350	10 919	11 269
TOTAL				11 174	167 468	29 271	38 583	55 615	49 062	351 173	7 432	83 268	27 940	62 357	45 057	50 622	276 675	75 547	61 900	137 447

Sources: Sources: Statistics Portugal (*INE*); Portuguese Central Bank (*Banco de Portugal*) – Portuguese National and Financial Accounts for 2005.

Appendix/Table A.2. SAM for Portugal in 2005 (in millions of euros) (continued)

Outlays (expenditures) / Incomes (receipts)			INSTITUTIONS														
			CURRENT ACCOUNT						CAPITAL ACCOUNT						FINANCIAL ACCOUNT	REST OF THE WORLD	TOTAL
		Households	Enterprises (nonfinancial corporations)	Financial corporations	Government	Non Profit Institutions Serving Households (NPISH)	Total	Households	Enterprises (nonfinancial corporations)	Financial corporations	Government	Non Profit Institutions Serving Households (NPISH)	Total			
		15	16	17	18	19		20	21	22	23	24		25	26	
PRODUCTION — PRODUCTS Products of agriculture …	1	3 670	0	0	0	0	3 670	215	44	0	0	0	259	0	579	11 174
Products from mining and …	2	47 418	0	0	1 550	48	49 016	786	8 511	273	861	305	10 735	0	30 445	167 468
Construction work	3	116	0	0	0	0	116	5 827	7 313	663	3 448	241	17 491	0	0	29 271
Wholesale and retail trade…	4	13 213	0	0	143	0	13 356	109	239	6	5	5	363	0	9 820	38 583
Financial intermediation…	5	15 675	0	0	151	150	15 976	1 307	2 888	73	59	56	4 383	0	1 542	55 615
Other services	6	11 565	0	0	30 130	2 814	44 509	123	227	21	7	39	417	0	181	49 062
Total		91 658	0	0	31 974	3 012	126 644	8 366	19 221	1 037	4 380	645	33 649	0	42 567	351 173
ACTIVITIES Agriculture, hunting and forestry…	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7 432
Industry, including energy	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	83 268
Construction	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27 940
Wholesale and retail trade…	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	62 357
Financial, real-estate, renting ..	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45 057
Other service activities	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50 622
Total		0	0	0	0	0	0	0	0	0	0	0	0	0	0	276 675
FACTORS Labour - employees	13	0	0	0	0	0	0	0	0	0	0	0	0	0	189	75 547
Own assets	14	0	0	0	0	0	0	0	0	0	0	0	0	0	7 633	61 900
Total		0	0	0	0	0	0	0	0	0	0	0	0	0	7 822	137 447
INSTITUTIONS — CURRENT ACCOUNT Households	15	856	1 753	3 466	22 781	20	28 875	0	0	0	0	0	0	0	3 413	138 544
Enterprises (nonfinancial corporations)	16	1 745	119	1 013	5	0	2 883	0	0	0	0	0	0	0	84	17 975
Financial corporations	17	3 383	1 045	102	20	26	4 577	0	0	0	0	0	0	0	62	9 277
Government	18	27 258	4 416	429	7 944	37	40 084	0	0	0	0	0	0	0	1 044	60 466
Non Profit Institutions Serving Households (NPISH)	19	946	550	44	873	31	2 443	0	0	0	0	0	0	0	0	3 426
Total		34 188	7 882	5 054	31 622	114	78 861	0	0	0	0	0	0	0	4 603	229 688
CAPITAL ACCOUNT Households	20	9 544	0	0	0	0	9 544	0	0	1 929	246	0	2 174	-4 725	152	7 145
Enterprises (nonfinancial corporations)	21	0	9 884	0	0	0	9 884	0	0	0	1 361	0	1 361	8 758	630	20 633
Financial corporations	22	0	0	4 072	0	0	4 072	0	75	2 195	5	0	2 275	- 681	4	5 670
Government	23	0	0	0	-4 775	0	-4 775	122	34	94	1 866	7	2 124	9 023	1 466	7 838
Non Profit Institutions Serving Households (NPISH)	24	0	0	0	0	300	300	0	0	57	183	0	240	- 41	152	652
Total		9 544	9 884	4 072	-4 775	300	19 025	122	109	4 275	3 661	7	8 174	12 335	2 404	41 937
FINANCIAL ACCOUNT	25	0	0	0	0	0	0	0	0	0	0	0	0	37 825	31 113	68 938
REST OF THE WORLD	26	3 154	209	151	1 644	0	5 158	-1 344	1 303	358	- 203	0	114	18 779		88 509
TOTAL		138 544	17 975	9 277	60 466	3 426	229 688	7 145	20 633	5 670	7 838	652	41 937	68 938	88 509	

Sources: Sources: Statistics Portugal (*INE*); Portuguese Central Bank (*Banco de Portugal*) – Portuguese National and Financial Accounts for 2005.

Appendix/Table A.3. Integrated Economic Accounts for Portugal in 2005 (in millions of euros)

Current accounts
Uses

Accounts	Total	Goods and Services Account (Resources) S.2	Rest of the World Account 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 other flows, stocks and balancing items
I. Production / external account of goods and services	55 774	55 774								P.7	Imports of goods and services
	42 567		42 567							P.6	Exports of goods and services
	276 675	276 675								P.1	Output of goods and services
	148 312			148 312	3 708	19 847	6 316	4 635	113 807	P.2	Intermediate consumption
	20 761	20 761								D.21-D.31	Net taxes on products
	149 123			149 123	2 573	26 661	23 962	8 221	66 946	B.1g/B.1*g	Gross added value/gross domestic product
	24 753			24 753	556	6 807	2 622	588	14 181	K.1	Consumption of fixed capital
	124 370			124 370	20 761	2 017	19 854	21 341	7 633	B.1n/B.1*n	Value added, net/Net domestic product
	13 207		13 207							B.11	External balance of goods and services
II.1.1. Generation of income account	75 547		189	75 358	2 086	4 297	21 541	3 642	43 792	D.1	Compensation of employees
	25 995			25 995	49	1 419	131	40	1 755	D.2-D.3	Net taxes on production and imports
	22 602			22 602						D.21-D.31	Net taxes on products
	3 394			3 394	49	1 419	131	40	1 755	D.29-D.39	Net taxes on production
	31 678			31 678	529		2 552	4 583	24 014	B.2g	Gross operating surplus
	22 589			22 589		22 589				B.3g	Gross mixed income
	13 732			13 732	- 27		- 70	3 995	9 833	B.2n	Net operating surplus
	15 783			15 783		15 783				B.3n	Net mixed income
II.1.2. Allocation of primary income account	40 424		7 633	32 791	128	2 239	4 119	12 541	13 764	D.4	Property income
										P.119	Adjustment to the FISIM (Financial Intermediation Services Indirectly Measured)
	146 224			146 224	984	106 255	19 339	4 638	15 009	B.5g	Gross national income/ Gross balance of primary incomes
	121 470			121 470	428	99 448	16 717	4 050	828	B.5n	Net national income/ Net balance of primary incomes
II.2. Secondary distribution income account	12 594		29	12 566	2	8 275		391	3 897	D.5	Current taxes on income, wealth, etc
	23 154		98	23 056		23 056				D.61	Social contributions
	26 040		34	26 005	20	51	22 250	1 932	1 753	D.62	Social benefits other than social transfers in kind
	23 962		4 442	19 520	92	3 924	11 017	2 047	2 441	D.7	Other current transfers
	147 706			147 706	3 312	102 404	27 199	4 907	9 884	B.6g	Gross disposable income
	122 953			122 953	2 756	95 597	24 577	4 319	- 4 297	B.6n	Net disposable income
II.3. Redistribution of income in kind account	22 133			22 133	3 012		19 121			D.63	Social transfers in kind
	147 706			147 706	300	124 537	8 078	4 907	9 884	B.7g	Gross adjusted disposable income
	122 953			122 953	- 256	117 730	5 456	4 319	- 4 297	B.7n	Net adjusted disposable income
II.4. Use of income account	147 706			147 706	3 312	102 404	27 199	4 907	9 884	B.6g	Gross disposable income
	122 953			122 953	2 756	95 597	24 577	4 319	- 4 297	B.6n	Net disposable income
	128 681			128 681		115 828	12 853			P.4	Actual Final Consumption
	128 681			128 681	3 012	93 695	31 974			P.3	Final consumption expenditure
	835			835				835		D.8	Adjustment for the change in the net equity of households in pension funds reserves
	19 025			19 025	300	9 544	- 4 775	4 072	9 884	B.8g	Gross saving
	- 5 728			- 5 728	- 256	2 737	- 7 397	3 484	- 4 297	B.8n	Net saving
	14 624	14 624								B.12	Current external balance

Accumulation accounts
Changes in Assets

	Total	S.2	S.1	Total of the Economy	NPISHs S.15	Households S.14	General Government S.13	Financial Corporations S.12	Non-Financial Corporations S.11		Transactions
III.1.1. Change in net worth due to saving and capital transfers account										B.8g	Gross saving
										B.8n	Net saving
										B.12	Current external balance
										D.9	Capital transfers, receivable
										D.9	Capital transfers, payable (-)
	8 896		12 383	- 3 487	130	4 848	- 7 500	1 488	- 2 452	B.10.1	Changes in net worth due to saving and capital transfers
III.1.2 Acquisitions of non-financial assets account	33 098			33 098	569	8 252	4 374	1 002	18 901	P.51	Gross fixed capital formation
	- 24 753			- 24 753	- 556	- 6 807	- 2 622	- 588	- 14 181	K.1	Consumption of fixed capital (-)
	382			382		63			318	P.52	Changes in inventories
	170			170	77	51	6	35	1	P.53	Acquisitions less disposals of valuables
			49	- 49		- 1 437	- 236	358	1 266	K.2	Acquisitions less disposals of non-produced non-financial assets
				12 335	- 12 335	41	4 725	- 9 023	681	- 8 758	B.9	Net lending (+) /borrowing (-)

		S.2	S.1	S.15 + S.14		S.13	S.12	S.11		
III.2 Financial account	87 810	31 113	56 697	15 454		579	34 233	6 431		Net acquisition of financial assets\
										Net incurrence of liabilities
		507	- 507				- 507		F.1	Monetary gold and SDRs
	20 302	9 172	11 130	991		880	5 039	4 220	F.2	Currency and deposits
	25 430	10 148	15 282	88		520	15 768	- 1 094	F.3	Securities other than shares
	18 095	3 859	14 236	4		281	12 267	1 684	F.4	Loans
	17 890	7 427	10 463	6 589		- 523	2 948	1 449	F.5	Shares and other equity
	8 132	11	8 121	7 842		2	82	195	F.6	Insurance technical reserves
	- 2 039	- 11	- 2 028	- 60		- 581	- 1 364	- 23	F.7	Other accounts receivable/payable
									B.9 F	Net lending (+) /borrowing (-)
										Statistical discrepancy

Sources: Statistics Portugal (*INE*); Portuguese Central Bank (*Banco de Portugal*)

Appendix/Table A.3. Integrated Economic Accounts for Portugal in 2005 (in millions of euros) (continued)

										Current accounts	
										Resources	
		S.11	S.12	S.13	S.14	S.15	S.1	S.2	Goods and Services Account (Uses)		Accounts
Code	Transactions and other flows, stocks and balancing items	Non-Financial Corporations	Financial Corporations	General Government	Households	NPISHs	Total of the Economy	Rest of the World Account		Total	
P.7	Imports of goods and services							55 774		55 774	I. Production / external account of goods and services
P.6	Exports of goods and services								42 567	42 567	
P.1	Output of goods and services	180 752	12 856	30 278	46 508	6 282	276 675			276 675	
P.2	Intermediate consumption								148 312	148 312	
D.21-D.31	Net taxes on products						20 761			20 761	
B.1g/B.1*g	Gross added value/gross domestic product	66 946	8 221	23 962	26 661	2 573	149 123			149 123	II.1.1. Generation of income account
K.1	Consumption of fixed capital										
B.1n/B.1*n	Value added, net/Net domestic product	7 633	21 341	19 854	2 017	20 761	124 370			124 370	
B.11	External balance of goods and services							13 207		13 207	
D.1	Compensation of employees				75 198		75 198	350		75 547	II.1.2. Allocation of primary income account
D.2-D.3	Net taxes on production and imports			24 723			24 723	1 273		25 995	
D.21-D.31	Net taxes on products			21 737			21 737	864		22 602	
D.29-D.39	Net taxes on production			2 985			2 985	409		3 394	
B.2g	**Gross operating surplus**	24 014	4 583	2 552		529	31 678			31 678	
B.3g	**Gross mixed income**				22 589		22 589			22 589	
B.2n	**Net operating surplus**	9 833	3 995	- 70		- 27	13 732			13 732	
B.3n	**Net mixed income**				15 783		15 783			15 783	
D.4	Property income	4 759	12 595	861	10 707	582	29 505	10 919		40 424	
P.119	Adjustment to the FISIM (Financial Intermediation Services Indirectly Measured)		- 3 688								
B.5g	**Gross national income/ Gross balance of primary incomes**	15 009	4 638	19 339	106 255	984	146 224			146 224	II.2. Secondary distribution income account
B.5n	**Net national income/ Net balance of primary incomes**	828	4 050	16 717	99 448	428	121 470			121 470	
D.5	Current taxes on income, wealth, etc			12 574			12 574	20		12 594	
D.61	Social contributions	1 753	2 589	18 697	51	20	23 109	45		23 154	
D.62	Social benefits other than social transfers in kind				25 910		25 910	129		26 040	
D.7	Other current transfers	1 214	2 050	9 857	5 492	2 423	21 036	2 926		23 962	
B.6g	**Gross disposable income**	9 884	4 907	27 199	102 404	3 312	147 706			147 706	II.3. Redistribution of income in kind account
B.6n	**Net disposable income**	- 4 297	4 319	24 577	95 597	2 756	122 953			122 953	
D.63	Social transfers in kind				22 133		22 133			22 133	
B.7g	**Gross adjusted disposable income**	9 884	4 907	8 078	124 537	300	147 706			147 706	II.4. Use of income account
B.7n	**Net adjusted disposable income**	- 4 297	4 319	5 456	117 730	- 256	122 953			122 953	
B.6g	**Gross disposable income**	9 884	4 907	27 199	102 404	3 312	147 706			147 706	
B.6n	**Net disposable income**	- 4 297	4 319	24 577	95 597	2 756	122 953			122 953	
P.4	Actual Final Consumption								128 681	128 681	
P.3	Final consumption expenditure								128 681	128 681	
D.8	Adjustment for the change in the net equity of households in pension funds reserves				835		835			835	
B.8g	**Gross saving**										
B.8n	**Net saving**										
B.12	**Current external balance**										
										Accumulation accounts	
										Changes in liabilities and net worth	
B.8g	**Gross saving**	9 884	4 072	- 4 775	9 544	300	19 025			19 025	III.1.1. Change in net worth due to saving and capital transfers account
B.8n	**Net saving**	- 4 297	3 484	- 7 397	2 737	- 256	- 5 728			- 5 728	
B.12	**Current external balance**							14 624		14 624	
D.9	Capital transfers, receivable	1 991	2 279	3 589	2 326	392	10 578	162		10 740	
D.9	Capital transfers, payable (-)	- 146	- 4 275	- 3 693	- 216	- 7	- 8 336	- 2 404		- 10 740	
B.10.1	**Changes in net worth due to saving and capital transfers**	- 2 452	1 488	- 7 500	4 848	130	- 3 487	12 383		8 896	III.1.2 Acquisitions of non-financial assets account
P.51	Gross fixed capital formation								33 098	33 098	
K.1	Consumption of fixed capital (-)										
P.52	Changes in inventories								382	382	
P.53	Acquisitions less disposals of valuables								170	170	
K.2	Acquisitions less disposals of non-produced non-financial assets										
B.9	**Net lending (+) /borrowing (-)**										
		S.11	S.12	S.13	S.14 + S.15		S.1	S.2			
	Net acquisition of financial assets\										III.2 Financial account
	Net incurrence of liabilities	14 850	33 798	9 604	10 686		68 938	18 872		87 810	
F.1	Monetary gold and SDRs										
F.2	Currency and deposits		16 393	538			16 931	3 371		20 302	
F.3	Securities other than shares	5 328	- 4 490	10 313	- 65		11 086	14 344		25 430	
F.4	Loans	5 731	3 285	- 174	11 627		20 469	- 2 373		18 096	
F.5	Shares and other equity	6 178	9 762				15 940	1 949		17 889	
F.6	Insurance technical reserves	- 101	8 151				8 050	82		8 132	
F.7	Other accounts receivable/payable	- 2 286	697	- 1 073	- 876		- 3 538	1 499		- 2 039	
B.9 F	**Net lending (+) /borrowing (-)**	- 8 419	435	- 9 025	4 768		- 12 241	12 241			
	Statistical discrepancy	339	- 246	- 2	2		94	- 94			

Sources: Statistics Portugal (*INE*); Portuguese Central Bank (*Banco de Portugal*)

Appendix A.4. Nomenclatures and correspondences

Table A.4.1. Production Sectors/Sectors of Activity/Industries

CGE Database/SAM		A60[7]		A17[7]	
Code	Description	Code	Description	Code	Description
secE1	Agriculture, hunting and forestry, logging	01	Agriculture, hunting and related activities	A	Agriculture, hunting and forestry
		02	Forestry, logging and related service activities		
secE2	Fishing	05	Fishing, operation of fish hatcheries and fish farms; service activities incidental to fishing	B	Fishing
secE3	Mining and quarrying	10	Mining of coal and lignite; extraction of peat	C	Mining and quarrying
		11	Extraction of crude petroleum and natural gas; service activities incidental to oil and gas extraction excluding surveying		
		12	Mining of uranium and thorium ores		
		13	Mining of metal ores		
		14	Other mining and quarrying		
secE4	Production of meat and meat products	15	Manufacture of food products and beverages	D	Manufacturing
secE5	Processing fish and fish products				
secE6	Manufacture of dairy products				
secE7	Prepared animal feeds				
secE8	Beverages & tobacco products	16	Manufacture of tobacco products		
secE9	Fruits, vegetables, animal oils, grain mill, starches				
secE10	Textiles and leather	17	Manufacture of textiles		
		18	Manufacture of wearing apparel; dressing and dyeing of fur		
		19	Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear		
secE11	Wood and of products of wood and cork	20	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials		
secE12	Pulp, paper products; publishing and printing	21	Manufacture of pulp, paper and paper products		
		22	Publishing, printing and reproduction of recorded media		
secE13	Coke, refined petroleum products and nuclear fuel	23	Manufacture of coke, refined petroleum products and nuclear fuel		
secE14	Chemicals and chemical products	24	Manufacture of chemicals and chemical products		
secE15	Rubber and plastic products	25	Manufacture of rubber and plastic products		
secE16	Other non-metallic mineral products	26	Manufacture of other non-metallic mineral products		

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[7] In accordance with the "New Statistical Nomenclature of the Economic Activities in the European Community (NACE)" Rev. 1.

CGE Database/SAM		A60[7]		A17[7]	
Code	Description	Code	Description	Code	Description
secE17	Basic metals and fabricated metal products	27	Manufacture of basic metals		
		28	Manufacture of fabricated metal products, except machinery and equipment		
secE18	Machinery and equipment n.e.c.	29	Manufacture of machinery and equipment n.e.c.		
		30	Manufacture of office machinery and computers		
secE19	Electrical and optical equipment	31	Manufacture of electrical machinery and apparatus n.e.c.		
		32	Manufacture of radio, television and communication equipment and apparatus		
		33	Manufacture of medical, precision and optical instruments, watches and clocks		
secE20	Transport equipment	34	Manufacture of motor vehicles, trailers and semi-trailers		
		35	Manufacture of other transport equipment		
secE21	Manufacturing n.e.c.	36	Manufacture of furniture; manufacturing n.e.c.		
		37	Recycling		
secE22	Electricity, gas, steam and hot water supply	40	Electricity, gas, steam and hot water supply	E	Electricity, gas, and water supply
secE23	Collection, purification and distribution of water	41	Collection, purification and distribution of water		
secE24	Construction	45	Construction	F	Construction
secE25	Sale, maintenance, repair of motor vehicles and motorcycles	50	Sale, maintenance and repair of motor vehicles and motorcycles; retail sale of automotive fuel	G	Whole sale and retail trade; repair of motor vehicles, motorcycles and personal and household goods
secE26	Wholesale trade and commission trade, except of motor	51	Wholesale trade and commission trade, except of motor vehicles and motorcycles		
secE27	Retail trade, except of motor vehicles and motorcycles	52	Retail trade services, except of motor vehicles and motorcycles; repair services of personal and household goods		
secE28	Hotels and restaurants	55	Hotel and restaurant services	H	Hotels and restaurants
secE29	Land transport; transport via pipelines	60	Land transport; transport via pipeline services	I	Transport, storage and communication
secE30	Water transport	61	Water transport services		
secE31	Air transport	62	Air transport services		
secE32	Supporting transport activities; activities of travel agencies	63	Supporting and auxiliary transport services; travel agency services		
secE33	Post and telecommunications	64	Post and telecommunication services		
secE34	Financial intermediation, excl. insurance and pension funding	65	Financial intermediation services, except insurance and pension funding services	J	Financial intermediation
secE35	Insurance and pension funding, except compulsory soc. sec.	66	Insurance and pension funding services, except compulsory social security services		
secE36	Activities auxiliary to financial intermediation	67	Services auxiliary to financial intermediation		
secE37	Real estate activities	70	Real estate services	K	Real estate, renting

CGE Database/SAM		A60[7]		A17[7]	
Code	Description	Code	Description	Code	Description
secE38	Renting of machinery and equipment without operator	71	Renting of machinery and equipment without operator and of personal and household goods		and business activities
secE39	Computer and related activities, Research and development	72	Computer and related services		
		73	Research and development services		
secE40	Other business activities	74	Other business services		
secE41	Public administration and defence; compulsory social security	75	Public administration and defence services; compulsory social security services	L	Public administration and defence; compulsory social security
secE42	Education	80	Education services	M	Education
secE43	Health and social work	85	Health and social work services	N	Health and social work
secE44	Other community, social and personal service activities	90	Sewage and refuse disposal services, sanitation and similar services	O	Other community, social and personal service activities
		91	Membership organisation services n.e.c.		
		92	Recreational, cultural and sporting services		
		93	Other services		
secE45	Activities of households as employers of domestic staff	95	Private households with employed persons	P	Private households with employed persons

Table A.4.2. Commodities/Products

CGE Database/SAM		P60[8]	
Code	Description	Code	Description
comE1	Products of agriculture, hunting and forestry, logging	01	Products of agriculture, hunting and related activities
		02	Products of forestry, logging and related service activities
comE2	Fish and other fishing products	05	Fish and other fishing products, services incidental to fishing
comE3	Mining and quarrying products	10	Coal and lignite; peat
		11	Crude petroleum and natural gas; services incidental to oil and gas extraction excluding surveying
		12	Uranium and thorium ores
		13	Metal ores
		14	Other mining and quarrying products
comE4	Meat and meat products	15	Food products and beverages
comE5	Processing fish and fish products		
comE6	Manufacture of dairy products		
comE7	Prepared animal feeds		
comE8	Beverages & tobacco products	16	Tobacco products
comE9	Fruits, vegetables, animal oils, grain mill, starches		
comE10	Textiles and leather	17	Textiles
		18	Wearing apparel; furs
		19	Leather and leather products

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[8] In accordance with the "Classification of Products by Activity (CPA)" – principal products of activities according to NACE Rev.1.

CGE Database/SAM		P60[8]	
Code	Description	Code	Description
comE11	Wood and of products of wood and cork	20	Wood and products of wood and cork (except furniture), articles of straw and plaiting materials
comE12	Pulp, paper products; publishing and printing	21	Pulp, paper and paper products
		22	Printed matter and recorded media
comE13	Coke, refined petroleum products and nuclear fuel	23	Coke, refined petroleum products and nuclear fuel
comE14	Chemicals and chemical products	24	Chemicals, chemical products and man-made fibres
comE15	Rubber and plastic products	25	Rubber and plastic products
comE16	Other non-metallic mineral products	26	Other non-metallic mineral products
comE17	Basic metals and fabricated metal products	27	Basic metals
		28	Fabricated metal products, except machinery and equipment
comE18	Machinery and equipment n.e.c.	29	Machinery and equipment n.e.c.
		30	Office machinery and computers
comE19	Electrical and optical equipment	31	Electrical machinery and apparatus n.e.c
		32	Radio, television and communication equipment and apparatus
		33	Medical, precision and optical instruments, watches and clocks
comE20	Transport equipment	34	Motor vehicles, trailers and semi-trailers
		35	Other transport equipment
comE21	Manufactured goods n.e.c.	36	Furniture; other manufactured goods n.e.c.
		37	Recovered secondary raw materials
comE22	Electrical energy, gas, steam and hot water	40	Electrical energy, gas, steam and hot water
comE23	Collected and purified water, distribution services of water	41	Collected and purified water, distribution services of water
comE24	Construction	45	Construction work
comE25	Sale, maintenance, repair of motor vehicles and motorcycles	50	Trade, maintenance and repair services of motor vehicles and motorcycles; retail trade services of automotive fuel
comE26	Wholesale trade and commission trade, except of motor	51	Wholesale trade and commission trade, except of motor vehicles and motorcycles
comE27	Retail trade, except of motor vehicles and motorcycles	52	Retail trade services, except of motor vehicles and motorcycles; repair services of personal and household goods
comE28	Hotels and restaurants	55	Hotel and restaurant
comE29	Land transport; transport via pipelines	60	Land transport; transport via pipeline
comE30	Water transport	61	Water transport
comE31	Air transport	62	Air transport
comE32	Supporting transport activities; activities of travel agencies	63	Supporting and auxiliary transport services; travel agency
comE33	Post and telecommunications	64	Post and telecommunication
comE34	Financial intermediation, excl. insurance and pension funding	65	Financial intermediation, except insurance and pension funding services
comE35	Insurance and pension funding, except compulsory soc. sec.	66	Insurance and pension funding, except compulsory social security
comE36	Activities auxiliary to financial intermediation	67	Activities auxiliary to financial intermediation
comE37	Real estate activities	70	Real estate activities
comE38	Renting of machinery and equipment without operator	71	Renting of machinery and equipment without operator and of personal and household goods
comE39	Computer and related activities, Research and development	72	Computer and related activities
		73	Research and development
comE40	Other business activities	74	Other business activities
comE41	Public administration and defence; compulsory social security	75	Public administration and defence; compulsory social security

CGE Database/SAM		P60[8]	
Code	Description	Code	Description
comE42	Education	80	Education
comE43	Health and social work	85	Health and social work
comE44	Other community, social and personal service activities	90	Sewage and refuse disposal, sanitation and similar activities
		91	Activities membership organisation services n.e.c.
		92	Recreational, cultural and sporting activities
		93	Other services activities
comE45	Activities of households as employers of domestic staff	95	Private households with employed persons

Table A.4.3. Institutions/Institutional Sectors

CGE Database/SAM		ESA 95	
Description		Code	Description
Firms		S.11	Non-financial corporations
		S.12	Financial corporations
Households [(c)]		S.14	Households
Government		S.13	General government
		S.15	Non-profit institutions serving households [(a)]
Rest of the World	Total	S.2	Rest of the world
	EU (European Union)	S.21	European Union
	ROW (Rest of the world)	S.22	Third countries and international organisations
	Mainland [(b)]	---	---
	USA (United States of America) [(b)]	---	---

[(a)] In SAM Azores 2001, the Non-Profit Institutions Serving Households (NPISH) were considered together with Households in some transactions, such as Final Consumption. However. in the SAMs for 2005 (the Azores and Portugal), they were considered with the Government, which seems to make more sense, since households are disaggregated by level of income.

[(b)] Only for SAM Azores 2001 and 2005.

[(c)] Groups of Households, by income bracket:

Q1 – up to 5 200 €;

Q2 – from 5 200€ to 10 400€;

Q3 – from 10 400€ to 15 600€;

Q4 – from 15 600€ to 20 800€;

Q5 – from 20 800€ to 31 200€;

Q6 – more than 31 200 €.

Source of information: Household Budget Survey - *Inquérito às despesas das famílias - 2005 / 2006.*