A quantitative approach to the effects of social policy measures.

An application to Portugal, using Social Accounting Matrices.

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Abstract

The impacts of policy measures on transfers between government and households will be quantified using Social Accounting Matrices (SAMs).

The System of National Accounts (SNA) will be the main source used for the construction of the numerical version of these matrices, which will then form the basis for two algebraic versions. One version will consist of accounting multipliers, and s*tructural path analysis* will also be used for its decomposition. The other version will be a so-called SAM-based linear model, in which each cell will be defined with a linear equation or system of equations, whose components will be all the known and quantified transactions of the SNA, using the parameters deduced from the numerical SAM that served as the basis for this model.

Macroeconomic aggregates and balances, as well as structural indicators of the distribution and use of income, will be calculated from numerical and algebraic versions of the SAM. These will make it possible to quantify and compare the effects of social policy measures and to evaluate their differences, in order to define the path for future research work on the SAM-based linear model.

Key words: Social Accounting Matrix; SAM-based Modelling; Macroeconomic Modelling; Policy Analysis; Structural Path Analysis

JEL Codes: E61; E10; D57.

Abbreviations[1]

CPA	– Classification of Products by Activity
ESA 95	– European System of National and Regional Accounts in the European Community of 1995 (Eurostat, 1996)
GDP	– Gross Domestic Product
INE	– *Instituto Nacional de Estatística* (Statistics Portugal)
ISCED	– International Standard Classification of Education
ISWGNA	– Inter-Secretariat Working Group, published by the United Nations Statistical Office
NACE (Rev.1)	– New Statistical Nomenclature of the Economic Activities in the European Community
NPISHs	– Non-Profit Institutions Serving Households
SAM	– Social Accounting Matrix
SNA	– System of National Accounts
SNA 93	– System of National Accounts of 1993 (ISWG, 1993)

[1] Besides those listed in Appendix A.2.3.

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1. Introduction

This paper is intended to be yet one more (small) step forward in the research that its author has been undertaking, for several years, into the SAM in general and now, in particular, into SAM-based modelling. Thus, on the one hand, it uses the work published in Santos (2008, 2009, 2009a) and the papers prepared for presentation by the author at two conferences in 2009[2] and, on the other hand, it updates almost all of that work to 2005.

From the author's point of view, the SAM is a powerful working instrument for socio-(macro)economic planning, since with its underlying methodology it is possible to arrive at perfectly harmonized models and databases that contemplate important aspects of the economic and social sides of the real world. Further research is planned to improve this part of the work and to study other aspects of these (economic and social) sides, as well as to consider yet further issues (such as the environment, for instance).

In the Preface to the study by F. Lequiller and D. Blades, entitled *Understanding National Accounts*, E. Giovannini says: "today's national accounts are the core of a modern system of economic statistics, and provide the conceptual and actual tool to bring to coherence hundreds of statistical sources available in developed countries"[3]. This is, in fact, a particular advantage enjoyed by developed countries and something which the developing countries are gradually working towards.

Thus, working with SAMs constructed from the national accounts can be a way of working with quantified reality in a more precise fashion. It is in this particular area that the author has been researching, constructing numerical (macro)SAMs from the national accounts (Section 2) and developing a SAM-based linear model. In the latter case, each cell is defined through a linear equation or system of equations, whose components are all the known and quantified transactions of the national accounts, using the parameters deduced from the numerical SAM that served as the basis for this model (Section 3.2). Such a model still has very restrictive assumptions, but its purpose is to better understand the results obtained and to progressively improve them. In order to achieve this aim, another SAM-based model will also be used – the

[2] "Constructing and Modelling SAMs from the SNA for the study of impacts of policy measures" (*57th Session of the International Statistical Institute*). *Durban* (*South Africa*): 16-22/8/2009.

"SAM-based modelling for policy and scenario analysis" (17th International Input-Output Conference**,** promoted by *IIOA* (International Input-Output Association) and the Department of Economics of the School of Economics, Business and Accountancy of the University of São Paulo). *São Paulo* (*Brazil*): 13-17/7/2009.

[3] Lequiller F., Blades D. (2006), *Understanding National Accounts*, Organisation for Economic Co-operation and Development (OECD), Paris (France) (p. 3).

one based on accounting multipliers[4] – whose additive decomposition will be analysed before the use of structural path analysis (Section 3.1) in order to provide a better understanding and interpretation of the differences between the results (Sections 3.3 and 4).

Therefore, in order to study the distributional effects of social policy measures, after analysing some of the structural indicators of the distribution and use of income and identifying the transfers between government and households that are to be worked upon as social policy measures (Section 2.1), identical experiments to those of the work referred to in the first paragraph will be performed using the two above-mentioned SAM-based models or SAM algebraic versions – multipliers and linear model. The analysis of the results and their comparison will be conducted using macroeconomic aggregates and balances (Section 4).

The concluding remarks (Section 5) will highlight not only the main methodological aspects of the work, but also the main results and their differences, in accordance with the alternative applications of the models to Portugal in two years separated by a gap of eleven years – 1995 and 2005. Finally, some guidelines will be provided suggesting a possible path for future research work on the SAM-based linear model.

2. The SAM numerical version

As mentioned above, the national accounts will be the source of information adopted in this work.

The System of National Accounts (SNA) that provided the information worked on for Portugal in 1995 and 2005 was the European System of National and Regional Accounts in the European Community of 1995 – ESA 95 (Eurostat, 1996), which is based on the 1993 version of the International United Nations System of National Accounts – SNA 93, prepared by the Inter-Secretariat Working Group and published by the United Nations Statistical Office (ISWGNA, 1993). Consequently, all the conventions and nomenclatures of that system have been adopted.

Considering the purpose of this paper and the information available for the years to be studied, the classification adopted for the accounts of both the numerical and, consequently, the algebraic versions of the SAM does not involve too high a level of disaggregation. Thus, in the case of the domestic economy, "Production" was divided into six groups of products and activities[5] and two

[4] Fixed-price multipliers could also be used. However, on the one hand, tests performed by the author have shown that the results from accounting multipliers have a greater degree of veracity (Santos, 2007), and on the other hand, we would also need numerical SAMs for successive years, which is not the case.

[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. See the description of each group in Appendix A.2.3. (sets).

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 the lack of information on 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 world".

The criterion used by the author for ordering the accounts was the one underlying the SAMs represented in Tables 1, 2, 4 and 5 – the first two presented in a basic and completely aggregate form and the others presented with the adopted disaggregation. Table 3 identifies the SNA transactions in the cells of the basic SAM, which will maintain their characteristics after the adopted disaggregation.

Table 1. Portuguese basic SAM (Social Accounting Matrix) for 1995 (in millions of euros)

Outlays (expenditures) / Incomes (receipts)		Production and Trade			(domestic) Institutions accounts			rest of the world	TOTAL
		products (p)	activities (*a*)	factors of prod. (f)	current (dic)	capital (dik)	financial (dif)	(rw)	
Production and Trade	products (p)	Trade and Transport Margins (0)	Intermediate Consumption (84 102)	0	Final Consumption (64 898)	Gross Capital Formation (19 623)	0	Exports (24 433)	Aggregate Demand (193 056)
	activities (*a*)	Production (154 394)	0	0	0	0	0	0	Production Value (154 394)
	factors of production (f)	0	Gross Added Value, at factor cost (70 725)	0	0	0	0	Compensation of Factors from the RW (3 243)	Aggregate Factors Income (73 968)
(domestic) Institutions accounts	current (dic)	Net taxes on products (10 283)	Net taxes on production (-346)	Gross National Income, at factor cost (70 542)	Current Transfers (42 145)	0	0	Current Transfers from the RW (3 960)	Aggregate Income (126 583)
	capital (dik)	0	0	0	Gross Saving (17 291)	Capital Transfers (4930)	Net borrowing (40)	Capital Transfers from the RW (2 320)	Investment Funds (24 582)
	financial (dif)	0	0	0	0	0	Financial Transactions (35 030)	Financial Transactions from the RW (9 257)	Total financial transactions (44 287)
rest of the world (rw)		Imports + net taxes on products (28 127 + 252)	Net taxes on production (-87)	Compensation of Factors to the RW (3 426)	Current Transfers to the RW (2 249)	Capital Transfers to the RW (29)	Financial Transactions to the RW (9 217)		Transactions Value to the RW (43 213)
TOTAL		Aggregate Supply (193 056)	Total Costs (154 394)	Aggregate Factors Income (73 968)	Aggregate Income (126 583)	Aggregate Investment (24 582)	Total financial transactions (44 287)	Transactions Value from the RW (43 213)	

Source: Statistics Portugal (*INE*) – Portuguese National Accounts for 1995.

Table 2. Portuguese basic SAM (Social Accounting Matrix) for 2005 (in millions of euros)

Outlays (expenditures) / Incomes (receipts)		Production and Trade			(domestic) Institutions accounts			rest of the world	TOTAL
		products (p)	activities (*a*)	factors of prod. (f)	current (dic)	capital (dik)	financial (dif)	(rw)	
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)	

Source: Statistics Portugal (*INE*) – Portuguese National Accounts for 2005.

Table 3. Identifying the National Accounts transactions in the cells of the basic SAM

SAM			National Accounts transactions	
row	column	Description(valuation[6])	(SNA) code	Description (valuation[6])
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--D39	other taxes on production *minus* other subsidies on production
rw	*a*	net taxes on production (paid to the RW)		
dic	f	gross national income	B5g	gross national income

[6] In the transactions involving products and/or activities, three levels of valuation can be distinguished: factor cost; basic/cif/fob prices and purchasers' or market prices.
The first of these levels is that of the compensation of the factors used in the production process of the domestic economy during the accounting period. In analysing those factors, one can distinguish between labour (employees and own-account workers and/or employers) and capital. In this case, compensation is respectively the compensation of employees (wages and salaries and employers' social contributions – transactions D11 and D12 of the National Accounts), mixed income (balance B3 of the National Accounts) and the gross operating surplus (balance B2 of the National Accounts).
At the second level, 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 (transaction D29 of the National Account), net of subsidies on production (transaction D39 of the National Accounts), 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.
The third level relates to products, either domestically produced or imported, that are transacted in the domestic market. Here, the basic/cif prices (referred to in the previous level) will be increased by adding to them the trade and transport margins and the taxes on products (transaction D21 of the National Accounts), net of subsidies (transaction D31 of the National Accounts).

SAM			National Accounts transactions	
row	column	Description(valuation[6])	(SNA) code	Description (valuation[6])
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 within domestic institutions	D9	capital transfers
dik	rw	capital transfers from the RW		
rw	dik	capital transfers to the RW		
dik	dif	- net borrowing[7]	B9	net borrowing
dif	dif	financial transactions within domestic institutions	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		

Source: Santos (2007a).

Note: See the correspondence identified between this Table and the values (in brackets) of the basic SAMs (Tables 1 and 2) in the "Portuguese Integrated Economic Accounts for Portugal in 1995 and 2005" – Tables A.3.1 and A.3.2. (Appendix A.3.)

Details on the sources of information and methodologies used in the construction of the SAM for 1995 (with a higher level of disaggregation) can be found in Santos, 2009: 179-184 – identical to those adopted in the SAM for 2005.

[7] 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 it is positive) or receives from the rest of the world (if it is 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 (SEC 95, Prg. 8.98).
In the SAM's capital account, it is considered as a component of investment funds, required/not required to cover 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, in the case of Portugal in 1995 and 2005, in which 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 were net lending, we would have financing capacity that would be absorbed by financial transactions, i.e. a resource of the financial account (row) and a use of the capital account (column).

Table 4. Portuguese SAM (Social Accounting Matrix) for 1995 (in millions of euros)

Outlays (expenditures) / Incomes (receipts)				PRODUCTION																
				PRODUCTS							ACTIVITIES							FACTORS		
				Products of agriculture, hunting, forestry …	Products from mining and quarrying …	Construction work	Wholesale and retail trade services…	Financial intermediation services, real estate…	Other services	Total	Agriculture, hunting and forestry …	Industry, including energy	Construction	Wholesale and retail trade …	Financial, real-estate, renting …	Other service activities	Total	Labour - employees	Own assets	Total
				1	2	3	4	5	6		7	8	9	10	11	12		13	14	
PRODUCTION	PRODUCTS	Products of agriculture …	1	0	0	0	0	0	0	0	606	4 640	0	369	0	78	5 693	0	0	0
		Products from mining and …	2	0	0	0	0	0	0	0	1 756	29 158	5 096	6 608	1 559	3 346	47 524	0	0	0
		Construction work	3	0	0	0	0	0	0	0	30	250	3 394	280	525	128	4 606	0	0	0
		Wholesale and retail trade…	4	1 236	13 886	0	-15 122	0	0	0	121	1 197	247	4 193	897	896	7 552	0	0	0
		Financial intermediation…	5	0	0	0	0	0	0	0	112	3 019	563	3 092	7 514	2 365	16 666	0	0	0
		Other services	6	0	0	0	0	0	0	0	26	315	38	347	713	623	2 061	0	0	0
		Total		1 236	13 886	0	-15 122	0	0	0	2 651	38 579	9 337	14 889	11 209	7 437	84 102	0	0	0
	ACTIVITIES	Agriculture, hunting and foresty...	7	6 060	379	2	0	19	0	6 460	0	0	0	0	0	0	0	0	0	0
		Industry, including energy	8	0	55 321	69	2	413	48	55 852	0	0	0	0	0	0	0	0	0	0
		Construction	9	0	12	14 191	0	0	0	14 204	0	0	0	0	0	0	0	0	0	0
		Wholesale and retail trade…	10	0	25	13	31 749	683	0	32 469	0	0	0	0	0	0	0	0	0	0
		Financial, real-estate, renting ..	11	0	5	14	0	20 967	0	20 987	0	0	0	0	0	0	0	0	0	0
		Other service activities	12	3	81	28	78	852	23 379	24 421	0	0	0	0	0	0	0	0	0	0
		Total		6 064	55 823	14 317	31 829	22 934	23 427	154 394	0	0	0	0	0	0	0	0	0	0
	FACTORS	Labour - employees	13	0	0	0	0	0	0	0	652	9 258	2 589	8 222	4 212	13 630	38 563	0	0	0
		Own assets	14	0	0	0	0	0	0	0	3 327	8 054	2 303	9 478	5 583	3 417	32 161	0	0	0
		Total		0	0	0	0	0	0	0	3 979	17 313	4 892	17 700	9 794	17 047	70 725	0	0	0
INSTITUTIONS	CURRENT ACCOUNT	Households	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38 620	20 994	59 614
		Enterprises (nonfinancial corporations)	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11 561	11 561
		Financial corporations	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1 787	1 787
		Government	18	- 1	7 108	405	1 046	1 347	378	10 283	- 135	- 31	- 20	- 96	- 13	- 50	- 346	0	-2 558	-2 558
		Non Profit Institutions Serving Households (NPISH)	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	137	137
		Total		- 1	7 108	405	1 046	1 347	378	10 283	- 135	- 31	- 20	- 96	- 13	- 50	- 346	38 620	31 922	70 542
	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	1 481	24 689	32	840	1 181	156	28 379	- 34	- 8	- 5	- 24	- 3	- 13	- 87	64	3 363	3 426
TOTAL				8 781	101 506	14 754	18 592	25 462	23 961	193 056	6 460	55 852	14 204	32 469	20 987	24 421	154 394	38 683	35 285	73 968

Source: Statistics Portugal (*INE*) – Portuguese National Accounts for 1995.

Table 4. Portuguese SAM (Social Accounting Matrix) for 1995 (in millions of euros) (continued)

Outlays (expenditures) / Incomes (receipts)				INSTITUTIONS														REST OF THE WORLD	TOTAL
				CURRENT ACCOUNT						CAPITAL ACCOUNT						FINANCIAL ACCOUNT			
				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	2 546	0	0	18	0	2 564	185	130	0	3	0	318	0	205	8 781
		Products from mining and ...	2	27 967	0	0	628	0	28 595	768	5 282	347	452	246	7 095	0	18 292	101 506
		Construction work	3	74	0	0	0	0	74	4 148	2 816	437	2 552	120	10 072	0	1	14 754
		Wholesale and retail trade...	4	5 467	0	0	37	0	5 504	91	194	19	1	0	305	0	5 231	18 592
		Financial intermediation...	5	6 388	0	0	77	43	6 508	505	1 049	110	8	0	1 671	0	617	25 462
		Other services	6	6 136	0	0	14 272	1 245	21 653	58	91	10	1	1	160	0	87	23 961
		Total		48 578	0	0	15 032	1 288	64 898	5 755	9 562	922	3 018	366	19 623	0	24 433	193 056
	ACTIVITIES	Agriculture, hunting and foresty...	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6 460
		Industry, including energy	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	55 852
		Construction	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14 204
		Wholesale and retail trade...	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32 469
		Financial, real-estate, renting ..	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20 987
		Other service activities	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24 421
		Total		0	0	0	0	0	0	0	0	0	0	0	0	0	0	154 394
	FACTORS	Labour - employees	13	0	0	0	0	0	0	0	0	0	0	0	0	0	120	38 683
		Own assets	14	0	0	0	0	0	0	0	0	0	0	0	0	0	3 123	35 285
		Total		0	0	0	0	0	0	0	0	0	0	0	0	0	3 243	73 968
INSTITUTIONS	CURRENT ACCOUNT	Households	15	470	1 349	2 051	9 623	13	13 506	0	0	0	0	0	0	0	3 293	76 413
		Enterprises (nonfinancial corporations)	16	1 339	58	363	0	0	1 759	0	0	0	0	0	0	0	23	13 344
		Financial corporations	17	2 125	329	29	4	14	2 501	0	0	0	0	0	0	0	35	4 323
		Government	18	13 883	2 108	229	6 866	7	23 092	0	0	0	0	0	0	0	609	31 081
		Non Profit Institutions Serving Households (NPISH)	19	323	50	34	878	0	1 286	0	0	0	0	0	0	0	0	1 423
		Total		18 141	3 894	2 705	17 371	35	42 145	0	0	0	0	0	0	0	3 960	126 583
	CAPITAL ACCOUNT	Households	20	7 952	0	0	0	0	7 952	0	0	812	206	0	1 018	-4 023	147	5 095
		Enterprises (nonfinancial corporations)	21	0	9 342	0	0	0	9 342	0	0	0	707	0	707	- 49	896	10 896
		Financial corporations	22	0	0	1 558	0	0	1 558	0	484	328	2	0	814	- 287	0	2 085
		Government	23	0	0	0	-1 661	0	-1 661	63	161	3	1 870	4	2 100	4 423	1 275	6 136
		Non Profit Institutions Serving Households (NPISH)	24	0	0	0	0	100	100	0	0	0	291	0	291	- 23	1	370
		Total		7 952	9 342	1 558	-1 661	100	17 291	63	645	1 143	3 075	4	4 930	40	2 320	24 582
	FINANCIAL ACCOUNT		25	0	0	0	0	0	0	0	0	0	0	0	0	35 030	9 257	44 287
REST OF THE WORLD			26	1 743	108	60	339	0	2 249	- 723	689	20	43	0	29	9 217	0	43 212
TOTAL				76 413	13 344	4 323	31 081	1 423	126 583	5 095	10 896	2 085	6 136	370	24 582	44 287	43 212	

Source: Statistics Portugal (*INE*) – Portuguese National Accounts for 1995.

Table 5. Portuguese SAM (Social Accounting Matrix) for 2005 (in millions of euros)

Outlays (expenditures) / Incomes (receipts)				PRODUCTION																	
				PRODUCTS							ACTIVITIES							FACTORS		
				Products of agriculture, hunting, forestry …	Products from mining and quarrying …	Construction work	Wholesale and retail trade services…	Financial intermediation services, real estate…	Other services	Total	Agriculture, hunting and forestry …	Industry, including energy	Construction	Wholesale and retail trade …	Financial, real-estate, renting …	Other service activities	Total	Labour - employees	Own assets	Total
				1	2	3	4	5	6		7	8	9	10	11	12		13	14	
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 foresty...	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

Source: Statistics Portugal (*INE*) – Portuguese National Accounts for 2005.

Table 5. Portuguese SAM (Social Accounting Matrix) for 2005 (in millions of euros) (continued)

Outlays (expenditures) / Incomes (receipts)				INSTITUTIONS													REST OF THE WORLD	TOTAL
				CURRENT ACCOUNT						CAPITAL ACCOUNT						FINANCIAL ACCOUNT		
				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 foresty...	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	

Source: Statistics Portugal (*INE*) – Portuguese National Accounts for 2005.

2.1. Structural indicators of the distribution and use of income; identifying social policy measures and the corresponding scenarios to be studied

Some indicators were calculated in order to be able to better identify the distributional effects of social policy measures. Thus, structural indicators of the functional and institutional distribution of generated income, as well as of the use of disposable income were calculated from the numerical version of the SAM for the two years under study – without any additional data[8].
Since additional data were worked on in a previous study for 1995 (Santos, 2009), some details will be used from this work in order to complement the following analysis.

Table 6. Distribution of the generated income, among factors of production and institutions, in the Portuguese SAM for 1995 and 2005 (in percentage terms).

	1995	2005
Factors of Production (generated income = gross added value, at factor cost)		
Labour (employees)	54.5	58.1
Own assets (employers and/or own-account workers; capital)	45.5	41.9
Total	100.0	100.0
Institutions (generated income = gross national income)		
Households	84.5	84.2
Non-financial corporations	16.4	11.9
Financial corporations	2.5	3.7
General government	-3.6	-0.6
Non-profit institutions serving households	0.2	0.8
Total	100.0	100.0

Sources: Tables 4 and 5.

In the functional distribution of the generated income, or the distribution of the gross added value among factors of production (see the first part of Table 6), a little more than half is compensation of employees, which in 2005 was 3.6 percentage points higher than in 1995.
In 1995, the level of education of employees was as follows[9]: 48.3%, lower; 33%, medium; 18.7%, higher. In turn, employers and/or own-account workers, whose compensation represented

[8] In the case of the SAM-based linear models, these indicators can also be calculated from the algebraic version, with the equations described in Appendix A.2.1.

[9] Description of the educational levels, in accordance with the ISCED (International Standard Classification of Education): lower - primary and lower secondary school; medium - upper and post-secondary school; higher - tertiary education. (Santos, 2009: 172).

7.5% of the 45.5% generated by own assets, were distributed according to the following levels of education: 55.7%, lower; 33.3%, medium; 11%, higher (Santos, 2009: 92-93).

In terms of institutional distribution (see the second part of Table 6), households have the most significant share of the generated income, which was slightly less in 2005. At a significant distance from households, non-financial corporations were in second position, although their importance declined from 1995 to 2005, in favour of all the others. Attention should be drawn to the position of the general government and the decrease in its negative value in 2005, meaning that its contribution to generated income increased significantly.

In 1995, considering their main source of income, within the 84.5% of the generated income of households, 62.1% came from employees (with wages and salaries as the main source of income) and 18.6% from employers and/or own-account workers (with mixed income including property income as the main source of income) (Santos, 2009: 96).

Each institution obtains its disposable income by excluding from gross national income the current transfers paid to other institutions and to the rest of the world, and by including the current transfers received from the other institutions and the rest of the world and, in the case of the government, net indirect taxes. This disposable income is then used in final consumption and saved, except in the case of non-financial and financial corporations, which do not have any final consumption.

Table 7. Distribution and use of disposable income, among institutions, in the Portuguese SAM for 1995 and 2005 (in percentage terms).

	Distribution of Disposable Income	Use of Disposable Income	
		Final Consumption	Saving
1995			
Households	69.3	86.3	13.7
Non-financial corporations	11.2	0.0	100.0
Financial corporations	1.9	0.0	100.0
General government	16.0	112.4	-12.4
Non-profit institutions serving households	1.7	92.8	7.2
Total	100.0	79.3	20.7
2005			
Households	69.9	90.8	9.2
Non-financial corporations	6.7	0.0	100.0
Financial corporations	2.8	0.0	100.0

	Distribution of Disposable Income	Use of Disposable Income	
		Final Consumption	Saving
General government	18.4	117.6	-17.6
Non-profit institutions serving households	2.2	90.9	9.1
Total	100.0	87.1	12.9

Sources: Tables 4 and 5.

As it would be of expecting, households have more than a half of the disposable income, followed by general government, with less than a quarter, having been both positions slightly reinforced in 2005 – the same happened with the other institutions, except the non-financial corporations.

As is to be expected, households have more than half of disposable income, followed by general government, with less than a quarter, with both positions having been slightly reinforced in 2005 – the same thing happened with other institutions, except non-financial corporations.

In 1995, within the 69.3% of the disposable income of households, the group whose main source of income was wages and salaries (employees) accounted for 41.9% (Santos, 2009: 98).

It should be noted that the final consumption considered here is the expenditure (transaction P3 of the national accounts) and not the "actual" final consumption (transaction P4 of the national accounts), i.e. the amount really spent by each institution, although a part of the final consumption of the general government and (all) that of the NPISH will take the form of social transfers in kind (transaction D63 of the national accounts) and will include the "actual" final consumption of households.

Final consumption expenditure absorbed the largest and an increasing (except for the NPISH) part of disposable income, in detriment to saving, whose share fell by 7.8 percentage points, from 1995 to 2005.

On the other hand, since, in this case, households represent everybody in Portugal, *per capita* disposable income and final consumption can be calculated by dividing the corresponding amounts for households by the resident population in each year.

Table 8. Per capita household disposable income and final consumption (euros per person), in Portugal in 1995 and 2005.

	Disposable income	Final Consumption	
		Expenditure	Actual
1995	5 761	4 837	5 850
2005	9 768	8 672	10 766

Source: Statistics Portugal (*INE*) – Portuguese National Accounts for 1995 and 2005; Statistical Yearbook for Portugal - 2008.

Thus, on average, Portuguese people saw their *per capita* disposable income and final consumption significantly increase over eleven years (disposable income: 69.6%; final consumption expenditure: 79.3%; actual final consumption: 84%). This also means a real improvement, since in 2005 the implicit price index in final consumption was 137.15 and in GDP 137.34 (1995 = 100)[10]. Information by groups of households would improve our knowledge about this evolution, although unfortunately this is not available.

Since the aim is to test methodologies designed to illustrate the distributional effects of social policy measures, which could have been the ones described above that were adopted for improving the financial situation of people – and therefore of households – we should consider flows in which both government and households intervene directly, for instance: direct taxes on income, paid by households to the government; and social benefits, paid by the government to households. Table 9 shows the absolute and relative positions of those flows in the years studied.

Table 9. Current taxes on income, wealth, etc., paid by households to the government, and social benefits other than social transfers in kind, paid by the government to households, in Portugal in 1995 and 2005.

	Current taxes on income, wealth, etc.[(a)]		Social benefits other than social transfers in kind[(c)]	
	millions of euros	rate of direct taxes [(b)] (%)	millions of euros	% of DI[(d)]
1995	4 932	6.5	9 485	16.4
2005	8 275	6.0	22 121	21.4

Source: Statistics Portugal (*INE*) – Portuguese National Accounts for 1995 and 2005.

Notes:

[(a)] Transaction D5 of the National Accounts.

[10] Values calculated by the author from the Portuguese National Accounts time series of final consumption and GDP at current and previous years' prices.

(b) Current taxes on income, wealth, etc. paid by households to the government, per unit of received aggregate income[11].

(c) Transaction D62 of the National Accounts[12].

(d) Social benefits other than social transfers in kind paid by the government to households, per unit of disposable income of households.

These figures reveal a tendency, on the one hand, towards a decrease in the rate of direct taxes and, on the other hand, towards an increase in the social benefits, which, in a first approach, goes some way towards achieving the above-mentioned aim of improving the financial situation of people.

On the other hand, Table 10 helps us to see the position of these flows in the budgets of these two institutional sectors.

[11] *ti* in the linear model – see Section 3.2.

[12] *D62P* in the linear model– see Section 3.2.

Table 10. The Government and Households Budgets in the Portuguese SAM for 1995 and 2005 (in millions of euros)

	Resources or Receipts (row)					Uses or Expenditure (column)					Balance			
		Government		Households			Government		Households		Government		Households	
		1995	2005	1995	2005		1995	2005	1995	2005	1995	2005	1995	2005
1.Current Account (a)		31 081	60 466	76 413	138 544		32 742	65 241	68 461	129 000	- 1661	- 4 775	7 952	9 544
	Gross National Income at factor cost	- 2558	- 707	59 614	106 255	Final Consumption	15 032	31 974	48 578	91 658				
	Net taxes on production	- 346	- 854	-	-	**Current transfers to domestic institutions** - households - government	17 371 9 623 6866	31 622 22 781 7 944	18 141 470 13 883	34 188 856 27 258				
	Net taxes on products	10 283	20 899	-	-	Current transfers to the RW	339	1 644	1 743	3 154				
	Current transfers from domestic institutions - households - government	23 092 13 883 6 866	40 084 27 258 7 944	13 506 470 9 623	28 875 856 22 781									
	Current transfers from the RW	609	1 044	3 293	3 413									
2. Capital Account		3 375	3 590	1 166	2 326		6 136	7 838	5 095	7 145	- 2 761	- 4 248	- 3929	- 4 818
	Capital transfers from domestic institutions	2 100	2 124	1 018	2 174	Gross Capital Formation	3 018	4 380	5 755	8 366				
	Capital transfers from the RW	1 275	1 466	147	152	Capital transfers to domestic institutions	3 075	3 661	63	122				
						Capital transfers to the RW	43	- 203	- 723	- 1344				
3 = 1 + 2 (b)		34 456	64 055	77 579	140 870		38 878	73 079	73 556	136 145	- 4 423	- 9 032	4 023	4 725

Source: Tables 4 and 5 (rows/columns 15, 18, 20 and 23)

(a) Balance = Gross saving
(b) Balance = - Net lending (+)/borrowing (-)

Thus, in terms of the position of the current transfers in the flows of domestic institutions into the government and households' budget in the years studied, the main sources of the government's receipts are current transfers from domestic institutions (67% in 1995 and 62.6% in 2005) and net taxes on products, while the main sources of its expenditure are current transfers to domestic institutions (44.7% in 1995 and 43.3% in 2005) and final consumption, with expenditures being increasingly larger than receipts and leading to the corresponding increase of the deficit in all of its balances. In the case of households, which maintain positive current and total budget balances, the main sources of receipts and expenditures are, respectively, the (gross national) income generated by them and final consumption – with current transfers playing a less important role (17.4% in 1995 and 20.5% in 2005, in total receipts; 24.7% in 1995 and 25.1% in 2005, in total expenditures). Therefore it is to be expected that changes in the current transfers between the government and households will certainly have a greater impact on government budgets than on the households' budgets.

For a better study of these effects, two scenarios will be studied: one (A) in which there will be a 1% reduction in the rate of the direct taxes associated with the current taxes on income, wealth, etc., paid by households to the government; and another (B) in which there will be a 1% increase in the social benefits (other than social transfers in kind) received by households from the government.

3. The SAM algebraic versions

Since our concern here is to quantify the effects of the social policy measures identified above, while also paying close attention to income distribution, the accounts of the institutions and their associated transactions will assume a central role. However, the production and rest of the world accounts should not be neglected, but their associated transactions must be afforded a level of specification that is different from the one found in models that attribute them a central role.

Static and comparative static analysis will be carried out with both the versions described below, in a framework in which prices are not separated from quantities, with changes being identified only at the level of values. On the other hand, it will be assumed that there is excess capacity in the economy and that the production technology and resource endowment are given.

3.1. Accounting multipliers, their components and the first results for the scenarios identified

The base methodology that is to be followed is centred upon the use of multipliers and their decomposition. A systematic outline of this methodology is provided below, following Santos 2004 and 2007, in keeping with the work of Pyatt and Roe (1977), Pyatt and Round (1985) and Defourny and Thorbecke (1984).

a) Deduction of the accounting multipliers

As shown in Table 11, we will have both exogenous and endogenous accounts, so that consequently the transactions in each cell of the SAM will be considered exogenous or endogenous according to the corresponding row and column accounts.

Table 11. The SAM in endogenous and exogenous accounts

		EXPENDITURES				
		Endogenous	Σ	Exogenous	Σ	TOTAL
RECEIPTS	Endogenous	N	n	X	x	y_n
	Exogenous	L	l	R	r	y_x
	TOTAL	y_n'		y_x'		

Source: Pyatt and Round (1985).

where:

N = matrix of transactions between endogenous accounts; n = vector of the (corresponding) row sums.

X = matrix of transactions between exogenous and endogenous accounts (injections from first into second); x = vector of the (corresponding) row sums.

L = matrix of transactions between endogenous and exogenous accounts (leakages from first into second); l = vector of the (corresponding) row sums.

R = matrix of transactions between exogenous accounts; r = vector of the (corresponding) row sums.

y_n = vector (column) of the receipts of the endogenous accounts ($\hat{y}_n$: diagonal; $\hat{y}_n^{-1}$: inverse); y_n' = vector (row) of the expenditures of the same accounts.

y_x = vector (column) of the receipts of the exogenous accounts; y_x' = vector (row) of the expenditures of the same accounts.

From Table 11, it can be written that

$$y_n = n + x \quad (1)$$

$$y_x = l + r \quad (2)$$

The amount that the endogenous accounts receive is equal to the amount that they spend (row totals equal column totals). In other words, in aggregate terms, total injections from the exogenous into the endogenous accounts (i.e. the column sum of "x") are equal to total leakages from the endogenous into the exogenous accounts, i.e. considering i' to be the unitary vector (row), the column sum of "1" is:

$$x * i^{'} = l * i'. \quad (3)$$

In the structure of Table 11, if the entries in the N matrix are divided by the corresponding total expenditures, a corresponding matrix (squared) can be defined of the average expenditure propensities of the endogenous accounts within the endogenous accounts or of the use of resources within those accounts. Calling this matrix A_n, it can be written that

$$A_n = N * \hat{y}_n^{-1} \quad (4)$$

$$N = A_n * \hat{y}_n \quad (5)$$

Considering equation (1), $y_n = A_n * y_n + x$ (6)

Therefore, $y_n = (I-A_n)^{-1} * x = M_a * x.$ (7)

We thus have the equation that gives the total receipts of the endogenous accounts (y_n), by multiplying the injections "x" by the matrix of the accounting multipliers:

$$M_a = (I-A_n)^{-1}. \quad (8)$$

On the other hand, if the entries in the L matrix are divided by the corresponding total expenditures, a corresponding matrix (non squared) can be defined of the average expenditure propensities of the endogenous accounts into the exogenous accounts or of the use of resources from the endogenous accounts into the exogenous accounts. Calling this matrix A_l, it can be written that

$$A_l = L * \hat{y}_n^{-1} \quad (9)$$

$$L = A_l * \hat{y}_n \quad (10)$$

Considering equation (2), $y_x = A_l * y_n + r$ (11)

Thus, $l = A_l * y_n = A_l * (I-A_n)^{-1} * x = A_l * M_a * x.$ (12)

So, with the accounting multipliers, the impact of changes in receipts is analysed at the moment when they occur, assuming that the structure of expenditure in the economy does not change.

b) Decomposition of the accounting multipliers

Accounting multipliers can be decomposed if we consider the A_n matrix and two other ones with the same size (B_n - with the diagonal of A_n, whilst all the other elements are null - and C_n - with a null diagonal, but with all the other elements of A_n). In this way, it can be written that

$$A_n = B_n + C_n. \quad (13)$$

Thus, from equation (6):

$$y_n = B_n * y_n + C_n * y_n + x = [I - (I - B_n)^{-1} * C_n]^{-1} * (I - B_n)^{-1} * x \text{ [13]}. \quad (14)$$

$$\text{Therefore: } M_a = [I - (I - B_n)^{-1} * C_n]^{-1} * (I - B_n)^{-1} = M_3 * M_2 * M_1. \quad (15)$$

The accounting multiplier matrix is thus decomposed into multiplicative components, each of which relates to a particular kind of connection in the system as a whole (Stone, 1985)[14].

- The intragroup or direct effects matrix, which represents the effects of the initial exogenous injection within the groups of accounts into which it had originally entered i.e.:

$$M_1 = (I - B_n)^{-1}. \quad (16)$$

- The intergroup or indirect effects matrix, which represents the effects of the exogenous injection into the groups of accounts, after its repercussions have completed a tour through all the groups and returned to the one which they had originally entered In other words, if we consider "t" to be the number of groups of accounts (six in the present study):

$$M_2 = \{I - [(I - B_n)^{-1} * C_n]^t\}^{-1}. \quad (17)$$

- The extragroup or cross effects matrix, which represents the effects of the exogenous injection when it has completed a tour outside its original group without returning to it, or, in other words, when it has moved around the whole system and ended up in one of the other groups. Thus, for the (six) "t" groups of accounts:

$$M_3 = \{I + [(I - B_n)^{-1} * C_n] + [(I - B_n)^{-1} * C_n]^2 + \ldots + [(I - B_n)^{-1} * C_n]^{t-1}\} \quad (18)$$

The decomposition of the accounting multipliers matrix can also be undertaken in an additive fashion, as follows:

$$M_a = I + (M_1 - I) + (M_2 - I) * M_1 + (M_3 - I) * M_2 * M_1 \quad (19)$$

where I represents the initial injection and the remaining components are the additional effects associated, respectively, with the three components described above (M_1, M_2 and M_3).

---

[13] $y_n = A_n * y_n + x = B_n * y_n + C_n * y_n + x \Leftrightarrow y_n - B_n * y_n = C_n * y_n + x \Leftrightarrow y_n = (I-B_n)^{-1} * C_n * y_n + (I-B_n)^{-1} * x \Leftrightarrow y_n - (I-B_n)^{-1} * C_n * y_n = (I-B_n)^{-1} * x \Leftrightarrow y_n * [I - (I-B_n)^{-1} * C_n] = (I-B_n)^{-1} * x \Leftrightarrow y_n = [I - (I-B_n)^{-1} * C_n]^{-1} * (I-B_n)^{-1} * x.$

[14] For a detailed breakdown and explanation of these components, see, for example, Stone (1985, pp. 156-162); Pyatt and Round (1985, pp. 192-197); Santos (1999, pp. 67-69).

Defourny and Thorbecke (1984) introduced an alternative to the above decomposition, namely s*tructural path analysis*, which makes it possible to identify and quantify the links between the pole (account) of origin and the pole (account) of destination of the impulses resulting from injections. According to this technique, the accounting multiplier is considered as a "global influence", which is decomposed into a series of "total influences". These, in turn, are decomposed into "direct influences" multiplied by the "path multiplier":

$$ma_{ji} = I^{G}_{(i \to j)} = \sum_{p=1}^{n} I^{T}_{(i \to j)_p} = \sum_{p=1}^{n} I^{D}_{(i \to j)_p} .Mp \qquad (20)$$

where:

ma_{ji} is the $(j,i)^{th}$ element of the M_a (accounting multipliers) matrix, which quantifies the full effect of a unitary injection x_j on the endogenous variable y_j

$I^{G}_{(i \to j)}$ is the *Global Influence* of the pole i on the pole j

p is the n^{th} elementary *path* – the arc linking two different poles, oriented in the direction of expenditure, located between *i* and *j*, with *i* being the pole of origin of the elementary *path 1* (the first) and *j* the pole of destination of the elementary *path n* (the last)

$I^{T}_{(i \to j)_p}$ is the *Total Influence* transmitted from *i* to *j* along the elementary *path p*

$I^{D}_{(i \to j)_p}$ is the *Direct Influence* of *i* on *j* transmitted along the elementary *path p*, which measures the magnitude of the influence transmitted between its two poles through the average expenditure propensity,

Mp is the *Multiplier* of the *path p*, or the *path Multiplier*, which expresses the extent to which the influence along the elementary *path p* is amplified through the effects of adjacent feedback circuits[15]:

$$Mp = \frac{\Delta p}{\Delta} \qquad (21)$$

where: Δ = the determinant of matrix $|I\text{-}A_n|$ of the structure represented by the SAM

Δp = the determinant of the submatrix of $|I\text{-}A_n|$ obtained by removing the row and the column associated with the poles of the elementary *path p*

[15] A circuit is a path for which the first pole (pole of origin) coincides with the last pole (pole of destination) (Defourny and Thorbecke, 1984, p. 119).

c) Scenario A (reduction in the rate of direct taxes paid by households to the government) – first results

Considering the methodology described above and the scenario to be studied, involving a flow from the households to the government, the (current and capital) accounts of the households were set as exogenous, as were also the financial and the rest of the world accounts, and the accounting multipliers were calculated and decomposed. From these results, the effects or influences of unitary changes (a reduction, in this case) in government current income were identified, as follows.

Table 12. Direct influences of unitary changes in the exogenous current receipts of the government

	1995	2005
Final consumption expenditure	0.48	0.53
Current transfers – within government, to the other institutions and to the rest of the world – to the households	 0.26 0.31	 0.17 0.38
Savings	-0.05	- 0.08
Total	1.00	1.00

Source: Tables A.1.1 and A.1.2
(columns dicg, corresponding to column 18, in both Table 4 and Table 5).

Note: Social transfers in kind represent a final consumption expenditure of the government and are not considered in the current transfers. In both years, social transfers in kind were about 60% of the government's final consumption expenditure.

The average expenditure propensities, represented in Table 12, measure the direct influences of unitary changes in the exogenous current receipts of the government – for instance in the direct taxes paid by households. From this table, it can be concluded that almost a half (0.48 in 1995; 0.53 in 2005) of that unit is spent on final consumption (of which approximately 60% will be transformed into social transfers in kind) and that more than a quarter is spent in current transfers (in cash) to households. Therefore, the direct effect of a reduction in the current expenditures of households, through a reduction in the direct taxes paid by households to the government, mainly means a reduction in the final consumption expenditure and in the current receipts of the government and, consequently, in the current receipts of households (coming from the government's current transfers – in cash or in kind). However, this impact on the current receipts of the households cannot be measured with the use of the multiplier methodology, since the accounts of the households are exogenous.

Accounting multipliers and their components, quantify a global influence on the endogenous accounts, which is quantified by the values of Tables 13 and 14, as follows.

Table 13. Global influences of unitary changes in the exogenous current receipts of the government

	1995	2005
Aggregate Demand/Supply	0.968	0.831
Production Value/Total Costs	0.883	0.766
Aggregate Factors Income – Labour – Own Assets	 0.408 0.149	 0.380 0.126
Aggregate Income – of the government – of the other Institutions (except households)	 1.317 0.097	 1.187 0.064
Aggregate Investment/Investment Funds – of the government – of the other Institutions (except households)	 - 0.101 0.026	 - 0.123 0.004

Source: Tables A.1.3 and A.1.4
(columns dicg, corresponding to column 18, in both Table 4 and Table 5).

Apart from the effect on the aggregate income of the government, where 1 is the initial injection (leakage, in the case of scenario A) of income, the greatest effects of unitary changes in the current receipts of the government were felt on aggregate demand (supply) and production values (total costs), reflecting the great importance of final consumption for the total current outlays of the government, as noted earlier.

These global effects generally decreased from 1995 to 2005, meaning that the impacts of such a social policy measure on the whole economy were less noticeable in 2005.

Some more conclusions about these effects can be drawn from the multipliers' components, as shown in Table 14.

Table 14. Additional group influences of unitary changes in the exogenous current receipts of the government

	1995			2005		
	intra	inter	extra	intra	inter	extra
Aggregate Demand/Supply	0	0.088	0.880	0	0.074	0.757
Production Value/Total Costs	0	0.013	0.870	0	- 0.008	0.774
Aggregate Factors Income – Labour – Own Assets	 0 0	 0.040 0.034	 0.368 0.115	 0 0	 0.044 0.033	 0.336 0.092
Aggregate Income – of the government – of the other institutions (except households)	 0.284 0	 0.006 0.004	 0.027 0.094	 0.151 0	 0.004 0.003	 0.032 0.061

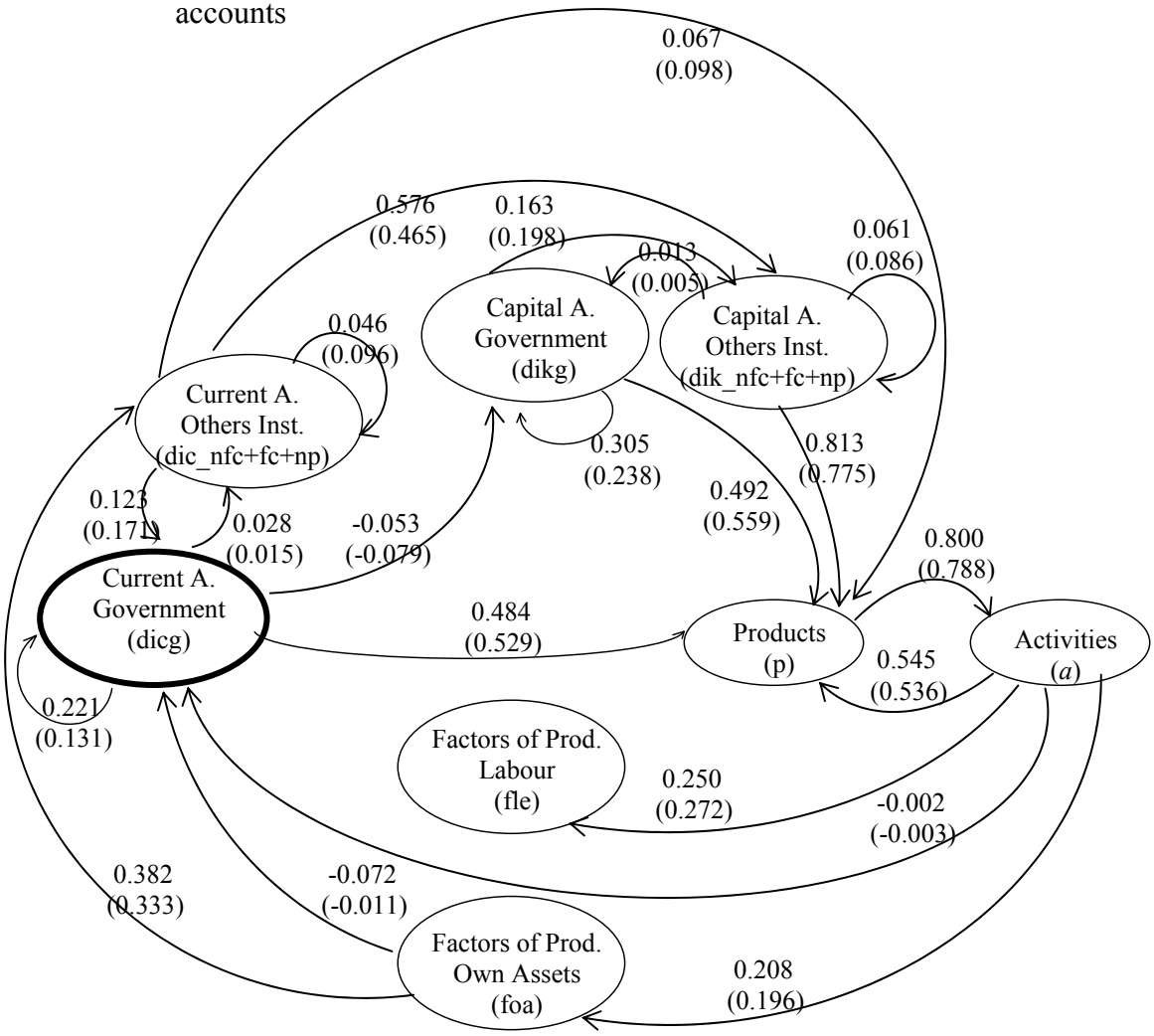
	1995			2005		
	intra	inter	extra	intra	inter	extra
Aggregate Investment/ /Investment Funds						
– of the government	0	- 0.001	- 0.100	0	- 0.001	- 0.122
– of the other institutions (except households)	0	0.023	0.003	0	0.015	- 0.011

Source: Tables A.1.5 – A.1.10
(columns dicg, corresponding to column 18, in both Table 4 and Table 5).

Thus, additional intragroup effects were felt only at the level of the aggregate income of the government. There is a clear predominance of additional extragroup influences, meaning that most of the repercussions originating from the current account of the government do not return to it, with the low values of the additional intergroup influences representing those repercussions that do in fact return.

The importance of the additional extragroup influences, as well as the values of global influences, can be seen in Figure 1, which provides a schematic representation of the direct influences associated with the network of elementary paths and adjacent circuits linking endogenous accounts, with particular emphasis on the current account of the government.

Figure 1. Scenario A - Network of elementary paths and adjacent circuits linking endogenous accounts



Note: This outline represents only the *paths* whose poles of origin and destination are the endogenous accounts.

Source: Tables A.1.1 and A.1.2 (values in brackets)

Considering the importance of final consumption for the government, especially in the case of the products of group 6, relative to services[16], which will be the social transfers in kind, the cells (p6, dicg) of the corresponding accounting multipliers (Tables A.1.3 and a.1.4) were decomposed through *structural path analysis*, in keeping with equation (20), with attention being centred on the accounts of that group of products and of the government. Table 15 shows the results of this analysis.

[16] Services other than wholesale and retail trade services, repair services, hotel and restaurant services, transport and communication services (products 4) and financial intermediation services, real estate, renting and business services (products 5).

Table 15. Structural path analysis of the global influences on aggregate demand of unitary changes in the exogenous current receipts of the government

	1995	2005
Accounting Multiplier	0.659	0.642
Path 1 (dicg → p6)		
$I^T = I^D * Mp$	0.626	0.628
I^D	0.459	0.498
Mp	1.363	1.260
Path 2 (dicg → dikg → p6)		
$I^T = I^D * Mp$	0.000	0.000
I^D	0.000	0.000
Mp	1.969	1.655
Other Paths (dicg → … → p6)		
I^T	0.033	0.014

Source: Tables A.1.3 and A.1.4.

Figure 1 helps us to see the linkages between accounts and how the impacts are widespread. Thus, *path 1* directly links the current account of the government (dicg or 18) to the account of the group of products 6 (p6 or 6) and absorbs almost all the impact, with the high values of the path multipliers showing that most of the impacts result from the adjacent feedback circuits. P*ath* 2 makes the same link through the capital account of the government (dikg) and has no importance in terms of total influence, although its path multiplier has a higher value than in *path 1*, showing its important role in the amplification of the effects through the adjacent feedback circuits. All the *other paths* have a significantly low importance.

The high values of the path multipliers help to underline the identified importance of the additional extragroup and intergroup influences, in the additional decomposition of the accounting multipliers.

It is important to remember that, with this methodology, apart from the unitary change in the current expenditures of households, through the reduction in the rate of direct taxes paid by households to the government (which is a direct effect), nothing more can be measured in terms of the global effects of that measure on the households' aggregate income and aggregate investment/investment funds, since their current and capital accounts were set as exogenous.

d) Scenario B (increase in the social benefits other than social transfers in kind received by households from the government) – first results

In this scenario, a flow from the government to the households will be studied. Thus, besides the financial and the rest of the world accounts, the (current and capital) accounts of the government were set as exogenous and the accounting multipliers were then calculated and decomposed.

Next, the effects or influences of unitary changes (an increase, in this case) in the households' current income were identified, as follows.

Table 16. Direct influences of unitary changes in the exogenous current receipts of households

	1995	2005
Final consumption expenditure	0.64	0.66
Current transfers – within households, to the other institutions and to the rest of the world – to the government	 0.08 0.18	 0.07 0.20
Savings	0.01	0.07
Total	1.00	1.00

Source: Tables A.1.11 and A.1.12
(columns dich, corresponding to column 15, in both Table 4 and Table 5).

In this scenario, Table 16 shows, through the average expenditure propensities, the direct influences of unitary changes in the exogenous current receipts of households – for instance in the social benefits paid by the government. Thus, more than a half (0.64 in 1995; 0.66 in 2005) of that unit is spent in final consumption and a significant part of the remainder represents current transfers to the government. Therefore, the direct effect of an increase in the current expenditures of the government, through an increase in the social benefits paid by the government to households, mainly means an increase in the final consumption expenditure and in the current receipts of households and, consequently, in the current receipts of the government (coming from households' current transfers). Just as was seen in scenario A, this impact on the current receipts of the government cannot be measured using the multiplier methodology, since the accounts of the government are exogenous.

Tables 17 and 18 quantify and decompose the global influence of such changes on the endogenous accounts.

Table 17. Global influences of unitary changes in the exogenous current receipts of households

	1995	2005
Aggregate Demand/Supply	2.897	2.467
Production Value/Total Costs	2.294	1.926
Aggregate Factors Income – Labour – Own Assets	 0.512 0.492	 0.472 0.403
Aggregate Income – of the households – of the other institutions (except government)	 1.875 0.296	 1.726 0.233

	1995	2005
Aggregate Investment/Investment Funds		
– of the households	0.212	0.139
– of the other institutions (except government)	0.185	0.132

Source: Tables A.1.13 and A.1.14
(columns dich, corresponding to column 15, in both Table 4 and Table 5).

In this case, apart from the effect on the aggregate income of households, where 1 is the initial injection of income, the greatest effects (of unitary changes in the current receipts of households) were felt in a similar way to scenario A, but now more than twice as intensely at the level of the aggregate demand (supply) and production values (total costs), reflecting the great importance of final consumption for the total current outlays of the households, as seen in Table 13.

In this scenario, a general decrease in the global effects can also be noted from 1995 to 2005. This is shown in Table 18, where, at all levels of impact, the additional extragroup influences are dominant; the intergroup effects are almost insignificant and the intragroup effects almost null. Therefore, as was seen in scenario A, most of the repercussions originating from the current account of households do not return to it.

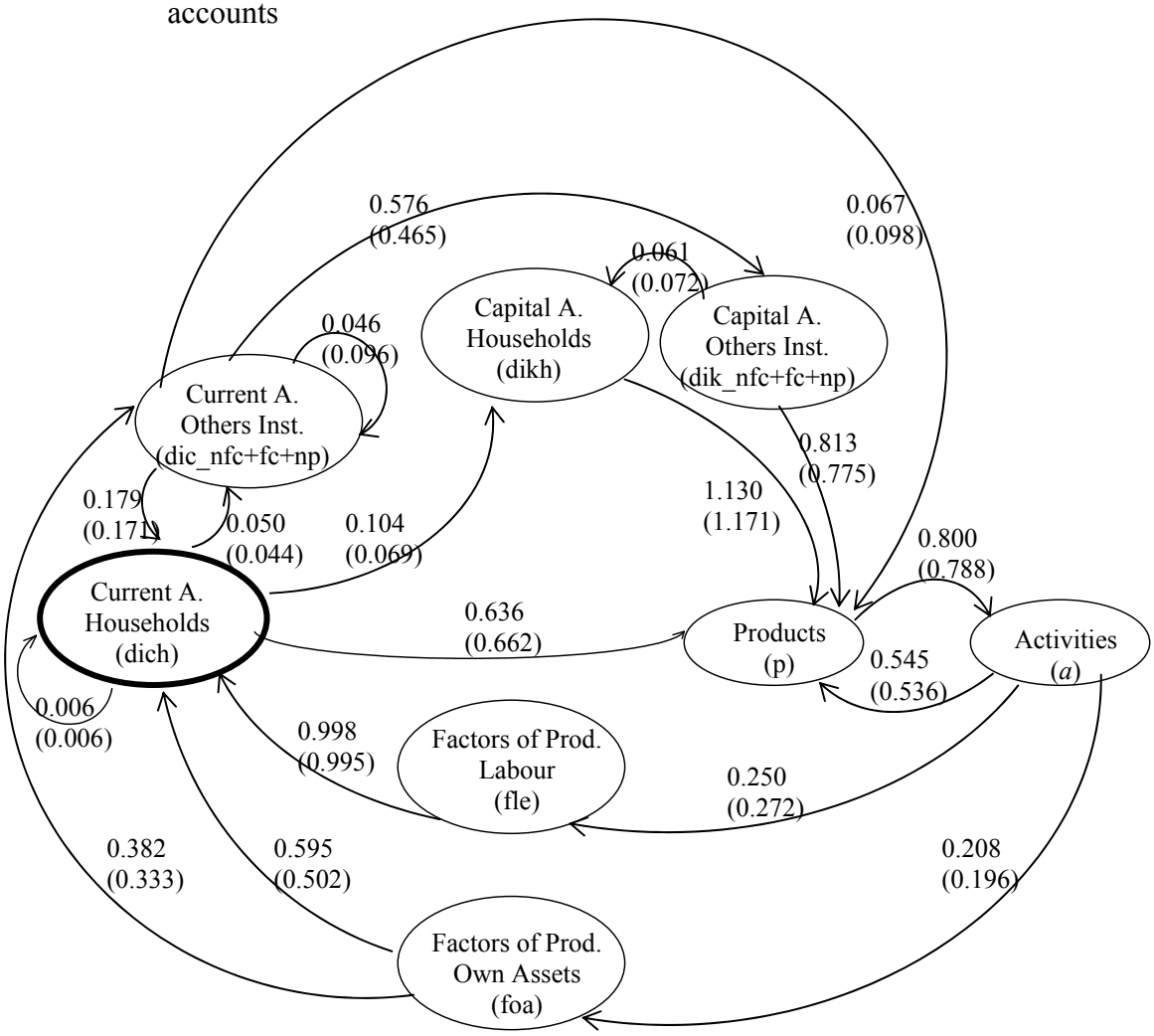
Table 18. Additional group influences of unitary changes in the exogenous current receipts of households

	1995			2005		
	intra	inter	extra	intra	inter	extra
Aggregate Demand/Supply	0	0.462	2.435	0	0.387	2.079
Production Value/Total Costs	0	0.321	1.973	0	0.248	1.678
Aggregate Factors Income						
– Labour	0	0.090	0.423	0	0.080	0.392
– Own Assets	0	0.093	0.398	0	0.078	0.325
Aggregate Income						
– of the households	0.006	0.164	0.705	0.006	0.128	0.592
– of the other institutions (except government)	0	0.053	0.243	0	0.039	0.194
Aggregate Investment/ /Investment Funds						
– of the households	0	0.031	0.181	0	0.020	0.119
– of the other institutions (except government)	0	0.045	0.140	0	0.031	0.101

Source: Tables A.1.15-A.1.20
(columns dich, corresponding to column 15, in both Table 4 and Table 5)

Structural path analysis helps us to understand these effects, through the schematic representation of the direct influences shown in Figure 2, which represents the network of elementary paths and adjacent circuits linking endogenous accounts, with special emphasis being placed on the current account of households.

Figure 2. Scenario B - Network of elementary paths and adjacent circuits linking endogenous accounts



Note: This outline represents only the *paths* whose poles of origin and destination are the endogenous accounts.

Source: Tables A.1.13. and A.1.14. (values in brackets)

Table 16 shows that the direct influences of unitary changes in the exogenous current receipts of households were centred mainly on their final consumption, thus underlining the importance of group 2, relating to manufactured products and energy products (as well as products from mining and quarrying). The cells (dich, p2) of the corresponding accounting multipliers were decomposed through *structural path analysis*, in keeping with equation (20), paying special attention to the accounts of that group of products and of households. The results are shown in Table 19.

Table 19. Structural path analysis of the global influences on aggregate demand of unitary changes in the exogenous current receipts of households

	1995	2005
Accounting Multiplier	1.521	1.187
Path 1 (dich → p2)		
$I^T = I^D * Mp$	1.086	0.894
I^D	0.366	0.342
Mp	2.967	2.611
Path 2 (dich → dikh → p2)		
$I^T = I^D * Mp$	0.047	0.020
I^D	0.016	0.008
Mp	2.978	2.624
Other Paths (dich → … → p2)		
I^T	0.388	0.273

Source: Tables A.1.13 and A.1.14.

The studied *paths* can be identified in Figure 2, in which the other linkages between endogenous accounts can also be identified. Almost all of the global influence is centred on *path 1*, which directly links the current account of the households (dich) to the account of products 2 (p2); *path 2*, which makes the same link through the capital account of the households, has an almost insignificant (global) influence, especially if compared with the *other paths*. Mention should be made here of the values of the *path multipliers*, which, besides confirming the already identified importance of the additional extragroup and intergroup influences in the additional decomposition of the accounting multipliers, show the important role played by those paths in the amplification of these effects through the adjacent feedback circuits.

As in scenario A, it is important to bear in mind that, with this methodology, apart from the unitary change in the current expenditures of the government, through the increase in the social benefits paid by the government to households (which is a direct effect), nothing more can be measured in terms of the global effects of that measure on the government's aggregate income and aggregate investment/investment funds, since their current and capital accounts were set as exogenous.

3.2. The SAM-based linear model

This model was first developed by the author of this paper in Santos (2008) and Santos (2009), with the same basic structure but with some more details, especially in the latter study, associated with a more disaggregated numerical version, which was not possible here due to the unavailability of data for 2005. However, the author believes that this will not affect the purpose of understanding its results and of comparing them with those of the alternative methodology developed in the previous section (3.1).

As can be confirmed by comparing the structure of this model with the structure of the underlying database, or numerical version, presented in section 2, all the transactions of the national accounts are identified, although a significant part are still considered as exogenous. Parameters were calculated from the data used for the construction of the numerical versions, from which the exogenous variables were also identified.

The GAMS (General Algebraic Modelling System) software was used to run this model – firstly to calibrate it and then to perform the experiments associated with the described scenarios.

In this version of the model, it will be assumed that all domestically produced output is market output, and therefore any output produced for own final use and other non-market output will be considered as non-existent – the author hopes that this assumption can be eliminated in a future version of this model. On the other hand, since there is sufficient production capability available in the economy and imports are exogenous, domestic output will respond exclusively to aggregate demand.

Table 20. The formalized transactions (cells) in the basic SAM

	p	*a*	f	dic	dik	dif	rw	total
p – products	t_{pp}	t_{pa}	0	$t_{p\,dic}$	$t_{p\,dik}$	0	$t_{p\,rw}$	$t_{p.}$
a – activities	t_{ap}	0	0	0	0	0	0	$t_{a.}$
f – factors of production	0	t_{fa}	0	0	0	0	$t_{f\,rw}$	$t_{f.}$
dic – current account of the (domestic) institutions	$t_{dic\,p}$	$t_{dic\,a}$	$t_{dic\,f}$	$t_{dic\,dic}$	0	0	$t_{dic\,rw}$	$t_{dic.}$
dik – capital account of the (domestic) institutions	0	0	0	$t_{dik\,dic}$	$t_{dik\,dik}$	$t_{dik\,dif}$	$t_{dik\,rw}$	$t_{dik.}$
dif – financial account of the (domestic) institutions	0	0	0	0	0	$t_{dif\,dif}$	$t_{dif\,rw}$	$t_{dif.}$
rw – rest of the world	$t_{rw\,p}$	$t_{rw\,a}$	$t_{rw\,f}$	$t_{rw\,dic}$	$t_{rw\,dik}$	$t_{rw\,dif}$		$t_{rw.}$
total	$t_{.p}$	$t_{.a}$	t_{f}	$t_{.dic}$	$t_{.dik}$	$t_{.dif}$	$t_{.rw}$	

cell	**Equations** (or exogenous variables) See "conventions and declarations" in the Appendix (A.2.3.)	Eq.nº
Compensation of factors of production		
t_{fa}	**G**ross **A**dded **V**alue	
	$GAV_{f,a} = dbs_{f,a} * GAV_a$	(22)
	$GAV_a = \beta_a * VP_a$	(23)
	$GAV_f = \Sigma_a GAV_{f,a}$	(24)
$t_{f\,rw}$	**C**ompensation of **F**actors (**R**eceived) from the rest of the world	
	$CFR_{f,rw}$	---
$t_{dic\,f}$	**G**ross **N**ational **I**ncome	
	$GNI_{dic,f} = cf_{dic,f} * GNI_f$	(25)

cell	**Equations** (or exogenous variables) See "conventions and declarations" in the Appendix (A.2.3.)	Eq.nº
	$GNI_f = GAV_f + CFR_{f,rw} - CFS_{rw,f}$	(26)
	$GNI_{dic} = \Sigma_f GNI_{dic,f}$	(27)
	$GNI = \Sigma_{dic} GNI_{dic}$	(28)
$t_{rw\,f}$	**C**ompensation of **F**actors (**S**ent) to the rest of the world	
	$CFS_{rw,f}$	---
Production		
$t_{a\,p}$	$VP_p = AD_p - TMT_p - NTP_p - IM_p$	(29)
	$VP_{a,p} = VP_p * \alpha_{a,p}$	(30)
	$VP_a = \Sigma_p VP_{a,p}$	(31)
External Trade		
$t_{p\,rw}$	**E**xports	
	$EX_{p,rw}$	---
$t_{rw\,p}$ (part)	**I**mports	
	$IM_{rw,p}$	---
Net indirect taxes or net taxes on production and imports		
Net **T**axes on Production (of **A**ctivities)		
$t_{dic\,a}$	$NTA_{dic,a} = ntag_{dic,a} * NTAA_a$	(32)
	$NTA_{dic} = \Sigma_a NTA_{dic,a}$	(33)
	$NTA_a = \Sigma_{dic} NTA_{dic,a}$	(34)
$t_{rw\,a}$	$NTA_{rw,a} = ntarw_{rw,a} * NTAA_a$	(35)
	$NTA_{rw} = \Sigma_a NTA_{rw,a}$	(36)
	$NTA = \Sigma_{dic} NTA_{dic} + NTA_{rw}$	(37)
Net **T**axes on **P**roducts		
$t_{dic\,p}$	$NTP_{dic,p} = ntpg_{dic,p} * NTP_p$	(38)
	$NTP_{dic} = \Sigma_p NTP_{dic,p}$	(39)
$t_{rw\,p}$ (part)	$NTP_{rw,p} = ntprw_{rw,p} * NTP_p$	(40)
	$NTP_{rw} = \Sigma_p NTP_{rw,p}$	(41)
	$NTP_p = tp_p * DT_p$	(42)
	$NTP = \Sigma_{dic} NTP_{dic} + NTP_{rw}$	(43)
Trade and Transport Margins		
t_{pp}	$TM_{p,p} = tmr_{p,p} * DT_p$	(44)
	$TMP_p = \sum_p TM_{p,p}$ (column sum)	(45)
Domestic Trade		
	$DTmp_p = VIC_p + FC_p + GCF_p$	(46)
	$DT_p = DTmp_p - TMP_p - NTP_p$	(47)
$t_{p\,a}$	(**V**alue of) **I**ntermediate **C**onsumption	

cell	**Equations** (or exogenous variables) See "conventions and declarations" in the Appendix (A.2.3.)	Eq.nº
	$VIC_a = \gamma_a * VP_a$	(48)
	$VIC_{p,a} = icp_{p,a} * VIC_a$	(49)
	$VIC_p = \Sigma_a VIC_{p,a}$	(50)
	$VIC = \Sigma_p \Sigma_a VIC_{p,a}$	(51)
$t_{p\,dic}$	**F**inal **C**onsumption	
	$FC_{dic} = apc_{dic} * DI_{dic}$	(52)
	$FC_{p,dic} = fcs_{p,dic} * FC_{dic}$	(53)
$t_{p\,dik}$	**G**ross **C**apital **F**ormation	
	$GCF_{p,dik} = gfcf_{p,dik} * P51_{dik} + P52_p * chinv_{p,dik} + adv_{p,dik} * P53_{dik}$	(54)
	$GCF_{dik} = \Sigma_p GCF_{p,dik}$	(55)
	$P52_p = chinvc_p * AS_p$	(56)
	$P53_{dik} = advc_{dik} * S_{dik}$	(57)
Current Transfers		
$t_{dic\,dic}$	$CT_{dic,dic} = d5s_{dic,dic} * D5_{dic} + d61s_{dic,dic} * D61_{dic} + d62s_{dic,dic} * D62P_{dic} + d7_{dic,dic} * D7P_{dic} + D8_{dic,dic}$	(58)
	$D5_{dic} = ti_{dic} * AI_{dic}$	(59)
	$D61_{dic} = sc_{dic} * GNI_{dic}$	(60)
	$CTR_{dic} = \Sigma_{dic} CT_{dic,dic}$	(61)
	$CTP_{dic} = \Sigma_{dic} CT_{dic,dic}$	(62)
$t_{dic\,rw}$	$CT_{dic,rw} = D5RW_{dic,rw} + D61RW_{dic,rw} + D62RW_{dic,rw} + D7RW_{dic,rw}$	(63)
$t_{rw\,dic}$	$CT_{rw,dic} = d5rws_{rw,dic} * D5_{dic} + d61rws_{rw,dic} * D61_{dic} + d62rws_{rw,dic} * D62P_{dic} + d7rws_{rw,dic} * D7P_{dic}$	(64)
	$FC_{rw,dic} = fcsrw_{rw,dic} * FC_{dic}$	(65)
Capital Transfers		
$t_{dik\,ik}$	$KT_{dik,dik} = d91_{dik,dik} * D91P_{dik} + D92R_{dik} * d92_{dik,dik} + D99R_{dik} * d99_{dik,dik}$	(66)
	$D91P_{dik} = tk_{dik} * D99R_{dik}$	(67)
	$D92R_{dik} = cgfcf_{dik} * P51_{dik}$	(68)
	$KTR_{dik} = \Sigma_{dik} KT_{dik,dik}$	(69)
	$KTP_{dik} = \Sigma_{dik} KT_{dik,dik}$	(70)
$t_{dik\,rw}$	$KT_{dik,rw} = D92R_{dik} * d92rw_{dik,rw} + D99R_{dik} * d99rw_{dik,rw}$	(71)
$t_{rw\,dik}$	$KT_{rw,dik} = D92P_{rw,dik} + D99P_{rw,dik} + K2_{rw,dik}$	(72)
Gross Saving		
$t_{dik\,dic}$	$S_{dik,dic} = si_{dik,dic} * S_{dic}$	(73)
	$S_{dik} = \Sigma_{dik} S_{dik,dic}$	(74)
	$S_{dic} = (1 - apc_{dic}) * DI_{dic}$	(75)

cell	**Equations** (or exogenous variables) See "conventions and declarations" in the Appendix (A.2.3.)	Eq.nº
	$S = \Sigma_{dic}\, S_{dic} = \Sigma_{dik}\, S_{dik}$	(76)
Financial Transactions		
t_{difdif}	FT_{dif}	---
t_{difrw}	$FTRW_{dif,rw} = FT_{rw,dif} + NLB_{dif}$	(77)
t_{rwdif}	$FT_{rw,dif}$	---
Net borrowing/lending		
t_{dikdif}	$NLB_{dik,dif} = AINV_{dik} - (S_{dik} + KTR_{dik} + KT_{dik,rw})$	(78)
	$NLB_{dif} = \Sigma_{dik}\, NLB_{dik,dif}$	(79)
Row totals		
$t_{p.}$	**A**ggregate **D**emand	
	$AD_p = VIC_p + FC_p + GCF_p + EX_{p,rw}$	(80)
$t_{a.}$	**P**roduction **V**alue	
	$VPT_a = \Sigma_p VP_{ap}$	(81)
$t_{f.}$	**A**ggregate **F**actors **I**ncome (**R**eceived)	
	$AFIR_f = GAV_f + CFR_{f,rw}$	(82)
$t_{dic.}$	**A**ggregate **I**ncome	
	$AI_{dic} = GNI_{dic} + NTA_{dic} + NTP_{dic} + CTR_{dic} + CT_{dic,rw}$	(83)
$t_{dik.}$	**In**vestment **F**unds	
	$INVF_{dik} = S_{dik} + KTR_{dik} + NLB_{dik,dif} + KT_{dik,rw}$	(84)
$t_{dif.}$	**T**otal **F**inancial **T**ransactions (**R**eceived)	
	$TFTR_{dif} = FT_{dif,dif} + FTRW_{dif,rw}$	(85)
$t_{rw.}$	**V**alue of **T**ransactions to the **R**est of the **W**orld (**P**aid)	
	$TVRWP_{rw} = CFS_{rw,f} + \Sigma_a NTA_{rw,a} + \Sigma_p(NTP_{rw,p} + IM_{rw,p}) + \Sigma_{dic}\,(CT_{rw,dic} + FC_{rw,dic}) + \Sigma_{dik}\, KT_{rw,dik} + FT_{rw,dif}$	(86)
Column totals		
$t_{.p}$	**A**ggregate **S**upply	
	$AS_p = VP_p + TMT_p + NTP_p + IM_{rw,p}$	(87)
$t_{.a}$	**T**otal **C**osts	
	$VCT_a = GAV_a + VIC_a + NTA_a + NTA_{rw,a}$	(88)
$t_{.f}$	**A**ggregate **F**actors **I**ncome (**P**aid)	
	$AFIP_f = GNI_f + CFS_{rw,f}$	(89)
$t_{.dic}$	**A**ggregate **I**ncome	
	$AIP_{dic} = FC_{dic} + CTP_{dic} + S_{dic} + (CT_{rw,dic} + FC_{rw,dic})$	(90)
$t_{.dik}$	**A**ggregate **I**nvestment	
	$AINV_{dik} = GCF_{dik} + KTP_{dik} + KT_{rw,dik}$	(91)
$t_{dif.}$	**T**otal **F**inancial **T**ransactions (**P**aid)	
	$TFTP_{dif} = NLB_{dif} + FT_{dif,dif} + FT_{rw,dif}$	(92)
t_{rw}	**V**alue of **T**ransactions from the **R**est of the **W**orld (**R**eceived)	
	$TVRWR_{rw} = CFR_{f,rw} + \Sigma_p EX_{p,rw} + \Sigma_{dic} CT_{dic,rw} + \Sigma_{dik}\, KT_{dik,rw} + FTRW_{dif,rw}$	(93)

Sources: Santos (2008a and 2009a)

3.3. Accounting multipliers and the SAM-based linear model

Comparing the two SAM-based modelling methodologies described above, besides the common assumptions referred to at the beginning of Section 3, the existence of many fixed parameters in the linear model and fixed average expenditure propensities in the multipliers can be considered to be amongst its strongest and most limitative assumptions.

Special mention should be made of the financial transactions and of the transactions with the rest of the world: all of these are considered as exogenous in the accounting multipliers and almost all of them are considered as exogenous in the SAM-based linear model.

On the other hand, using the methodology of multipliers, shocks can only be performed on matrix X (transactions between exogenous and endogenous accounts - injections from first into second) and therefore the account of origin of the flow to be studied has to be set as exogenous. This means that, at the level of that account, all that can be measured is the direct influence of that shock. The global effect and the intra, inter and extragroup influences resulting from the impact of the same shock on the destination are not considered. This does not happen with the linear model, with which shocks can be performed using specific parameters (and exogenous variables) within specific SAM cells and not within SAM accounts. Therefore, more impacts can be measured with the linear model.

From the reading of the first results of the multipliers and its components, it is easy to gain an idea of the path of the impact of a unitary change, which is very useful in analysing and understanding the scenarios that result from the experiments.

4. Quantifying effects of social policy measures using macroeconomic aggregates and balances

Section 2 identified two scenarios associated with two experiments, using the two SAM algebraic versions described above. The results of those experiments will be measured at the level of macroeconomic aggregates and balances, which can be calculated either from the cells of the (recalculated) SAMs or by extending the linear model with the equations of Appendix A.2.2 – the latter form of calculation can also be seen as the methodology underlying the former.

In these experiments, shocks will be performed on the current transfers within domestic institutions (see cell (dic,dic) in Tables 1 and 2); more precisely, on the current transfers between government and households (see cell (18, 15 and 15, 18) in Tables 4 and 5).

Scenario A admits a reduction of 1% in the rate of direct taxes paid by households to the government, i.e. from 0.0645 to 0.0545, in 1995; from 0.0597 to 0.0497, in 2005. In absolute

terms, households paid/the government received less: 764.13*10^6€ in 1995 and 1385.45*10^6€ in 2005.

Thus, in the case of the multipliers, using the methodology described in Section 3.1 a) and c), in each year, the SAM cell (18, 15), in the X matrix, was recalculated, as well as the corresponding x vector. From equation (7), y_n was recalculated, using the accounting multipliers matrix (M_a) referred to in Section 3.1.c) (Tables A.1.3 and A.1.4). Besides the R matrix, which did not change, the remaining part of the SAM, i.e. the N and L matrices, were recalculated from equations (5) and (10), using the average expenditure propensities matrices (A_n and A_l) referred to in Section 3.1.c) (Tables A.1.1 and A.1.2).

In the case of the linear model, in equation (59), ti_{dich} was changed and the model was run subsequently.

With a reduction in the rate of direct taxes paid by households to the government, the receipts of the former will increase (due to their reduced expenditure) and those of the latter will decrease. Speaking about income in general and current income in particular, as seen in Section 2.1, we are dealing with an item that is one of the main sources of government income (current transfers from households) and yet is not very important in the case of household budgets. On the other hand, as seen in Section 3.1 c), the direct effect of changes in the government's (current) income are felt mainly at the level of final consumption (of which approximately 60% will be transformed into social transfers in kind to households and more than a quarter is expended in current transfers (in cash) to households). However, the global repercussions of this (direct) effect cannot be calculated using the methodology of multipliers, because the households' (current and capital) accounts had to be set as exogenous, but they can be calculated using the linear model, despite its (many) exogenous parameters and variables.

Tables 21 and 22 summarise the impacts at the level of macroeconomic aggregates and balances.

Table 21. Impacts of a reduction (of 1%) in the rate of direct taxes paid by households to the government on macroeconomic aggregates in 1995 and 2005.

Macroeconomic Aggregates	1995			2005		
	10^6 € (before the experiment)	percentage change		10^6 € (before the experiment)	percentage change	
		L.Model	Multipliers		L.Model	Multipliers
Gross domestic product at market prices (GDP)	80 827	- 1.34	- 0.55	149 123	- 2.13	- 0.49
Gross national income (at market prices) (GNIMP)	80 479	- 1.35	- 0.54	146 224	- 2.17	- 0.48

Macroeconomic Aggregates		1995			2005		
		10^6 € (before the experiment)	percentage change		10^6 € (before the experiment)	percentage change	
			L.Model	Multipliers		L.Model	Multipliers
Gross Disposable Income (DI), of:	Households	57 857	0.13	0.11	103 239	- 0.48	0.14
	Non-financial corporations	9 342	- 1.15	- 0.28	9 884	- 2.40	- 0,25
	Financial corporations	1 558	- 2.37	- 0.17	4 072	- 3.37	- 0.18
	General government	13 371	- 7.57	- 3.24	27 199	- 8.39	- 2.72
	Non-profit institutions serving households	1 388	- 0.10	- 2.04	3 312	- 0.54	- 0.82
	Total	83 517	- 1.30	- 0.51	147 706	- 2.14	- 0.44

Source: Tables 4 and 5 and other data provided by Statistics Portugal (*INE*) (Portuguese National Accounts) for the calculation of the parameters used in the model defined in Section 3.2 (from which the values shown in this table were derived).

Therefore, the negative percentage changes felt at the level of all the macroeconomic aggregates represented in Table 21, except the households' DI, confirm the importance of direct taxes for the government's budget and the direct and global influence caused by a change in their value. Mention should also be made of the high values of the changes taking place in the government's DI and in the other institutions' DI, except that of households, as well as in the GDP and GNIMP. This also confirms the importance of the additional extragroup and intergroup influences, identified in Section 3.1c) with the decomposition of the accounting multipliers and the *structural path analysis* that was carried out. The higher values in the percentage changes calculated from the linear model are certainly explained by the above-mentioned effects, quantified by this analysis and not by the multipliers, due to the fact that the accounts of the households were set as exogenous. We are thinking here about the effects of the increase on the receipts of households, resulting from the reduction in their expenditures, and of the decrease in current transfers (in cash and in kind) from the government, (directly) resulting from the reduction in the latter's receipts. All of these aspects can be better understood with an analysis of the changes in the budgets of the institutions.

Table 22. Impacts of a reduction (of 1%) in the rate of direct taxes paid by households to the government on macroeconomic balances in 1995 and 2005.

Macroeconomic balances		1995			2005		
		10^6 € (before the experiment)	percentage change		10^6 € (before the experiment)	percentage change	
			L.Model	Multipliers		L.Model	Multipliers
Current balance or Gross Saving of:	Households	7 952	0.13	0.00	9 544	- 0.48	0.00
	Non-financial corporations	9 342	- 1.15	- 0.28	9 884	- 2.40	- 0.25
	Financial corporations	1 558	- 2.37	- 0.17	4 072	- 3.37	- 0.18
	General government	- 1661	- 7.57	- 3.24	- 4 775	- 8.39	- 2.72
	NPISHs	100	- 0.10	- 2.04	300	- 0.54	- 0.82
	Total (S)	17 291	- 0.05	0.13	19 025	- 0.11	0.50
Capital balance of:	Households	- 3 929	- 0.02	- 0.00	- 4 818	- 0.01	0.00
	Non-financial corporations	- 9292	- 0.03	- 0.29	- 18 642	- 0.02	- 0.13
	Financial corporations	- 1 271	- 0.01	- 0.20	- 3 391	- 0.03	- 0.21
	General government	- 2 761	0.00	1.95	- 4 248	- 0.02	3.06
	NPISHs	- 77	- 0.09	- 2.65	- 260	- 0.17	- 0.95
	Total	- 17 332	- 0.02	0.13	- 31 359	- 0.02	0.31
Total balance or Net Lending(+)/Borrowing(-) of:	Households	4 023	0.27	0.00	4 725	- 0.95	0.00
	Non-financial corporations	49	- 211.13	0.00	- 8 758	2.68	0.00
	Financial corporations	287	- 12.83	0.00	681	- 19.99	0.00
	General government	- 4 423	- 2.85	0.00	- 9 023	- 4.45	0.00
	NPISHs	23	- 0.17	0.00	41	- 2.89	0.00
	Total (NLB)	- 40	11.18	0.00	- 12 335	0.12	0.00

Source: see Table 21.

Thus, in the multiplier columns, the zero percentage changes in the budget balances of the households and the total balances of all the institutions result from the fact that the (current and capital) accounts of the households and the financial accounts are considered exogenous. The differences between these values and those that result from the use of the linear model undeniably have the same explanation as the one that is given for the differences between the macroeconomic aggregates.

Therefore, a social policy measure, such as the one studied in this scenario, which is designed to immediately improve the financial conditions of people, and whose first (direct) impact produces this effect, also has impacts at other levels and on the economy as a whole that, in the end,

worsen the situation. Nonetheless, it may be a plausible contribution for explaining the evolution of the Portuguese economy and its net borrowing.

Scenario B admits an increase of 1% in the social benefits other than social transfers in kind received by households from the government, i.e. a rise from 9485 to 9580*10^6€ in 1995; from 22121 to 22342*10^6€ in 2005. In other words, households received/the government paid more: 94.85*10^6€ in 1995 and 221.21*10^6€ in 2005).

In this case, in each year, the calculations made using the multiplier methodology followed the procedure outlined in Sections 3.1 a) and d), changing the cell (15, 18), in the X matrix of the SAM and recalculating the corresponding x vector. With equations (7), (5) and (10) and using the accounting multipliers matrix (M_a) (Tables A.1.13 and A.1.14) and the average expenditure propensities matrices (A_n and A_l) referred to in Section 3.1.d) (Tables A.1.11 and A.1.12), the y_n vector and the N and L matrices were respectively recalculated.

In the case of the linear model, after the change of $D62P_{dicg}$ in equation (58). this scenario was subsequently run through the model.

With the increase in the social benefits other than social transfers in kind received by households from the government, the receipts of the former will increase and those of the latter will decrease. Considering income in general and current income in particular, from what was seen in Section 2.1, we are dealing with an item that is one of the main sources of government expenditure (current transfers to households) and yet is not very important in the households' budget. In Section 3.1 d) the direct and global effects of changes in households' (current) income were analysed, in which the significant role of final consumption was identified, as well as its consequent impact on aggregate demand/supply and production value/total costs – the columns of percentage changes with multipliers in Tables 23 and 24, reflect and confirm this analysis. However, neither the global repercussions of the direct effect of changes in households' (current) income on their current transfers to the government (Table 16) nor the direct and global effects of the decrease in the government's income that result from this social policy measure are covered by the multiplier methodology. From the point of view of the author of this paper, this is the explanation for the negative values of the percentage changes calculated with the linear model, which have exogenous parameters and variables instead of accounts and can explain these effects, at least in part.

Table 23. Impacts of an increase (of 1%) in the social benefits other than social transfers in kind received by households from the government on macroeconomic aggregates in 1995 and 2005.

Macroeconomic Aggregates		1995			2005		
		10^6 € (before the experiment)	percentage change		10^6 € (before the experiment)	percentage change	
			L.Model	Multipliers		L.Model	Multipliers
Gross domestic product at market prices (GDP)		80 827	- 0.16	0.14	149 123	- 0.34	0.15
Gross national income (at market prices) (GNIMP)		80 479	- 0.16	0.13	146 224	- 0.34	0.14
Gross Disposable Income (DI), of:	Households	57 857	0.01	0.23	103 239	- 0.08	0.27
	Non-financial corporations	9 342	- 0.14	0.14	9 884	- 0.38	0.16
	Financial corporations	1 558	- 0.28	0.18	4 072	- 0.54	0.19
	General government	13 371	- 0.89	- 0.36	27 199	- 1.30	- 0.39
	Non-profit institutions serving households	1 388	- 0.01	0.08	3 312	- 0.09	0.15
	Total	83 517	- 0.15	0.12	147 706	- 0.34	0.14

Source: see Table 21.

Table 24. Impacts of an increase (of 1%) in the social benefits other than social transfers in kind received by households from the government the macroeconomic balances in 1995 and 2005.

Macroeconomic balances		1995			2005		
		10^6 € (before the experiment)	percentage change		10^6 € (before the experiment)	percentage change	
			L.Model	Multipliers		L.Model	Multipliers
Current balance or Gross Saving of:	Households	7 952	0.01	0.23	9 544	- 0.08	0.28
	Non-financial corporations	9 342	- 0.14	0.14	9 884	- 0.38	0.16
	Financial corporations	1 558	- 0,28	0.18	4 072	- 0.54	0.19
	General government	- 1661	- 0.89	0.00	- 4 775	- 1.30	0.00
	NPISHs	100	- 0.01	0.08	300	- 0.09	0.15
	Total (S)	17 291	- 0.01	0.20	19 025	- 0.03	0.26

Macroeconomic balances		1995			2005		
		10^6 € (before the experiment)	percentage change		10^6 € (before the experiment)	percentage change	
			L.Model	Multipliers		L.Model	Multipliers
Capital balance of:	Households	- 3 929	0.00	0.47	- 4 818	0.00	0.55
	Non-financial corporations	- 9292	0.00	0.14	- 18 642	0.00	0.08
	Financial corporations	- 1 271	0.00	0.22	- 3 391	- 0.01	0.23
	General government	- 2 761	- 0.07	0.00	- 4 248	- 0.04	0.00
	NPISHs	- 77	0.00	0.10	- 260	0.00	0.17
	Total	- 17 332	0.00	0.20	- 31 359	0.00	0.16
Total balance or Net Lending(+)/Borrowing(-) of:	Households	4 023	0.03	0.00	4 725	- 0.17	0.00
	Non-financial corporations	49	- 25.21	0.00	- 8 758	0.42	0.00
	Financial corporations	287	- 1,53	0.00	681	- 3.23	0.00
	General government	- 4 423	- 0.34	0.00	- 9 023	- 0.70	0.00
	NPISHs	23	0.19	0.00	41	- 0.43	0.00
	Total (NLB)	- 40	2.03	0.00	- 12 335	0.03	0.00

Source: see Table 21.

Therefore, the low values of the percentage changes of the multipliers highlight the low importance of social benefits other than social transfers in kind in the households' budget and the non-consideration of their importance in the government's budget. Thus, the consideration of the importance of social benefits other than social transfers in kind in the government's budget by the linear model leads to percentage changes that compound those of the multipliers and worsen the situation of the economy in general and of households in particular.

The low percentage changes obtained with both methodologies are also explained by the low absolute changes associated with this measure (households received/the government paid more: $94.85*10^6$€ in 1995 and $221.21*10^6$€ in 2005), especially if compared with those of scenario A (households paid/the government received less: $764.13*10^6$€ in 1995 and $1385.45*10^6$€ in 2005).

5. Concluding Remarks

Constructed from the SNA, the numerical version of the SAM provided us not only with consistent databases for use in the SAM-based models, but also snapshots of the measured reality, from which different social policy measures and their corresponding scenarios could be identified.

From the snapshots of the two years that were studied, it was possible to see that in the functional distribution of income, labour (employees, essentially with lower and medium levels of education) accounted for more than a half, whereas in the institutional distribution of income, households accounted for more than three quarters, with those households where wages and salaries were the main source of income accounting for more than a half. Consequently, households accounted for most of the disposable income (almost 70%), which was almost completely spent on final consumption.

Due to the increased share of the final consumption expenditure of institutions, savings had a relatively lower share in the use of disposable income (20.7% in 1995 and 12.9% in 2005).

Despite the absence of any available information by groups of households, a significant (nominal and real) improvement was noted in *per capita* disposable income and final consumption (expenditure and actual) over the eleven years that were studied. The effects of social policy measures, which were certainly adopted for that improvement of the financial situation of people and therefore of households, were tested with flows of money directly involving government and households – direct taxes and social benefits.

Direct taxes and social benefits are current transfers between households and the government. They are, respectively, the main sources of income and expenditure of the latter, but they are not of great importance in the global budget of households, where the compensation of factors, mainly of labour, was the predominant concern. However, those flows were certainly significant in the budgets of some groups of households, in view of their levels of disposable income. Unfortunately, we have no information available about this, but its global impact can and should be studied.

Two alternative methodologies (SAM-based models or algebraic versions of the SAM) were used to study two scenarios resulting from the application of two social policy measures: scenario A, involving a decrease in direct taxes, in which households paid/the government received less: $764.13*10^6$€ in 1995 and $1385.45*10^6$€ in 2005; and scenario B, involving an increase in social benefits, in which households received/the government paid more: $94.85*10^6$€ in 1995 and $221.21*10^6$€ in 2005.

Although they have some common assumptions, the methodologies that were used – accounting multipliers and the linear model – are different, mainly because one (the accounting multipliers) works with endogenous and exogenous accounts (and fixed average expenditure propensities) while the other (the linear model) works with endogenous and exogenous parameters and variables. This means that, despite the limitations of the fixed parameters and variables of the latter model when shocks are introduced into certain flows of money, it can measure (at least in

part) effects that are not measured by the former and this can lead to different conclusions, which may be closer to the actual reality.

This seems to be empirically confirmed by the performance of the two experiments using those two methodologies and the measurement of their impacts (in terms of percentage changes) on the macroeconomic aggregates and balances. The interpretation of these results suggests that all these impacts were negative when measured with the linear model, whereas, when measured with multipliers, they were negative in scenario A and positive in scenario B. It would therefore seem that such differences are related to the impacts that were not measured with the accounting multipliers. Therefore, in scenario A, at the level of households, the methodology based on the use of multipliers only measured the above-mentioned reduction in the current transfers from households to the government and the consequent increase in its (aggregate and disposable) income, which does not have too much importance in terms of what is left out, because of the relative unimportance of direct taxes in the households' budget. This also explains the differences to be noted in relation to the results of the linear model, which were generally more negative. In turn, in scenario B, at the level of the government, the methodology based on the use of multipliers only measures the above-mentioned increase in current transfers from the government to households and the consequent decrease in the government's (aggregate and disposable) income, which is very important in terms of what is left out, because of the importance of social benefits in the government's budget. Again, this also explains the differences to be noted in comparison with the results of the linear model, which were generally negative.

With both methodologies, the impacts were lower in scenario B due to the lower absolute level of the shock that was introduced into the system.

All these results, and particularly those obtained from the application of the linear model, may provide a plausible explanation for the evolution of the Portuguese economy and its net borrowing, in which the government played an important role.

Therefore, there is no doubt that social policy measures, such as the ones that have been examined in this paper, can contribute to greater social justice and equity if applied to certain groups of people (something that is unfortunately beyond the scope of this paper). However, the impacts of these measures at the macroeconomic level should not be disregarded, lest they be allowed to bias all the conclusions.

In this study, the analysis based on the use of multipliers, their components and the use of *structural path analysis* turned out to be fundamental for understanding the effects resulting from the two experiments, using both methodologies. Thus, research into the linear model will be

continued with the use of that methodology. Three main aspects are set to be studied in the next phase: flexibility of the fixed parameters and exogenous variables (time series for national accounting transactions are being collected in order to investigate econometric adjustments, marginal propensities and elasticities, as well as to obtain more information that will allow for a greater disaggregation of the financial account); consideration of the output produced for own final use and other non-market output; work undertaken with prices and quantities (developing the valuation system, as originally approached in Santos, 2009).

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Appendices

A.1. Accounting multipliers for Portugal in 1995 and 2005

Table A.1.1. Average expenditure propensities matrices – 1995 (Scenario A)

	p1	p2	p3	p4	p5	p6	a1	a2	a3	a4	a5	a6	fle	foa	dicnfc	dicfc	**dicg**	dicnp	diknfc	dikfc	dikg	diknp
$A_n = N*\hat{y}_n^{-1}$																						
p1	0	0	0	0	0	0	0,09	0,08	0	0,01	0	0	0	0	0	0	**0**	0	0,01	0	0	0
p2	0	0	0	0	0	0	0,27	0,52	0,36	0,20	0,07	0,14	0	0	0	0	**0,02**	0	0,48	0,17	0,07	0,66
p3	0	0	0	0	0	0	0	0	0,24	0,01	0,03	0,01	0	0	0	0	**0**	0	0,26	0,21	0,42	0,32
p4	0,14	0,14	0	-0,81	0	0	0,02	0	0	0,13	0,04	0	0	0	0	0	**0**	0	0,02	0,01	0	0
p5	0	0	0	0	0	0	0,02	0,1	0	0,1	0,36	0,10	0	0	0	0	**0**	0	0,10	0,05	0	0
p6	0	0	0	0	0	0	0	0	0	0,01	0,03	0	0	0	0	0	**0,46**	0,88	0,01	0	0	0
a1	0,69	0,00	0,00	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
a2	0,00	0,54	0,00	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
a3	0	0,00	0,96	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
a4	0	0,00	0,00	1,71	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
a5	0,00	0,00	0,00	0,00	0,82	0,00	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
a6	0,00	0,00	0,00	0,00	0,03	0,98	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
fle	0	0	0	0	0	0	0,1	0,2	0,2	0,25	0,20	0,56	0	0	0	0	**0**	0	0	0	0	0
foa	0	0	0	0	0	0	0,51	0,1	0,2	0,29	0,27	0,14	0	0	0	0	**0**	0	0	0	0	0
dicnfc	0	0	0	0	0	0	0	0	0	0	0	0	0	0,33	0	0,08	**0**	0	0	0	0	0
dicfc	0	0	0	0	0	0	0	0	0	0	0	0	0	0,05	0,02	0	**0**	0	0	0	0	0
dicg	0,00	0,07	0,03	0,06	0,05	0,02	-0,02	0	0	0	0	0	0	-0,07	0,16	0,05	**0,22**	0	0	0	0	0
dicnp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0,03**	0	0	0	0	0
diknfc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,70	0	**0**	0	0	0	0,12	0
dikfc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,36	**0**	0	0,04	0,16	0	0
dikg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**-0,05**	0	0,01	0	0,30	0,01
diknp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0,07	0	0	0,05	0
$A_l = L*\hat{y}_n^{-1}$																						
dich	0	0	0	0	0	0	0	0	0	0	0	0	1	0,60	0,10	0,47	**0,31**	0	0	0	0	0
dikh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0,39	0,03	0
dif	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
rw	0,17	0,24	0	0,05	0	0	0	0	0	0	0	0	0	0,1	0,01	0	**0,01**	0	0,06	0,01	0,01	0
Sum																						
	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**1**	1	1	1	1	1

Source: Table 4.

Table A.1.2. Average expenditure propensities matrices – 2005 (Scenario A)

	p1	p2	p3	p4	p5	p6	a1	a2	a3	a4	a5	a6	fle	foa	dicnfc	dicfc	**dicg**	dicnp	diknfc	dikfc	dikg	diknp
$A_n = N*\hat{y}_n^{-1}$																						
p1	0	0	0	0	0	0	0,14	0,06	0	0,01	0	0	0	0	0	0	**0**	0	0	0	0	0
p2	0	0	0	0	0	0	0,27	0,56	0,32	0,19	0,04	0,12	0	0	0	0	**0,03**	0	0,41	0,05	0,11	0,47
p3	0	0	0	0	0	0	0,01	0	0,31	0,01	0,02	0,01	0	0	0	0	**0**	0	0,35	0,12	0,44	0,37
p4	0,20	0,14	0	-0,65	0	0	0,02	0	0	0,13	0,03	0,1	0	0	0	0	**0**	0	0,01	0	0	0,01
p5	0	0	0	0	0	0	0,06	0,1	0	0,15	0,28	0,09	0	0	0	0	**0**	0	0,14	0,01	0,01	0,09
p6	0	0	0	0	0	0	0	0	0	0,01	0,01	0,1	0	0	0	0	**0,50**	0,82	0,01	0	0	0,06
a1	0,62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
a2	0	0,49	0,01	0,02	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
a3	0	0	0,94	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
a4	0	0,01	0,01	1,51	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
a5	0	0	0,00	0,01	0,80	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
a6	0	0	0,01	0,01	0,04	0,97	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
fle	0	0	0	0	0	0	0,11	0,2	0,2	0,29	0,20	0,56	0	0	0	0	**0**	0	0	0	0	0
foa	0	0	0	0	0	0	0,47	0,1	0,1	0,21	0,41	0,13	0	0	0	0	**0**	0	0	0	0	0
dicnfc	0	0	0	0	0	0	0	0	0	0	0	0	0	0,24	0,01	0,11	**0**	0	0	0	0	0
dicfc	0	0	0	0	0	0	0	0	0	0	0	0	0	0,07	0,06	0	**0**	0	0	0	0	0
dicg	-0,02	0,08	0,03	0,06	0,06	0,02	-0,06	0	0	0	0	0	0	-0,01	0,25	0,05	**0,13**	0	0	0	0	0
dicnp	0	0	0	0	0	0	0	0	0	0	0	0	0	0,02	0,03	0	**0,01**	0	0	0	0	0
diknfc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,55	0	**0**	0	0	0	0,17	0
dikfc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,44	**0**	0	0	0,39	0	0
dikg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**-0,08**	0	0	0,02	0,24	0,01
diknp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0,09	0	0,01	0,02	0
$A_l = L*\hat{y}_n^{-1}$																						
dich	0	0	0	0	0	0	0	0	0	0	0	0	1	0,50	0,10	0,37	**0,38**	0,01	0	0	0	0
dikh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0,34	0,03	0
dif	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
rw	0,20	0,28	0	0,04	0	0,01	-0,03	0	0	0	0	0	0	0,18	0,01	0,02	**0,03**	0	0,06	0,06	-0,03	0
Sum																						
	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**1**	1	1	1	1	1

Source: Table 5.

Table A.1.3. Accounting multipliers matrix – 1995 (Scenario A)

	p1	p2	p3	p4	p5	p6	a1	a2	a3	a4	a5	a6	fle	foa	dicnfc	dicfc	**dicg**	dicnp	diknfc	dikfc	dikg	diknp
p1	1,10	0,08	0,04	0,04	0,02	0,02	0,14	0,14	0,04	0,04	0,02	0,02	0,00	0,02	0,05	0,02	**0,013**	0,02	0,07	0,03	0,05	0,07
p2	0,51	1,60	0,81	0,49	0,35	0,32	0,63	0,95	0,83	0,52	0,37	0,32	0,00	0,26	0,79	0,28	**0,182**	0,39	1,08	0,55	0,93	1,34
p3	0,06	0,03	1,34	0,06	0,08	0,04	0,08	0,05	0,35	0,06	0,10	0,04	0,00	0,10	0,28	0,15	**-0,037**	0,07	0,40	0,35	0,90	0,46
p4	0,16	0,16	0,10	0,69	0,08	0,06	0,09	0,12	0,10	0,14	0,08	0,06	0,00	0,03	0,10	0,04	**0,037**	0,07	0,13	0,07	0,11	0,14
p5	0,10	0,13	0,16	0,21	1,50	0,18	0,11	0,17	0,16	0,22	0,58	0,19	0,00	0,07	0,21	0,08	**0,113**	0,22	0,27	0,16	0,17	0,14
p6	0,03	0,09	0,08	0,07	0,12	1,06	0,03	0,07	0,06	0,05	0,09	0,06	0,00	0,02	0,17	0,08	**0,659**	0,95	0,09	0,05	0,08	0,09
a1	0,76	0,06	0,03	0,03	0,02	0,02	1,10	0,10	0,03	0,03	0,02	0,02	0,00	0,01	0,04	0,01	**0,010**	0,02	0,05	0,02	0,04	0,05
a2	0,28	0,88	0,45	0,27	0,22	0,18	0,35	1,52	0,46	0,28	0,21	0,18	0,00	0,14	0,44	0,15	**0,102**	0,22	0,59	0,30	0,51	0,73
a3	0,06	0,03	1,29	0,06	0,08	0,03	0,07	0,05	1,34	0,06	0,09	0,04	0,00	0,10	0,27	0,14	**-0,036**	0,07	0,39	0,33	0,87	0,45
a4	0,27	0,28	0,18	1,18	0,17	0,11	0,16	0,22	0,18	1,25	0,16	0,11	0,00	0,06	0,18	0,06	**0,066**	0,12	0,23	0,13	0,19	0,25
a5	0,09	0,11	0,13	0,17	1,24	0,15	0,09	0,14	0,13	0,18	1,48	0,15	0,00	0,05	0,17	0,07	**0,093**	0,18	0,22	0,13	0,14	0,12
a6	0,04	0,10	0,09	0,08	0,16	1,05	0,03	0,07	0,07	0,06	0,11	1,06	0,00	0,02	0,18	0,08	**0,647**	0,93	0,10	0,06	0,09	0,10
fle	0,24	0,31	0,43	0,44	0,44	0,68	0,26	0,40	0,43	0,45	0,45	0,69	1,00	0,08	0,30	0,13	**0,408**	0,64	0,33	0,20	0,37	0,35
foa	0,55	0,29	0,39	0,47	0,46	0,26	0,70	0,39	0,40	0,49	0,51	0,26	0,00	1,08	0,25	0,10	**0,149**	0,26	0,32	0,19	0,34	0,32
dicnfc	0,18	0,10	0,13	0,16	0,15	0,09	0,23	0,13	0,13	0,16	0,17	0,09	0,00	0,36	1,09	0,12	**0,050**	0,09	0,11	0,06	0,11	0,11
dicfc	0,03	0,02	0,02	0,03	0,03	0,02	0,04	0,02	0,02	0,03	0,03	0,02	0,00	0,06	0,04	1,01	**0,009**	0,03	0,02	0,01	0,02	0,02
dicg	0,03	0,16	0,13	0,10	0,13	0,06	0,03	0,10	0,09	0,06	0,07	0,04	0,00	0,01	0,30	0,12	**1,317**	0,07	0,13	0,07	0,12	0,15
dicnp	0,00	0,01	0,01	0,01	0,01	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,01	0,01	0,01	**0,038**	1,00	0,01	0,00	0,01	0,01
diknfc	0,13	0,07	0,09	0,11	0,11	0,06	0,16	0,09	0,09	0,11	0,12	0,06	0,00	0,25	0,76	0,08	**0,023**	0,06	1,08	0,04	0,24	0,08
dikfc	0,02	0,01	0,01	0,02	0,02	0,01	0,03	0,01	0,02	0,02	0,02	0,01	0,00	0,04	0,06	0,44	**0,005**	0,01	0,06	1,19	0,02	0,01
dikg	0,00	-0,01	-0,01	-0,01	-0,01	0,00	0,00	-0,01	-0,01	0,00	0,00	0,00	0,00	0,00	-0,01	-0,01	**-0,101**	0,00	0,01	0,00	1,43	0,01
diknp	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	**-0,002**	0,07	0,00	0,00	0,07	1,00

Source: Tables 4 and A.1.1.

Table A.1.4. Accounting multipliers matrix – 2005 (Scenario A)

	p1	p2	p3	p4	p5	p6	a1	a2	a3	a4	a5	a6	fle	foa	dicnfc	dicfc	**dicg**	dicnp	diknfc	dikfc	dikg	diknp
p1	1,11	0,05	0,03	0,03	0,01	0,01	0,17	0,10	0,03	0,03	0,01	0,01	0,00	0,01	0,02	0,01	**0,007**	0,02	0,04	0,01	0,03	0,04
p2	0,44	1,53	0,72	0,40	0,23	0,26	0,58	0,94	0,74	0,42	0,23	0,26	0,00	0,16	0,57	0,20	**0,120**	0,34	0,93	0,30	0,88	1,03
p3	0,06	0,03	1,44	0,06	0,08	0,03	0,08	0,05	0,47	0,06	0,09	0,04	0,00	0,09	0,29	0,17	**-0,067**	0,08	0,54	0,32	0,98	0,57
p4	0,21	0,17	0,10	0,75	0,06	0,07	0,11	0,14	0,10	0,15	0,06	0,07	0,00	0,02	0,08	0,03	**0,039**	0,08	0,13	0,04	0,12	0,13
p5	0,16	0,15	0,17	0,27	1,37	0,17	0,17	0,20	0,17	0,29	0,42	0,17	0,00	0,06	0,21	0,07	**0,090**	0,23	0,32	0,08	0,21	0,26
p6	0,03	0,11	0,09	0,09	0,12	1,10	0,05	0,09	0,08	0,07	0,09	0,09	0,00	0,07	0,25	0,08	**0,642**	0,94	0,11	0,04	0,10	0,16
a1	0,69	0,04	0,02	0,02	0,01	0,01	1,11	0,06	0,02	0,02	0,01	0,01	0,00	0,00	0,02	0,01	**0,005**	0,01	0,02	0,01	0,02	0,03
a2	0,22	0,75	0,37	0,21	0,13	0,13	0,29	1,46	0,37	0,21	0,12	0,13	0,00	0,08	0,28	0,10	**0,061**	0,17	0,46	0,15	0,45	0,51
a3	0,06	0,03	1,36	0,06	0,08	0,03	0,08	0,05	1,45	0,06	0,09	0,03	0,00	0,08	0,28	0,16	**-0,063**	0,08	0,51	0,30	0,92	0,53
a4	0,33	0,28	0,17	1,14	0,16	0,12	0,18	0,23	0,16	1,24	0,12	0,12	0,00	0,04	0,14	0,05	**0,064**	0,13	0,21	0,07	0,20	0,23
a5	0,13	0,12	0,14	0,22	1,09	0,14	0,14	0,16	0,14	0,23	1,34	0,14	0,00	0,05	0,17	0,05	**0,072**	0,18	0,26	0,07	0,17	0,21
a6	0,04	0,11	0,11	0,11	0,17	1,08	0,05	0,09	0,09	0,09	0,11	1,10	0,00	0,08	0,26	0,08	**0,627**	0,93	0,12	0,05	0,12	0,18
fle	0,27	0,30	0,49	0,49	0,40	0,69	0,29	0,40	0,50	0,51	0,39	0,70	1,00	0,09	0,32	0,12	**0,380**	0,64	0,37	0,15	0,43	0,40
foa	0,49	0,23	0,30	0,39	0,53	0,24	0,66	0,33	0,30	0,41	0,61	0,24	0,00	1,06	0,20	0,07	**0,126**	0,25	0,28	0,10	0,28	0,28
dicnfc	0,12	0,06	0,08	0,10	0,13	0,06	0,17	0,08	0,08	0,10	0,16	0,06	0,00	0,27	1,06	0,13	**0,032**	0,07	0,07	0,03	0,07	0,07
dicfc	0,04	0,02	0,03	0,04	0,05	0,02	0,06	0,03	0,03	0,04	0,06	0,02	0,00	0,10	0,08	1,02	**0,012**	0,03	0,03	0,01	0,03	0,03
dicg	0,03	0,18	0,15	0,13	0,17	0,07	0,04	0,13	0,12	0,09	0,11	0,05	0,00	0,09	0,39	0,12	**1,187**	0,10	0,15	0,05	0,15	0,16
dicnp	0,01	0,01	0,01	0,01	0,02	0,01	0,02	0,01	0,01	0,01	0,02	0,01	0,00	0,03	0,04	0,01	**0,020**	1,02	0,01	0,00	0,01	0,01
diknfc	0,07	0,03	0,04	0,05	0,07	0,03	0,09	0,04	0,04	0,06	0,08	0,03	0,00	0,15	0,58	0,07	**-0,004**	0,03	1,04	0,02	0,27	0,04
dikfc	0,03	0,02	0,02	0,03	0,03	0,02	0,04	0,02	0,02	0,03	0,04	0,02	0,00	0,07	0,06	0,73	**0,008**	0,02	0,02	1,64	0,02	0,02
dikg	0,00	-0,02	-0,01	-0,01	-0,02	-0,01	0,00	-0,01	-0,01	-0,01	-0,01	-0,01	0,00	-0,01	-0,04	0,00	**-0,123**	-0,01	-0,01	0,03	1,30	0,00
diknp	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,01	**-0,001**	0,09	0,00	0,02	0,03	1,00

Source: Tables 5 and A.1.2.

Table A.1.5. Additional intragroup or direct effects matrix (M_1 - I) – 1995 (Scenario A)

	p1	p2	p3	p4	p5	p6	a1	a2	a3	a4	a5	a6	fle	foa	dicnfc	dicfc	**dicg**	dicnp	diknfc	dikfc	dikg	diknp
p1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
p2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
p3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
p4	0	0	0	-0,45	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
p5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
p6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
a1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
a2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
a3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
a4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
a5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
a6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
fle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
foa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
dicnfc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,004	0	**0**	0	0	0	0	0
dicfc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,01	**0**	0	0	0	0	0
dicg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0,284**	0	0	0	0	0
dicnp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0,00	0	0	0	0
diknfc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
dikfc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0,19	0	0
dikg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0,44	0
diknp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0

Source: Table A.1.1.

Table A.1.6. Additional intragroup or direct effects matrix (M_1 - I) – 2005 (Scenario A)

	p1	p2	p3	p4	p5	p6	a1	a2	a3	a4	a5	a6	fle	foa	dicnfc	dicfc	**dicg**	dicnp	diknfc	dikfc	dikg	diknp
p1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
p2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
p3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
p4	0	0	0	-0,39	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
p5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
p6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
a1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
a2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
a3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
a4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
a5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
a6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
fle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
foa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
dicnfc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,007	0	**0**	0	0	0	0	0
dicfc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,01	**0**	0	0	0	0	0
dicg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0,151**	0	0	0	0	0
dicnp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0,01	0	0	0	0
diknfc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0
dikfc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0,63	0	0
dikg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0,31	0
diknp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0

Source: Table A.1.2.

Table A.1.7. Additional intergroup or indirect effects matrix (M_2 - I) * M_1 – 1995 (Scenario A)

	p1	p2	p3	p4	p5	p6	a1	a2	a3	a4	a5	a6	fle	foa	dicnfc	dicfc	**dicg**	dicnp	diknfc	dikfc	dikg	diknp
p1	0,00	0,00	0,00	0,00	0,00	0,00	0,01	0,01	0,01	0,01	0,01	0,00	0,00	0,01	0,00	0,00	**0,005**	0,01	0,02	0,01	0,01	0,02
p2	0,08	0,05	0,05	0,05	0,05	0,03	0,06	0,08	0,10	0,06	0,06	0,04	0,00	0,07	0,04	0,03	**0,043**	0,07	0,13	0,09	0,16	0,15
p3	0,03	0,01	0,01	0,02	0,02	0,01	0,01	0,01	0,02	0,01	0,01	0,00	0,00	0,02	0,01	0,00	**0,003**	0,01	0,02	0,02	0,04	0,02
p4	0,01	0,02	0,02	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,00	0,00	0,02	0,01	**0,004**	0,01	0,01	0,01	0,02	0,01
p5	0,02	0,02	0,02	0,02	0,02	0,01	0,02	0,03	0,03	0,03	0,05	0,02	0,00	0,02	0,02	0,01	**0,026**	0,04	0,04	0,03	0,03	0,04
p6	0,02	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,00	0,01	0,01	0,00	**0,006**	0,01	0,02	0,01	0,02	0,02
a1	0,01	0,01	0,01	0,01	0,01	0,01	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,01	0,00	**0,001**	0,00	0,00	0,00	0,01	0,00
a2	0,05	0,07	0,12	0,07	0,06	0,04	0,05	0,03	0,03	0,03	0,03	0,02	0,00	0,01	0,12	0,04	**-0,001**	0,02	0,03	0,01	0,06	0,03
a3	0,01	0,01	0,06	0,01	0,02	0,01	0,04	0,01	0,01	0,02	0,02	0,01	0,00	0,01	0,05	0,02	**-0,008**	0,01	0,01	0,00	0,02	0,01
a4	0,02	0,02	0,02	0,03	0,03	0,02	0,03	0,04	0,04	0,03	0,02	0,02	0,00	0,02	0,03	0,01	**0,015**	0,02	0,05	0,03	0,05	0,06
a5	0,02	0,03	0,04	0,05	0,09	0,04	0,02	0,02	0,01	0,01	0,01	0,01	0,00	0,00	0,05	0,02	**0,005**	0,01	0,02	0,01	0,02	0,02
a6	0,00	0,02	0,02	0,01	0,02	0,01	0,02	0,01	0,01	0,01	0,01	0,01	0,00	0,00	0,03	0,01	**0,002**	0,01	0,01	0,00	0,02	0,01
fle	0,02	0,03	0,03	0,02	0,02	0,01	0,02	0,05	0,06	0,04	0,06	0,03	0,00	0,05	0,03	0,02	**0,040**	0,07	0,08	0,05	0,09	0,09
foa	0,03	0,03	0,03	0,02	0,02	0,01	0,03	0,05	0,06	0,04	0,06	0,03	0,00	0,04	0,03	0,02	**0,034**	0,06	0,07	0,05	0,08	0,08
dicnfc	0,02	0,02	0,03	0,03	0,04	0,02	0,01	0,01	0,01	0,01	0,01	0,00	0,00	0,00	0,04	0,01	**0,002**	0,01	0,01	0,01	0,02	0,02
dicfc	0,00	0,00	0,01	0,00	0,01	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,01	0,00	**0,001**	0,00	0,00	0,00	0,00	0,00
dicg	0,01	0,01	0,02	0,01	0,01	0,01	0,02	0,01	0,01	0,01	0,01	0,01	0,00	0,00	0,02	0,01	**0,006**	0,01	0,01	0,01	0,02	0,01
dicnp	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	**0,000**	0,00	0,00	0,00	0,00	0,00
diknfc	0,01	0,01	0,01	0,01	0,01	0,00	0,02	0,03	0,02	0,02	0,03	0,01	0,00	0,00	0,01	0,00	**0,021**	0,03	0,03	0,02	0,03	0,03
dikfc	0,01	0,00	0,00	0,01	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	**0,002**	0,00	0,00	0,00	0,00	0,00
dikg	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	**0,000**	0,00	0,00	0,00	0,00	0,00
diknp	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	**0,000**	0,00	0,00	0,00	0,00	0,00

Source: Table A.1.1.

Table A.1.8. Additional intergroup or indirect effects matrix (M_2 - I) * M_1- 2005 (Scenario A)

	p1	p2	p3	p4	p5	p6	a1	a2	a3	a4	a5	a6	fle	foa	dicnfc	dicfc	**dicg**	dicnp	diknfc	dikfc	dikg	diknp
p1	0,00	0,00	0,00	0,00	0,00	0,00	0,01	0,01	0,01	0,00	0,00	0,00	0,00	0,00	0,00	0,00	**0,003**	0,00	0,01	0,00	0,01	0,01
p2	0,05	0,03	0,03	0,03	0,03	0,02	0,06	0,08	0,10	0,05	0,04	0,03	0,00	0,05	0,02	0,03	**0,033**	0,06	0,13	0,05	0,14	0,14
p3	0,02	0,00	0,01	0,01	0,02	0,01	0,01	0,01	0,03	0,01	0,01	0,00	0,00	0,02	0,00	0,01	**0,002**	0,01	0,04	0,02	0,06	0,04
p4	0,02	0,02	0,02	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,00	0,00	0,00	0,02	0,01	**0,004**	0,01	0,01	0,01	0,02	0,01
p5	0,03	0,02	0,02	0,01	0,01	0,01	0,02	0,03	0,03	0,03	0,03	0,02	0,00	0,02	0,01	0,01	**0,022**	0,04	0,04	0,01	0,04	0,04
p6	0,02	0,01	0,01	0,01	0,02	0,01	0,01	0,02	0,02	0,01	0,01	0,01	0,00	0,01	0,01	0,01	**0,010**	0,02	0,02	0,01	0,02	0,02
a1	0,01	0,01	0,01	0,01	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,01	0,00	**0,000**	0,00	0,00	0,00	0,00	0,00
a2	0,04	0,05	0,10	0,05	0,03	0,03	0,02	0,02	0,02	0,01	0,02	0,01	0,00	0,01	0,08	0,03	**-0,006**	0,02	0,02	0,01	0,05	0,02
a3	0,01	0,01	0,09	0,01	0,02	0,01	0,03	0,01	0,01	0,01	0,02	0,01	0,00	0,00	0,06	0,03	**-0,014**	0,01	0,00	0,01	0,03	0,01
a4	0,02	0,02	0,02	0,03	0,02	0,02	0,03	0,04	0,04	0,02	0,01	0,01	0,00	0,01	0,03	0,01	**0,011**	0,02	0,05	0,02	0,05	0,05
a5	0,02	0,03	0,04	0,05	0,06	0,03	0,02	0,02	0,01	0,01	0,01	0,01	0,00	0,00	0,05	0,01	**0,002**	0,01	0,02	0,01	0,03	0,02
a6	0,02	0,02	0,03	0,03	0,03	0,02	0,02	0,01	0,01	0,01	0,02	0,01	0,00	0,01	0,04	0,01	**0,000**	0,01	0,01	0,00	0,02	0,01
fle	0,03	0,03	0,03	0,02	0,01	0,01	0,04	0,06	0,07	0,05	0,04	0,03	0,00	0,05	0,03	0,03	**0,044**	0,08	0,09	0,04	0,09	0,10
foa	0,03	0,03	0,02	0,01	0,01	0,01	0,04	0,05	0,05	0,04	0,04	0,03	0,00	0,03	0,02	0,02	**0,033**	0,06	0,07	0,02	0,06	0,07
dicnfc	0,02	0,01	0,02	0,03	0,03	0,02	0,01	0,01	0,01	0,00	0,00	0,00	0,00	0,00	0,02	0,01	**0,001**	0,01	0,01	0,00	0,01	0,01
dicfc	0,01	0,00	0,01	0,01	0,01	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,01	0,00	**0,001**	0,00	0,00	0,00	0,01	0,00
dicg	0,01	0,02	0,03	0,02	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,00	0,00	0,02	0,01	**0,004**	0,01	0,02	0,01	0,02	0,02
dicnp	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	**0,001**	0,00	0,00	0,00	0,00	0,00
diknfc	0,01	0,01	0,00	0,00	0,00	0,00	0,01	0,01	0,01	0,01	0,02	0,01	0,00	0,00	0,00	0,00	**0,010**	0,02	0,02	0,01	0,01	0,02
dikfc	0,01	0,00	0,00	0,00	0,00	0,00	0,01	0,01	0,00	0,01	0,01	0,00	0,00	0,00	0,00	0,00	**0,004**	0,01	0,01	0,00	0,01	0,01
dikg	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	**-0,001**	0,00	0,00	0,00	0,00	0,00
diknp	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	**0,000**	0,00	0,00	0,00	0,00	0,00

Source: Table A.1.2.

Table A.1.9. Additional extragroup or cross effects matrix (M_3 - I) * M_2 * M_1- 1995 (Scenario A)

	p1	p2	p3	p4	p5	p6	a1	a2	a3	a4	a5	a6	fle	foa	dicnfc	dicfc	**dicg**	dicnp	diknfc	dikfc	dikg	diknp
p1	0,09	0,08	0,04	0,04	0,02	0,02	0,13	0,13	0,03	0,04	0,02	0,02	0,00	0,01	0,05	0,01	**0,008**	0,02	0,05	0,02	0,04	0,05
p2	0,43	0,55	0,76	0,44	0,31	0,29	0,58	0,87	0,73	0,46	0,31	0,29	0,00	0,19	0,75	0,25	**0,140**	0,31	0,94	0,46	0,77	1,18
p3	0,03	0,02	0,33	0,04	0,06	0,03	0,07	0,04	0,33	0,06	0,08	0,03	0,00	0,08	0,27	0,14	**-0,041**	0,06	0,38	0,33	0,86	0,44
p4	0,14	0,15	0,08	0,12	0,07	0,05	0,08	0,11	0,09	0,13	0,07	0,06	0,00	0,03	0,08	0,03	**0,033**	0,06	0,12	0,06	0,09	0,13
p5	0,08	0,11	0,14	0,20	0,49	0,17	0,09	0,15	0,13	0,19	0,54	0,17	0,00	0,05	0,19	0,08	**0,087**	0,17	0,23	0,14	0,13	0,11
p6	0,02	0,09	0,07	0,06	0,11	0,06	0,02	0,06	0,05	0,05	0,08	0,05	0,00	0,01	0,17	0,07	**0,653**	0,93	0,07	0,04	0,06	0,07
a1	0,75	0,05	0,02	0,02	0,01	0,01	0,09	0,10	0,03	0,03	0,02	0,02	0,00	0,01	0,02	0,01	**0,009**	0,02	0,05	0,02	0,03	0,05
a2	0,23	0,81	0,33	0,21	0,16	0,14	0,30	0,49	0,43	0,25	0,18	0,16	0,00	0,14	0,32	0,11	**0,103**	0,19	0,56	0,29	0,45	0,70
a3	0,05	0,03	1,23	0,05	0,06	0,03	0,04	0,04	0,33	0,04	0,07	0,03	0,00	0,09	0,22	0,12	**-0,027**	0,06	0,38	0,33	0,85	0,44
a4	0,26	0,26	0,15	1,15	0,14	0,09	0,13	0,17	0,14	0,22	0,14	0,10	0,00	0,04	0,15	0,05	**0,051**	0,10	0,18	0,10	0,15	0,19
a5	0,07	0,08	0,10	0,13	1,14	0,11	0,07	0,13	0,12	0,17	0,47	0,15	0,00	0,05	0,12	0,05	**0,088**	0,17	0,20	0,13	0,12	0,10
a6	0,04	0,08	0,06	0,07	0,14	1,03	0,01	0,06	0,06	0,05	0,10	0,05	0,00	0,02	0,14	0,07	**0,646**	0,92	0,09	0,05	0,07	0,09
fle	0,22	0,27	0,41	0,42	0,42	0,67	0,24	0,34	0,37	0,41	0,40	0,66	0,00	0,03	0,27	0,11	**0,368**	0,57	0,25	0,15	0,29	0,26
foa	0,52	0,26	0,36	0,45	0,44	0,25	0,67	0,34	0,34	0,45	0,45	0,24	0,00	0,04	0,22	0,08	**0,115**	0,21	0,24	0,14	0,26	0,24
dicnfc	0,16	0,07	0,10	0,12	0,11	0,07	0,23	0,12	0,12	0,16	0,16	0,08	0,00	0,36	0,05	0,11	**0,048**	0,08	0,09	0,06	0,10	0,09
dicfc	0,03	0,01	0,02	0,02	0,02	0,01	0,04	0,02	0,02	0,03	0,03	0,01	0,00	0,06	0,03	0,01	**0,008**	0,02	0,02	0,01	0,02	0,02
dicg	0,02	0,15	0,11	0,09	0,12	0,05	0,01	0,08	0,08	0,05	0,06	0,03	0,00	0,01	0,29	0,12	**0,027**	0,06	0,12	0,06	0,11	0,13
dicnp	0,00	0,01	0,00	0,00	0,01	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,01	0,01	0,01	**0,038**	0,00	0,00	0,00	0,00	0,00
diknfc	0,11	0,05	0,08	0,10	0,10	0,06	0,14	0,07	0,07	0,09	0,09	0,05	0,00	0,25	0,76	0,08	**0,002**	0,03	0,04	0,02	0,22	0,05
dikfc	0,01	0,01	0,01	0,01	0,01	0,01	0,02	0,01	0,01	0,02	0,02	0,01	0,00	0,04	0,06	0,44	**0,003**	0,01	0,06	0,00	0,02	0,01
dikg	0,00	-0,01	-0,01	0,00	-0,01	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,01	-0,01	-0,01	**-0,100**	0,00	0,01	0,00	0,00	0,01
diknp	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	**-0,002**	0,07	0,00	0,00	0,07	0,00

Source: Table A.1.1.

Table A.1.10. Additional extragroup or cross effects matrix (M_3 - I) * M_2 * M_1- 2005 (Scenario A)

	p1	p2	p3	p4	p5	p6	a1	a2	a3	a4	a5	a6	fle	foa	dicnfc	dicfc	**dicg**	dicnp	diknfc	dikfc	dikg	diknp
p1	0,11	0,05	0,02	0,03	0,01	0,01	0,17	0,09	0,02	0,02	0,01	0,01	0,00	0,00	0,02	0,01	**0,004**	0,01	0,03	0,01	0,02	0,03
p2	0,39	0,49	0,68	0,38	0,20	0,24	0,52	0,86	0,64	0,37	0,19	0,23	0,00	0,11	0,54	0,18	**0,088**	0,28	0,80	0,25	0,74	0,89
p3	0,04	0,02	0,44	0,04	0,06	0,03	0,08	0,04	0,44	0,05	0,08	0,03	0,00	0,07	0,29	0,16	**-0,069**	0,07	0,50	0,30	0,92	0,53
p4	0,20	0,16	0,07	0,13	0,06	0,06	0,10	0,13	0,09	0,14	0,06	0,07	0,00	0,02	0,06	0,02	**0,035**	0,06	0,11	0,04	0,10	0,12
p5	0,13	0,12	0,15	0,26	0,35	0,16	0,15	0,17	0,14	0,26	0,39	0,15	0,00	0,04	0,20	0,06	**0,067**	0,19	0,27	0,07	0,17	0,22
p6	0,02	0,10	0,08	0,08	0,10	0,09	0,03	0,07	0,06	0,06	0,08	0,08	0,00	0,07	0,25	0,07	**0,632**	0,92	0,08	0,03	0,08	0,14
a1	0,68	0,03	0,01	0,01	0,01	0,01	0,11	0,06	0,02	0,02	0,01	0,01	0,00	0,00	0,01	0,00	**0,005**	0,01	0,02	0,01	0,02	0,02
a2	0,18	0,70	0,27	0,16	0,09	0,10	0,26	0,44	0,35	0,20	0,10	0,12	0,00	0,07	0,20	0,08	**0,067**	0,15	0,44	0,14	0,40	0,49
a3	0,05	0,02	1,27	0,04	0,06	0,02	0,05	0,04	0,44	0,05	0,07	0,03	0,00	0,08	0,21	0,13	**-0,048**	0,07	0,50	0,29	0,89	0,53
a4	0,32	0,26	0,14	1,11	0,14	0,10	0,14	0,18	0,13	0,22	0,10	0,11	0,00	0,03	0,11	0,04	**0,053**	0,11	0,17	0,05	0,15	0,18
a5	0,11	0,09	0,10	0,17	1,04	0,10	0,12	0,14	0,12	0,22	0,33	0,13	0,00	0,04	0,12	0,04	**0,070**	0,17	0,24	0,06	0,15	0,19
a6	0,03	0,09	0,08	0,08	0,14	1,06	0,03	0,08	0,08	0,07	0,09	0,09	0,00	0,07	0,22	0,07	**0,627**	0,92	0,12	0,04	0,10	0,17
fle	0,24	0,26	0,47	0,47	0,38	0,68	0,25	0,34	0,43	0,46	0,35	0,67	0,00	0,04	0,30	0,09	**0,336**	0,56	0,28	0,11	0,34	0,31
foa	0,46	0,20	0,28	0,37	0,52	0,23	0,63	0,29	0,25	0,37	0,57	0,22	0,00	0,03	0,18	0,06	**0,092**	0,19	0,21	0,08	0,22	0,21
dicnfc	0,11	0,04	0,06	0,07	0,11	0,05	0,16	0,08	0,07	0,10	0,15	0,06	0,00	0,27	0,03	0,12	**0,031**	0,06	0,06	0,02	0,06	0,06
dicfc	0,04	0,02	0,02	0,03	0,04	0,02	0,06	0,03	0,02	0,03	0,05	0,02	0,00	0,10	0,07	0,01	**0,011**	0,03	0,02	0,01	0,02	0,02
dicg	0,01	0,16	0,12	0,11	0,16	0,06	0,02	0,11	0,11	0,08	0,09	0,05	0,00	0,09	0,36	0,11	**0,032**	0,08	0,14	0,05	0,13	0,14
dicnp	0,01	0,01	0,01	0,01	0,01	0,01	0,02	0,01	0,01	0,01	0,02	0,01	0,00	0,03	0,04	0,01	**0,020**	0,01	0,01	0,00	0,01	0,01
diknfc	0,06	0,02	0,04	0,05	0,07	0,03	0,08	0,03	0,03	0,04	0,07	0,02	0,00	0,15	0,58	0,07	**-0,014**	0,02	0,02	0,01	0,25	0,02
dikfc	0,03	0,01	0,02	0,02	0,03	0,01	0,04	0,02	0,02	0,02	0,03	0,01	0,00	0,07	0,06	0,73	**0,004**	0,02	0,02	0,00	0,02	0,01
dikg	0,00	-0,02	-0,01	-0,01	-0,01	-0,01	0,00	-0,01	-0,01	-0,01	-0,01	0,00	0,00	-0,01	-0,04	0,00	**-0,122**	-0,01	-0,01	0,03	-0,01	0,00
diknp	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,01	**-0,001**	0,09	0,00	0,02	0,03	0,00

Source: Table A.1.2.

Table A.1.11. Average expenditure propensities matrices – 1995 (Scenario B)

	p1	p2	p3	p4	p5	p6	a1	a2	a3	a4	a5	a6	fle	foa	**dich**	dicnfc	dicfc	dicnp	dikh	diknfc	dikfc	diknp
$A_n = N * \hat{y}_n^{-1}$																						
p1	0	0	0	0	0	0	0,09	0,08	0	0,01	0	0	0	0	**0,03**	0	0	0	0,04	0,01	0	0
p2	0	0	0	0	0	0	0,27	0,52	0,36	0,20	0,07	0,14	0	0	**0,37**	0	0	0	0,15	0,48	0,17	0,66
p3	0	0	0	0	0	0	0,00	0,00	0,24	0,01	0,03	0,01	0	0	**0,00**	0	0	0	0,81	0,26	0,21	0,32
p4	0,14	0,14	0	-0,81	0	0	0,02	0,02	0,02	0,13	0,04	0,04	0	0	**0,07**	0	0	0	0,02	0,02	0,01	0
p5	0	0	0	0	0	0	0,02	0,05	0,04	0,10	0,36	0,10	0	0	**0,08**	0	0	0,03	0,10	0,10	0,05	0
p6	0	0	0	0	0	0	0	0,01	0	0,01	0,03	0,03	0	0	**0,08**	0	0	0,88	0,01	0,01	0	0
a1	0,69	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
a2	0	0,54	0,005	0	0,02	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
a3	0	0	0,96	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
a4	0	0	0	1,71	0,03	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
a5	0	0	0	0	0,82	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
a6	0	0	0	0	0,03	0,98	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
fle	0	0	0	0	0	0	0,10	0,17	0,18	0,25	0,20	0,56	0	0	**0**	0	0	0	0	0	0	0
foa	0	0	0	0	0	0	0,51	0,14	0,16	0,29	0,27	0,14	0	0	**0**	0	0	0	0	0	0	0
dich	0	0	0	0	0	0	0	0	0	0	0	0	1,00	0,60	**0,01**	0,10	0,47	0,01	0	0	0	0
dicnfc	0	0	0	0	0	0	0	0	0	0	0	0	0	0,33	**0,02**	0	0,08	0	0	0	0	0
dicfc	0	0	0	0	0	0	0	0	0	0	0	0	0	0,05	**0,03**	0,02	0,01	0,01	0	0	0	0
dicnp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0,01	0	0	0	0	0
dikh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0,10**	0	0	0	0	0	0,39	0
diknfc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0,70	0	0	0	0	0	0
dikfc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0,36	0	0	0,04	0,16	0
diknp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0,07	0	0	0	0
Al = L * Y^n-1																						
dicg	0	0,07	0,03	0,06	0,05	0,02	-0,02	0	0	0	0	0	0	-0,07	**0,18**	0,16	0,05	0	0	0	0	0
dikg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0,01	0,01	0,00	0,01
dif	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
rw	0,17	0,24	0,002	0,05	0,05	0,01	-0,01	0	0	0	0	0	0	0,1	**0,02**	0,01	0,01	0	-0,14	0,06	0,01	0
Sum																						
	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**1**	1	1	1	1	1	1	1

Source: Table 4.

Table A.1.12. Average expenditure propensities matrices – 2005 (Scenario B)

	p1	p2	p3	p4	p5	p6	a1	a2	a3	a4	a5	a6	fle	foa	**dich**	dicnfc	dicfc	dicnp	dikh	diknfc	dikfc	diknp
$A_n = N * \hat{y}_n^{-1}$																						
p1	0	0	0	0	0	0	0,14	0,06	0	0,01	0	0	0	0	**0,03**	0	0	0	0,03	0	0	0
p2	0	0	0	0	0	0	0,27	0,56	0,32	0,19	0,04	0,12	0	0	**0,34**	0	0	0,01	0,11	0,41	0,05	0,47
p3	0	0	0	0	0	0	0,01	0,01	0,31	0,01	0,02	0,01	0	0	**0,00**	0	0	0	0,82	0,35	0,12	0,37
p4	0,20	0,14	0	-0,65	0	0	0,02	0,03	0,01	0,13	0,03	0,05	0	0	**0,10**	0	0	0	0,02	0,01	0	0,01
p5	0	0	0	0	0	0	0,06	0,07	0,04	0,15	0,28	0,09	0	0	**0,11**	0	0	0,04	0,18	0,14	0,01	0,09
p6	0	0	0	0	0	0	0	0,00	0	0,01	0,01	0,05	0	0	**0,08**	0	0	0,82	0,02	0,01	0	0,06
a1	0,62	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
a2	0	0,49	0,01	0	0,01	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
a3	0	0	0,94	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
a4	0	0,01	0,01	1,51	0,04	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
a5	0	0	0	0	0,80	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
a6	0	0	0,01	0	0,04	0,97	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
fle	0	0	0	0	0	0	0,11	0,16	0,22	0,29	0,20	0,56	0	0	**0**	0	0	0	0	0	0	0
foa	0	0	0	0	0	0	0,47	0,12	0,10	0,21	0,41	0,13	0	0	**0**	0	0	0	0	0	0	0
dich	0	0	0	0	0	0	0	0	0	0	0	0	1,00	0,50	**0,01**	0,10	0,37	0,01	0	0	0	0
dicnfc	0	0	0	0	0	0	0	0	0	0	0	0	0	0,24	**0,01**	0,01	0,11	0	0	0	0	0
dicfc	0	0	0	0	0	0	0	0	0	0	0	0	0	0,07	**0,02**	0,06	0,01	0,01	0	0	0	0
dicnp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0,01**	0,03	0	0,01	0	0	0	0
dikh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0,07**	0	0	0	0	0	0,34	0
diknfc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0,55	0	0	0	0	0	0
dikfc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0,44	0	0	0,00	0,39	0
diknp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0,09	0	0	0,01	0
Al = L * Y^n-1																						
dicg	-0,02	0,08	0,03	0,06	0,06	0,02	-0,06	0	0	0	0	0	0	-0,01	**0,20**	0,25	0,05	0,01	0	0	0	0
dikg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0,02	0	0,02	0,01
dif	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
rw	0,20	0,28	0	0,04	0,04	0,01	-0,03	0	0	0	0	0	0	0,18	**0,02**	0,01	0,02	0	-0,19	0,06	0,06	0
Sum																						
	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**1**	1	1	1	1	1	1	1

Source: Table 5.

Table A.1.13. Accounting multipliers matrix – 1995 (Scenario B)

	p1	p2	p3	p4	p5	p6	a1	a2	a3	a4	a5	a6	fle	foa	**dich**	dicnfc	dicfc	dicnp	dikh	diknfc	dikfc	diknp
p1	1,19	0,15	0,15	0,15	0,13	0,15	0,25	0,24	0,15	0,16	0,14	0,16	0,16	0,14	**0,158**	0,13	0,15	0,15	0,20	0,15	0,17	0,15
p2	1,41	2,25	1,78	1,56	1,39	1,57	1,72	1,88	1,83	1,65	1,53	1,61	1,52	1,48	**1,521**	1,48	1,57	1,59	2,02	1,83	1,93	2,07
p3	0,25	0,18	1,55	0,29	0,30	0,30	0,31	0,25	0,57	0,31	0,34	0,30	0,31	0,36	**0,310**	0,45	0,57	0,32	1,33	0,57	1,06	0,62
p4	0,32	0,28	0,27	0,87	0,26	0,28	0,28	0,28	0,28	0,34	0,28	0,29	0,26	0,24	**0,265**	0,22	0,25	0,28	0,32	0,26	0,29	0,27
p5	0,37	0,32	0,44	0,52	1,80	0,55	0,43	0,45	0,45	0,56	0,92	0,57	0,45	0,42	**0,450**	0,40	0,46	0,57	0,61	0,48	0,58	0,35
p6	0,13	0,10	0,14	0,16	0,18	1,19	0,15	0,14	0,14	0,17	0,21	0,20	0,19	0,16	**0,193**	0,11	0,17	1,06	0,17	0,12	0,15	0,11
a1	0,83	0,11	0,11	0,11	0,10	0,11	1,18	0,17	0,11	0,12	0,11	0,11	0,12	0,10	**0,115**	0,09	0,11	0,11	0,15	0,11	0,13	0,11
a2	0,78	1,23	0,98	0,86	0,79	0,87	0,95	2,03	1,01	0,91	0,85	0,89	0,84	0,81	**0,838**	0,82	0,86	0,88	1,12	1,01	1,07	1,14
a3	0,24	0,17	1,49	0,28	0,29	0,29	0,30	0,24	1,54	0,29	0,33	0,29	0,30	0,35	**0,298**	0,43	0,55	0,31	1,28	0,55	1,02	0,59
a4	0,55	0,48	0,47	1,50	0,49	0,49	0,49	0,50	0,49	1,60	0,51	0,50	0,46	0,43	**0,465**	0,39	0,45	0,49	0,56	0,46	0,52	0,47
a5	0,31	0,26	0,36	0,43	1,48	0,46	0,35	0,37	0,37	0,46	1,76	0,47	0,37	0,35	**0,371**	0,33	0,38	0,47	0,51	0,40	0,48	0,29
a6	0,14	0,11	0,16	0,18	0,24	1,19	0,17	0,15	0,16	0,19	0,24	1,22	0,21	0,18	**0,206**	0,13	0,18	1,06	0,19	0,14	0,17	0,13
fle	0,54	0,48	0,72	0,77	0,75	1,09	0,62	0,68	0,75	0,82	0,83	1,11	1,51	0,49	**0,512**	0,46	0,54	1,02	0,78	0,55	0,70	0,56
foa	0,84	0,49	0,69	0,81	0,78	0,66	1,05	0,68	0,72	0,85	0,88	0,68	0,49	1,47	**0,492**	0,45	0,53	0,65	0,77	0,55	0,69	0,55
dich	1,11	0,82	1,21	1,33	1,29	1,55	1,34	1,16	1,24	1,41	1,43	1,59	1,87	1,48	**1,875**	0,89	1,41	1,49	1,32	0,94	1,17	0,94
dicnfc	0,30	0,18	0,26	0,30	0,29	0,25	0,38	0,25	0,26	0,31	0,32	0,26	0,20	0,52	**0,202**	1,18	0,29	0,25	0,28	0,20	0,25	0,20
dicfc	0,08	0,05	0,08	0,09	0,08	0,08	0,10	0,07	0,08	0,09	0,09	0,09	0,08	0,13	**0,083**	0,08	1,08	0,09	0,08	0,06	0,07	0,06
dicnp	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	**0,011**	0,01	0,02	1,01	0,01	0,01	0,01	0,01
dikh	0,13	0,10	0,14	0,16	0,15	0,18	0,16	0,14	0,15	0,17	0,17	0,18	0,21	0,18	**0,212**	0,12	0,33	0,17	1,15	0,13	0,60	0,11
diknfc	0,21	0,13	0,18	0,21	0,20	0,18	0,26	0,18	0,18	0,22	0,23	0,18	0,14	0,36	**0,141**	0,82	0,20	0,17	0,20	1,14	0,18	0,14
dikfc	0,05	0,03	0,04	0,05	0,05	0,04	0,06	0,04	0,04	0,05	0,05	0,05	0,04	0,07	**0,043**	0,08	0,47	0,05	0,05	0,09	1,23	0,03
diknp	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	**0,001**	0,00	0,00	0,07	0,00	0,00	0,00	1,00

Source: Tables 4 and A.1.11.

Table A.1.14. Accounting multipliers matrix – 2005 (Scenario B)

	p1	p2	p3	p4	p5	p6	a1	a2	a3	a4	a5	a6	fle	foa	**dich**	dicnfc	dicfc	dicnp	dikh	diknfc	dikfc	diknp
p1	1,17	0,09	0,09	0,09	0,07	0,09	0,24	0,15	0,09	0,10	0,08	0,09	0,10	0,07	**0,099**	0,06	0,09	0,09	0,13	0,08	0,10	0,08
p2	1,08	1,94	1,43	1,18	0,97	1,20	1,37	1,57	1,47	1,25	1,06	1,23	1,18	0,96	**1,187**	1,04	1,18	1,22	1,63	1,48	1,38	1,60
p3	0,21	0,13	1,61	0,23	0,25	0,24	0,26	0,19	0,64	0,25	0,28	0,24	0,24	0,28	**0,241**	0,44	0,63	0,28	1,38	0,67	1,10	0,69
p4	0,36	0,27	0,26	0,92	0,23	0,29	0,29	0,28	0,26	0,34	0,25	0,30	0,27	0,21	**0,274**	0,19	0,24	0,28	0,31	0,25	0,26	0,26
p5	0,42	0,31	0,45	0,58	1,66	0,55	0,49	0,45	0,46	0,62	0,76	0,56	0,48	0,38	**0,480**	0,39	0,48	0,58	0,73	0,53	0,57	0,49
p6	0,12	0,08	0,13	0,15	0,15	1,21	0,15	0,12	0,13	0,16	0,17	0,22	0,19	0,15	**0,188**	0,12	0,15	1,03	0,17	0,11	0,14	0,17
a1	0,73	0,06	0,06	0,06	0,05	0,06	1,15	0,10	0,06	0,06	0,05	0,06	0,06	0,05	**0,065**	0,04	0,06	0,06	0,09	0,05	0,07	0,06
a2	0,54	0,95	0,73	0,60	0,50	0,60	0,68	1,78	0,73	0,62	0,53	0,61	0,59	0,48	**0,591**	0,52	0,59	0,61	0,82	0,74	0,70	0,80
a3	0,20	0,12	1,51	0,22	0,24	0,23	0,25	0,19	1,60	0,24	0,27	0,23	0,23	0,26	**0,230**	0,41	0,60	0,26	1,30	0,63	1,04	0,65
a4	0,58	0,44	0,43	1,43	0,44	0,47	0,47	0,46	0,44	1,55	0,43	0,48	0,44	0,34	**0,446**	0,31	0,40	0,46	0,53	0,42	0,43	0,44
a5	0,34	0,25	0,37	0,47	1,33	0,44	0,40	0,37	0,37	0,50	1,61	0,45	0,39	0,31	**0,388**	0,31	0,39	0,47	0,60	0,43	0,46	0,40
a6	0,14	0,09	0,16	0,17	0,21	1,20	0,17	0,14	0,15	0,18	0,20	1,24	0,21	0,17	**0,207**	0,14	0,17	1,03	0,21	0,14	0,17	0,20
fle	0,52	0,41	0,74	0,76	0,65	1,05	0,60	0,61	0,75	0,81	0,70	1,08	1,47	0,39	**0,472**	0,41	0,52	0,96	0,81	0,55	0,65	0,59
foa	0,71	0,36	0,53	0,64	0,77	0,56	0,93	0,54	0,54	0,69	0,89	0,57	0,40	1,32	**0,403**	0,34	0,42	0,55	0,65	0,46	0,52	0,47
dich	0,93	0,62	1,05	1,14	1,09	1,38	1,14	0,93	1,07	1,21	1,21	1,42	1,72	1,15	**1,726**	0,73	1,16	1,30	1,19	0,82	0,96	0,86
dicnfc	0,19	0,10	0,15	0,18	0,21	0,16	0,25	0,15	0,15	0,19	0,24	0,17	0,13	0,35	**0,129**	1,11	0,24	0,16	0,18	0,13	0,15	0,13
dicfc	0,09	0,05	0,08	0,09	0,10	0,09	0,11	0,07	0,08	0,09	0,11	0,09	0,08	0,15	**0,081**	0,11	1,09	0,09	0,09	0,06	0,07	0,06
dicnp	0,02	0,01	0,02	0,02	0,03	0,02	0,03	0,02	0,02	0,03	0,03	0,02	0,02	0,04	**0,023**	0,05	0,03	1,03	0,02	0,02	0,02	0,02
dikh	0,09	0,05	0,09	0,10	0,10	0,12	0,11	0,08	0,09	0,11	0,11	0,12	0,14	0,12	**0,139**	0,08	0,35	0,11	1,10	0,07	0,64	0,08
diknfc	0,11	0,06	0,08	0,10	0,12	0,09	0,14	0,08	0,08	0,11	0,13	0,09	0,07	0,19	**0,071**	0,61	0,13	0,09	0,10	1,07	0,08	0,07
dikfc	0,06	0,04	0,05	0,06	0,07	0,06	0,08	0,05	0,06	0,07	0,08	0,06	0,06	0,11	**0,058**	0,08	0,78	0,07	0,07	0,05	1,68	0,05
diknp	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	**0,003**	0,00	0,01	0,09	0,00	0,00	0,02	1,00

Source: Tables 5 and A.1.12.

Table A.1.15. Additional intragroup or direct effects matrix (M_1 - I) – 1995 (Scenario B)

	p1	p2	p3	p4	p5	p6	a1	a2	a3	a4	a5	a6	fle	foa	**dich**	dicnfc	dicfc	dicnp	dikh	diknfc	dikfc	diknp
p1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
p2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
p3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
p4	0	0	0	-0,45	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
p5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
p6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
a1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
a2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
a3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
a4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
a5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
a6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
fle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
foa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
dich	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0,006**	0	0	0	0	0	0	0
dicnfc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0,00	0	0	0	0	0	0
dicfc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0,01	0	0	0	0	0
dicnp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0,00	0	0	0	0
dikh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
diknfc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
dikfc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0,19	0
diknp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0

Source: Table A.1.11.

Table A.1.16. Additional intragroup or direct effects matrix (M_1 - I) – 2005 (Scenario B)

	p1	p2	p3	p4	p5	p6	a1	a2	a3	a4	a5	a6	fle	foa	**dich**	dicnfc	dicfc	dicnp	dikh	diknfc	dikfc	diknp
p1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
p2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
p3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
p4	0	0	0	-0,39	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
p5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
p6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
a1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
a2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
a3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
a4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
a5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
a6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
fle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
foa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
dich	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0,006**	0	0	0	0	0	0	0
dicnfc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0,01	0	0	0	0	0	0
dicfc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0,01	0	0	0	0	0
dicnp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0,01	0	0	0	0
dikh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
diknfc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0
dikfc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0,63	0
diknp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0

Source: Table A.1.12.

Table A.1.17. Additional intergroup or indirect effects matrix (M_2 - I) * M_1 – 1995 (Scenario B)

	p1	p2	p3	p4	p5	p6	a1	a2	a3	a4	a5	a6	fle	foa	**dich**	dicnfc	dicfc	dicnp	dikh	diknfc	dikfc	diknp
p1	0,02	0,02	0,02	0,02	0,02	0,02	0,03	0,03	0,04	0,03	0,03	0,04	0,02	0,02	**0,028**	0,02	0,02	0,04	0,05	0,03	0,03	0,04
p2	0,24	0,17	0,22	0,23	0,22	0,22	0,29	0,29	0,33	0,31	0,33	0,31	0,20	0,24	**0,254**	0,17	0,26	0,44	0,48	0,32	0,32	0,33
p3	0,08	0,04	0,07	0,09	0,08	0,10	0,05	0,04	0,06	0,05	0,06	0,05	0,05	0,07	**0,034**	0,03	0,08	0,05	0,10	0,05	0,06	0,05
p4	0,05	0,04	0,06	0,05	0,05	0,06	0,05	0,04	0,04	0,05	0,05	0,04	0,04	0,04	**0,038**	0,04	0,05	0,07	0,06	0,04	0,06	0,04
p5	0,07	0,06	0,07	0,07	0,07	0,07	0,09	0,09	0,09	0,10	0,13	0,10	0,06	0,07	**0,078**	0,05	0,07	0,14	0,12	0,09	0,09	0,08
p6	0,02	0,02	0,02	0,02	0,02	0,02	0,03	0,03	0,03	0,03	0,04	0,03	0,02	0,02	**0,030**	0,02	0,02	0,07	0,05	0,03	0,03	0,03
a1	0,03	0,02	0,03	0,03	0,02	0,03	0,02	0,02	0,02	0,02	0,02	0,02	0,03	0,02	**0,013**	0,02	0,02	0,02	0,02	0,01	0,02	0,01
a2	0,19	0,15	0,25	0,23	0,20	0,26	0,15	0,12	0,12	0,13	0,14	0,12	0,17	0,15	**0,109**	0,18	0,17	0,14	0,14	0,11	0,20	0,11
a3	0,04	0,03	0,10	0,05	0,06	0,05	0,10	0,06	0,07	0,09	0,08	0,10	0,05	0,06	**0,053**	0,09	0,07	0,04	0,04	0,03	0,13	0,03
a4	0,08	0,06	0,09	0,11	0,10	0,12	0,10	0,10	0,10	0,10	0,09	0,10	0,07	0,08	**0,077**	0,07	0,08	0,08	0,12	0,09	0,10	0,10
a5	0,07	0,06	0,09	0,11	0,15	0,12	0,07	0,06	0,06	0,06	0,06	0,06	0,08	0,07	**0,050**	0,07	0,08	0,06	0,07	0,05	0,08	0,05
a6	0,04	0,03	0,05	0,06	0,06	0,08	0,03	0,02	0,02	0,03	0,03	0,03	0,03	0,02	**0,019**	0,02	0,03	0,03	0,03	0,02	0,03	0,02
fle	0,08	0,07	0,08	0,08	0,08	0,08	0,13	0,12	0,13	0,14	0,15	0,16	0,10	0,12	**0,090**	0,08	0,12	0,12	0,16	0,11	0,12	0,11
foa	0,08	0,07	0,09	0,08	0,08	0,08	0,12	0,12	0,13	0,13	0,14	0,14	0,09	0,11	**0,093**	0,08	0,12	0,12	0,16	0,12	0,12	0,12
dich	0,18	0,16	0,26	0,25	0,28	0,21	0,15	0,16	0,15	0,15	0,15	0,14	0,28	0,22	**0,164**	0,25	0,26	0,18	0,19	0,16	0,30	0,16
dicnfc	0,04	0,04	0,05	0,05	0,06	0,04	0,03	0,04	0,03	0,03	0,03	0,03	0,05	0,04	**0,037**	0,05	0,05	0,05	0,05	0,04	0,06	0,04
dicfc	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	**0,014**	0,01	0,01	0,03	0,02	0,01	0,02	0,01
dicnp	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	**0,002**	0,00	0,00	0,00	0,00	0,00	0,00	0,00
dikh	0,03	0,02	0,02	0,02	0,02	0,02	0,03	0,03	0,03	0,03	0,04	0,03	0,02	0,02	**0,031**	0,02	0,02	0,08	0,05	0,03	0,03	0,03
diknfc	0,03	0,03	0,03	0,03	0,03	0,03	0,04	0,04	0,04	0,04	0,05	0,03	0,02	0,02	**0,038**	0,02	0,02	0,05	0,07	0,04	0,04	0,04
dikfc	0,01	0,01	0,01	0,01	0,01	0,02	0,01	0,01	0,01	0,01	0,01	0,01	0,00	0,00	**0,006**	0,00	0,01	0,01	0,01	0,01	0,01	0,01
diknp	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	**0,000**	0,00	0,00	0,00	0,00	0,00	0,00	0,00

Source: Table A.1.11.

Table A.1.18. Additional intergroup or indirect effects matrix (M_2 - I) * M_1 – 2005 (Scenario B)

	p1	p2	p3	p4	p5	p6	a1	a2	a3	a4	a5	a6	fle	foa	**dich**	dicnfc	dicfc	dicnp	dikh	diknfc	dikfc	diknp
p1	0,01	0,01	0,01	0,01	0,01	0,01	0,02	0,02	0,02	0,02	0,02	0,02	0,01	0,01	**0,017**	0,01	0,01	0,03	0,03	0,02	0,02	0,02
p2	0,18	0,11	0,15	0,15	0,15	0,15	0,23	0,22	0,27	0,24	0,23	0,25	0,13	0,14	**0,197**	0,11	0,21	0,35	0,41	0,27	0,22	0,29
p3	0,05	0,03	0,05	0,06	0,06	0,07	0,05	0,03	0,06	0,04	0,05	0,04	0,05	0,05	**0,029**	0,02	0,11	0,04	0,11	0,06	0,05	0,06
p4	0,05	0,04	0,05	0,05	0,04	0,05	0,04	0,04	0,04	0,05	0,05	0,04	0,04	0,03	**0,038**	0,04	0,04	0,07	0,06	0,04	0,05	0,04
p5	0,08	0,05	0,07	0,07	0,06	0,07	0,09	0,08	0,10	0,11	0,11	0,11	0,06	0,06	**0,079**	0,05	0,08	0,14	0,14	0,09	0,08	0,10
p6	0,03	0,02	0,02	0,02	0,02	0,02	0,03	0,03	0,03	0,03	0,03	0,03	0,01	0,01	**0,028**	0,01	0,02	0,06	0,05	0,03	0,03	0,03
a1	0,02	0,01	0,02	0,02	0,01	0,02	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	**0,007**	0,01	0,01	0,01	0,01	0,01	0,01	0,01
a2	0,13	0,10	0,19	0,16	0,14	0,19	0,09	0,07	0,08	0,08	0,08	0,08	0,12	0,09	**0,068**	0,12	0,12	0,10	0,10	0,07	0,15	0,08
a3	0,03	0,02	0,12	0,04	0,05	0,04	0,07	0,04	0,05	0,06	0,07	0,07	0,04	0,05	**0,043**	0,10	0,06	0,04	0,04	0,03	0,16	0,03
a4	0,08	0,05	0,09	0,11	0,10	0,12	0,09	0,09	0,09	0,08	0,08	0,09	0,07	0,06	**0,065**	0,05	0,07	0,07	0,10	0,08	0,08	0,09
a5	0,07	0,05	0,09	0,12	0,12	0,13	0,06	0,05	0,05	0,06	0,06	0,06	0,08	0,06	**0,047**	0,07	0,07	0,06	0,07	0,05	0,09	0,05
a6	0,04	0,02	0,05	0,06	0,06	0,08	0,03	0,02	0,02	0,03	0,03	0,03	0,02	0,02	**0,017**	0,02	0,02	0,03	0,03	0,02	0,03	0,02
fle	0,08	0,06	0,08	0,07	0,06	0,07	0,12	0,10	0,13	0,13	0,13	0,15	0,08	0,09	**0,080**	0,06	0,14	0,12	0,17	0,11	0,10	0,11
foa	0,07	0,05	0,07	0,06	0,05	0,06	0,11	0,10	0,11	0,12	0,12	0,13	0,07	0,07	**0,078**	0,05	0,11	0,10	0,14	0,10	0,08	0,10
dich	0,15	0,12	0,23	0,22	0,21	0,19	0,13	0,12	0,12	0,12	0,11	0,11	0,25	0,17	**0,128**	0,21	0,21	0,15	0,16	0,12	0,29	0,13
dicnfc	0,03	0,02	0,03	0,04	0,04	0,03	0,02	0,02	0,02	0,02	0,02	0,02	0,04	0,02	**0,021**	0,03	0,03	0,03	0,03	0,02	0,04	0,02
dicfc	0,01	0,01	0,01	0,02	0,02	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	**0,014**	0,01	0,01	0,03	0,02	0,01	0,02	0,02
dicnp	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	**0,004**	0,00	0,00	0,01	0,01	0,00	0,01	0,00
dikh	0,02	0,01	0,01	0,02	0,02	0,01	0,02	0,02	0,02	0,02	0,02	0,02	0,01	0,01	**0,020**	0,01	0,01	0,05	0,03	0,02	0,02	0,02
diknfc	0,02	0,01	0,01	0,01	0,02	0,02	0,02	0,02	0,02	0,02	0,02	0,02	0,01	0,01	**0,021**	0,01	0,01	0,03	0,03	0,02	0,02	0,02
dikfc	0,02	0,01	0,01	0,02	0,02	0,02	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	**0,011**	0,01	0,01	0,01	0,02	0,01	0,01	0,01
diknp	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	**0,000**	0,00	0,00	0,00	0,00	0,00	0,00	0,00

Source: Table A.1.12.

Table A.1.19. Additional extragroup or cross effects matrix (M_3 - I) * M_2 * M_1- 1995 (Scenario B)

	p1	p2	p3	p4	p5	p6	a1	a2	a3	a4	a5	a6	fle	foa	**dich**	dicnfc	dicfc	dicnp	dikh	diknfc	dikfc	diknp
p1	0,17	0,13	0,12	0,13	0,11	0,13	0,22	0,20	0,11	0,13	0,11	0,12	0,14	0,12	**0,130**	0,11	0,13	0,11	0,16	0,12	0,14	0,11
p2	1,17	1,07	1,56	1,34	1,17	1,36	1,43	1,59	1,50	1,34	1,20	1,29	1,32	1,23	**1,267**	1,32	1,31	1,15	1,54	1,51	1,61	1,74
p3	0,17	0,13	0,48	0,20	0,23	0,20	0,26	0,21	0,51	0,26	0,29	0,26	0,25	0,29	**0,276**	0,42	0,49	0,27	1,24	0,52	1,00	0,56
p4	0,27	0,24	0,21	0,27	0,21	0,22	0,23	0,24	0,23	0,29	0,23	0,24	0,22	0,20	**0,226**	0,18	0,21	0,21	0,26	0,22	0,24	0,23
p5	0,30	0,26	0,37	0,45	0,73	0,48	0,34	0,36	0,36	0,45	0,80	0,46	0,39	0,35	**0,372**	0,35	0,39	0,43	0,49	0,40	0,48	0,27
p6	0,10	0,08	0,12	0,14	0,16	0,17	0,13	0,11	0,11	0,14	0,17	0,17	0,18	0,15	**0,163**	0,10	0,15	1,00	0,12	0,09	0,12	0,08
a1	0,80	0,09	0,08	0,08	0,07	0,08	0,16	0,16	0,09	0,10	0,09	0,10	0,09	0,08	**0,102**	0,07	0,09	0,09	0,13	0,10	0,11	0,10
a2	0,59	1,08	0,73	0,63	0,59	0,61	0,80	0,92	0,89	0,78	0,71	0,76	0,67	0,67	**0,729**	0,64	0,69	0,74	0,98	0,90	0,86	1,03
a3	0,21	0,14	1,39	0,23	0,23	0,23	0,20	0,18	0,48	0,21	0,25	0,20	0,25	0,29	**0,246**	0,34	0,49	0,27	1,24	0,52	0,89	0,56
a4	0,47	0,42	0,38	1,39	0,38	0,37	0,39	0,40	0,38	0,50	0,42	0,40	0,39	0,34	**0,387**	0,32	0,37	0,41	0,44	0,37	0,42	0,37
a5	0,24	0,20	0,27	0,32	1,34	0,33	0,29	0,31	0,31	0,40	0,70	0,41	0,29	0,28	**0,321**	0,26	0,30	0,41	0,44	0,35	0,39	0,24
a6	0,10	0,08	0,11	0,12	0,18	1,11	0,14	0,13	0,13	0,16	0,21	0,19	0,18	0,15	**0,187**	0,11	0,15	1,03	0,16	0,12	0,15	0,11
fle	0,46	0,41	0,64	0,69	0,67	1,01	0,49	0,57	0,61	0,68	0,67	0,96	0,42	0,37	**0,423**	0,38	0,42	0,90	0,62	0,44	0,58	0,45
foa	0,76	0,42	0,61	0,73	0,71	0,58	0,93	0,57	0,59	0,72	0,74	0,53	0,40	0,36	**0,398**	0,38	0,40	0,53	0,61	0,44	0,57	0,43
dich	0,94	0,66	0,95	1,08	1,01	1,34	1,19	1,00	1,09	1,26	1,28	1,45	1,59	1,27	**0,705**	0,64	1,15	1,32	1,12	0,78	0,87	0,78
dicnfc	0,26	0,14	0,20	0,24	0,23	0,21	0,35	0,22	0,23	0,28	0,29	0,23	0,15	0,48	**0,165**	0,12	0,24	0,20	0,24	0,17	0,19	0,16
dicfc	0,07	0,04	0,06	0,07	0,07	0,07	0,09	0,06	0,06	0,08	0,08	0,07	0,07	0,12	**0,069**	0,07	0,06	0,06	0,06	0,04	0,06	0,04
dicnp	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	**0,009**	0,01	0,02	0,01	0,01	0,01	0,01	0,01
dikh	0,11	0,08	0,12	0,13	0,13	0,16	0,13	0,11	0,11	0,13	0,13	0,15	0,20	0,17	**0,181**	0,11	0,31	0,10	0,10	0,10	0,57	0,08
diknfc	0,18	0,10	0,15	0,18	0,17	0,14	0,23	0,14	0,15	0,18	0,18	0,15	0,12	0,35	**0,103**	0,80	0,18	0,12	0,13	0,10	0,13	0,10
dikfc	0,03	0,02	0,03	0,03	0,03	0,03	0,05	0,03	0,04	0,04	0,04	0,04	0,04	0,07	**0,036**	0,07	0,47	0,04	0,04	0,08	0,03	0,03
diknp	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	**0,001**	0,00	0,00	0,07	0,00	0,00	0,00	0,00

Source: Table A.1.11.

Table A.1.20. Additional extragroup or cross effects matrix (M_3 - I) * M_2 * M_1- 2005 (Scenario B)

	p1	p2	p3	p4	p5	p6	a1	a2	a3	a4	a5	a6	fle	foa	**dich**	dicnfc	dicfc	dicnp	dikh	diknfc	dikfc	diknp
p1	0,15	0,08	0,07	0,08	0,06	0,08	0,22	0,13	0,07	0,08	0,06	0,07	0,09	0,06	**0,082**	0,05	0,08	0,06	0,10	0,06	0,08	0,06
p2	0,91	0,83	1,28	1,03	0,82	1,06	1,14	1,35	1,20	1,01	0,83	0,99	1,05	0,81	**0,990**	0,93	0,97	0,88	1,22	1,21	1,17	1,31
p3	0,15	0,10	0,56	0,17	0,19	0,17	0,22	0,16	0,57	0,20	0,23	0,20	0,19	0,23	**0,212**	0,41	0,52	0,23	1,27	0,61	1,05	0,63
p4	0,31	0,23	0,20	0,27	0,19	0,23	0,24	0,24	0,22	0,29	0,21	0,25	0,23	0,17	**0,236**	0,15	0,20	0,21	0,25	0,21	0,21	0,22
p5	0,34	0,25	0,38	0,51	0,60	0,48	0,40	0,37	0,36	0,51	0,65	0,46	0,42	0,32	**0,400**	0,34	0,40	0,44	0,60	0,44	0,49	0,39
p6	0,10	0,06	0,11	0,13	0,13	0,19	0,12	0,09	0,10	0,13	0,14	0,19	0,17	0,14	**0,160**	0,11	0,13	0,96	0,12	0,08	0,11	0,14
a1	0,71	0,05	0,04	0,04	0,04	0,04	0,14	0,09	0,05	0,06	0,04	0,05	0,05	0,04	**0,058**	0,03	0,05	0,05	0,08	0,05	0,06	0,05
a2	0,41	0,85	0,53	0,44	0,36	0,41	0,59	0,70	0,66	0,55	0,45	0,54	0,47	0,39	**0,523**	0,40	0,48	0,52	0,72	0,67	0,55	0,72
a3	0,17	0,10	1,39	0,18	0,20	0,18	0,18	0,14	0,55	0,18	0,20	0,17	0,19	0,22	**0,187**	0,32	0,53	0,22	1,27	0,60	0,88	0,63
a4	0,50	0,38	0,34	1,32	0,34	0,35	0,38	0,37	0,35	0,47	0,35	0,40	0,37	0,27	**0,381**	0,26	0,33	0,39	0,42	0,34	0,35	0,35
a5	0,27	0,20	0,27	0,35	1,21	0,32	0,33	0,31	0,32	0,44	0,55	0,40	0,30	0,24	**0,341**	0,25	0,32	0,41	0,53	0,38	0,37	0,34
a6	0,10	0,07	0,12	0,12	0,16	1,13	0,14	0,12	0,13	0,16	0,17	0,21	0,18	0,15	**0,189**	0,12	0,15	1,00	0,18	0,12	0,15	0,18
fle	0,45	0,35	0,66	0,69	0,58	0,98	0,48	0,51	0,62	0,68	0,57	0,93	0,39	0,30	**0,392**	0,34	0,38	0,84	0,64	0,44	0,56	0,47
foa	0,64	0,31	0,46	0,58	0,72	0,49	0,82	0,44	0,43	0,57	0,77	0,44	0,33	0,25	**0,325**	0,28	0,32	0,45	0,52	0,37	0,44	0,37
dich	0,78	0,50	0,82	0,92	0,89	1,19	1,01	0,81	0,95	1,10	1,11	1,30	1,46	0,98	**0,592**	0,52	0,96	1,15	1,03	0,69	0,67	0,73
dicnfc	0,16	0,08	0,12	0,14	0,17	0,13	0,23	0,13	0,13	0,17	0,22	0,15	0,09	0,33	**0,108**	0,07	0,21	0,13	0,15	0,11	0,10	0,11
dicfc	0,07	0,04	0,06	0,07	0,08	0,07	0,10	0,06	0,06	0,08	0,10	0,08	0,07	0,14	**0,067**	0,10	0,06	0,07	0,07	0,05	0,05	0,05
dicnp	0,02	0,01	0,02	0,02	0,02	0,02	0,03	0,02	0,02	0,02	0,03	0,02	0,02	0,04	**0,019**	0,04	0,02	0,02	0,02	0,01	0,01	0,01
dikh	0,07	0,04	0,08	0,08	0,08	0,10	0,09	0,06	0,07	0,08	0,09	0,10	0,13	0,11	**0,119**	0,07	0,34	0,06	0,07	0,05	0,62	0,05
diknfc	0,09	0,04	0,07	0,08	0,10	0,07	0,12	0,06	0,07	0,08	0,11	0,07	0,06	0,19	**0,051**	0,60	0,12	0,06	0,07	0,05	0,06	0,05
dikfc	0,05	0,03	0,04	0,05	0,05	0,04	0,07	0,04	0,05	0,06	0,07	0,05	0,05	0,10	**0,048**	0,08	0,77	0,05	0,05	0,04	0,04	0,03
diknp	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	**0,002**	0,00	0,01	0,09	0,00	0,00	0,02	0,00

Source: Table A.1.12.

A.2. The SAM-based linear model

A.2.1. Structural indicators

See "conventions and declarations in the A.2.3."

cell	**Equations** (or exogenous variables)	Eq.**nº**
Distribution of generated **i**ncome (**g**ross **a**dded **v**alue) - among factors of production		
$Digav_f = (GAV_f / \Sigma_a GAV_a)*100$		(A.1)
Distribution of generated **i**ncome (**g**ross **n**ational **i**ncome) - among institutions		
$Digni_{dic} = (GNI_{dic} / GNI) *100$		(A.2)
Distribution of **d**isposable **i**ncome (among institutions)		
$Didi_{dic} = (DI_{dic} / DI) *100$		(A.3)
Use of **d**isposable **i**ncome (among institutions)		
$UdiFC_{dic} = (FC_{dic} / DI_{dic}) *100$		(A.4)
$UdiS_{dic} = (S_{dic} / DI_{dic}) *100 = 100 - UdiFC_{dic}$		(A.5)

A.2.2. Macroeconomic aggregates

See "conventions and declarations in the A.2.3."

cell	**Equations** (or exogenous variables)	Eq.**nº**
Gross **D**omestic **P**roduct at market prices		
$GDP = \Sigma_a GAV_a + NTP + NTA$		(A.6)
Gross **N**ational **I**ncome (at **M**arket **P**rices)		
$GNIMP = GNI + \Sigma_{dic} NTP_{dic} + \Sigma_{dic} NTA_{dic}$		(A.7)
Gross **D**isposable **I**ncome		
$DI = \Sigma_{dic} DI_{dic}$		(A.8)
$DI_{dic} = GNI_{dic} + NTA_{dic} + NTP_{dic} + CTR_{dic} + CT_{dicrw} - CTP_{dic} - CT_{rwdic}$		(A.9)

A.2.3. Conventions and declarations

Sets (set indices: lower-case subscripts)

p ε Products [products of agriculture, hunting, forestry, fisheries and aquaculture (group 1, **p1**); products from mining and quarrying, manufactured products and energy products (group 2, **p2**); construction work (group 3, **p3**); wholesale and retail trade services, repair services, hotel and restaurant services, transport and communication services (group 4, **p4**); financial intermediation services, real estate, renting and business services (group 5, **p5**); other services (group 6, **p6**)]

***a* ε Activities** [agriculture, hunting and forestry; fishing and operation of fish hatcheries and fish farms (group1, ***a*1**); industry, including energy (group 2, ***a*2**); construction (group 3, ***a*3**); wholesale and retail trade, repair of motor vehicles and household goods, hotels and restaurants;

transport and communications (group 4, ***a*4**); financial, real-estate, renting and business activities (group 5, ***a*5**); other service activities (group 6, ***a*6**)]

f ε Factors of production

- Labour – employees (**fle**)
- Own assets (**foa**) (employers and/or own-account workers; capital)

di **ε Domestic Institutions**

- **dic** (current account of di) [households (**dich**); non-financial corporations (**dicnfc**); financial corporations (**dicfc**); general government (**dicg**); non-profit institutions serving households (**dicnp**-NPISHs)]
- **dik** (capital account of di) [households (**dikh**), non-financial corporations (**diknfc**), financial corporations (**dikfc**), general government (**dikg**), and non-profit institutions serving households (**diknp**-NPISHs)]
- **dif** (financial account of di)

rw ε rest of the world

In variables and parameters with **two indices**, the **first** represent the **row** and the **second** the **column accounts** (both indices may be equal).

***Parameters* (lower-case, italics)**

α ..	share of the production of each group of activities in the value of production of each group of products
β ..	proportion of gross added value in the value of production of each group of activities
γ ..	proportion of intermediate consumption in the value of production of each group of activities
adv..	share of the value of acquisitions less disposals of valuables of each group of products by each group of domestic institutions in the total value of acquisitions less disposals of valuables by these institutions
advc ..	coefficient of acquisitions less disposals of valuables: amount expended by each group of domestic institutions on acquisitions less disposals of valuables per unit of gross saving
apc ..	average propensity to consume of each group of domestic institutions: amount of final consumption per unit of (gross) disposable income
cf..	share of compensation of factors received by domestic institutions

cgfcf .. rate of coverage of gross fixed capital formation of each group of domestic institutions by investment grants received by these institutions

chinv .. share of the value of changes in inventories of each group of products by each group of domestic institutions in the total value of changes in inventories of that group of products

chinvc .. coefficient of changes in inventories: amount of change in inventories of each group of products per unit of supply

dbs.. share of compensation of factors (compensation of employees, gross operating surplus and gross mixed income) in the gross added value

d5s .. share of current tax on income, wealth, etc. paid by each group of domestic institutions to each group of domestic institutions (Portuguese general government), in the total of current tax on income, wealth, etc. paid by the former

d5rws.. share of current tax on income, wealth, etc. paid by each group of domestic institutions to the rest of the world in the total of current tax on income, wealth, etc. paid by the former

d61s .. share of social contributions paid by each group of domestic institutions to each group of domestic institutions in the total of social contributions paid by the former

d61rws.. share of social contributions paid by each group of domestic institutions to the rest of the world in the total of social contributions paid by the former

d62s .. share of social benefits other than social transfers in kind paid by each group of domestic institutions to each group of domestic institutions in the total of social benefits other than social transfers in kind paid by the former

d62rws.. share of social benefits other than social transfers in kind paid by each group of domestic institutions to the rest of the world in the total of social benefits other than social transfers in kind paid by the former

d7 .. share of other current transfers paid by each group of domestic institutions to each group of domestic institutions in the total of other current transfers paid by the former

d7rws .. share of other current transfers paid by each group of domestic institutions to the rest of the world in the total of social benefits other than social transfers in kind paid by the former

d91 .. share of capital taxes paid by each group of domestic institutions (households) to each group of domestic institutions (Portuguese general government) in the total of capital taxes paid by the former

d92.. share of investment grants paid by each group of domestic institutions (Portuguese general government) to each group of domestic institutions in the total of investment grants received by the latter

d92rw.. share of investment grants paid by the rest of the world to each group of domestic institutions in the total of investment grants received by the latter

d99.. share of other capital transfers paid by each group of domestic institutions to each group of domestic institutions in the total of other capital transfers received by the latter

d99rw.. share of other capital transfers paid by the rest of the world to each group of domestic institutions in the total of other capital transfers received by the latter

fcs .. proportion of expenditure on final consumption in each group of products in the total value of the final consumption of each group of domestic institutions

fcsrw .. proportion of expenditure on final consumption in the rest of the world in the total value of the final consumption of each group of domestic institutions

gfcf .. share of the value of gross fixed capital formation in each group of products by each group of domestic institutions in the total value of gross fixed capital formation by these institutions

icp .. coefficient of the intermediate consumption of products: proportion of intermediate consumption of each group of products per unit of intermediate consumption of each group of activities

ntag .. share of net taxes on production paid by each group of activities and received by domestic institutions (Portuguese general government)

ntarw .. share of net taxes on production paid by each group of activities and received by the rest of the world (European Union institutions)

ntpg .. share of net taxes on each group of products received by domestic institutions (Portuguese general government)

ntprw .. share of net taxes on each group of products received by the rest of the world (European Union institutions)

sc .. social contribution rate: social contributions paid by domestic institutions, per unit of received gross national income

si .. saving identity special

ti .. rate of direct taxes: current taxes on income, wealth, etc. paid by domestic institutions, per unit of received aggregate income

tk .. rate of capital tax levied on other capital transfers received by domestic institutions

tmr .. rate of trade and transport margins on each group of domestically transacted products: amount of trade and transport margins per unit of value of domestically transacted products

tp .. (net) tax rate on each group of products: amount of (net) taxes on products per unit of the value of domestically transacted products

Exogenous variables ***(upper-case, at least the first letter, italics)***

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

D5RW .. current taxes on income, wealth, etc. (transaction D5 of the National Accounts) received by domestic institutions from the rest of the world

D61RW .. social contributions (transaction D61 of the National Accounts) received by domestic institutions from the rest of the world

D62P .. social benefits other than social transfers in kind (transaction D62 of the National Accounts) paid by domestic institutions

D62RW .. social benefits other than social transfers in kind (transaction D62 of the National Accounts) received by domestic institutions from the rest of the world

D7P .. other current transfers (transaction D7 of the National Accounts) paid by domestic institutions

D7RW .. other current transfers (transaction D7 of the National Accounts) received by domestic institutions from the rest of the world

D8 .. adjustment made for the change in the net equity of households in pension fund reserves (transaction D8 of the National Accounts)

D92P .. investment grants (transaction D92 of the National Accounts) paid by domestic institutions (Portuguese general government) to the rest of the world

D99P .. other capital transfers (transaction D99 of the National Accounts) paid by domestic institutions to the rest of the world

D99R .. other capital transfers (transaction D99 of the National Accounts) received by domestic institutions

EX .. value of exports (transaction P6 of the National Accounts, at f.o.b. prices)

FT .. financial transactions (transactions F1 to F7 of the National Accounts), except those received from the rest of the world

IM .. value of imports (transaction P7 of the National Accounts, at c.i.f. prices)

K2 .. acquisitions less disposals of non-financial non-produced assets (transaction K2 of the National Accounts)

NTAA .. net taxes on production paid by each group of activities

P51 .. value of gross fixed capital formation (transaction P51 of the National Accounts)

<u>Endogenous variables</u> (upper-case, at least the first letter, normal)

AD .. value of aggregate demand (at market prices)

AFIP .. aggregate factors income (paid)

AFIR .. aggregate factors income (received)

AI .. aggregate income (received)

AINV .. aggregate investment

AIP .. aggregate income (paid)

AS .. aggregate supply (value at market prices)

CT .. current transfers

CTP .. (total) current transfers paid by each group of domestic institutions to (all) domestic institutions

CTR .. (total) current transfers received by each group of domestic institutions from (all) domestic institutions

DI .. (gross) disposable income

Didi .. percentage of gross disposable income received by domestic institutions

Digav .. percentage of income generated by the factors production

Digni.. percentage of generated income (gross national income) received by domestic institutions

DT.. value of domestically transacted products, at basic-c.i.f. prices

DTmp .. value of domestically transacted products, at market prices

D5 .. current taxes on income, wealth, etc. (transaction D5 of the National Accounts)

D61 .. social contributions (transaction D61 of the National Accounts)

D91P .. capital taxes (transaction D91 of the National Accounts) paid by domestic institutions

D92R .. investment grants (transaction D92 of the National Accounts) received by domestic institutions

FC .. value of final consumption (transaction P3 of the National Accounts), at market prices

FTRW .. financial transactions (transactions F1 to F7 of the National Accounts) received by domestic institutions from the rest of the world

GAV .. gross added value, at factor cost

GCF .. value of gross capital formation (transaction P5 of the National Accounts), at market prices

GDP.. gross domestic product, at market prices

GNI .. gross national income, at factor cost

GNIMP.. gross national income, at market prices

INVF .. investment funds

KT .. capital transfers

KTP .. (total) capital transfers paid by each group of domestic institutions to (all) domestic institutions

KTR .. (total) capital transfers received by each group of domestic institutions from (all) domestic institutions

NLB .. net lending / borrowing

NTA .. net taxes on production (transaction D29-D39 of the National Accounts)

NTP .. net taxes on products (transaction D21-D31 of the National Accounts)

P52 .. value of changes in inventories (transaction P52 of the National Accounts)

P53 .. value of acquisitions less disposals of valuables (transaction P53 of the National Accounts)

S .. gross saving

TFTP .. total financial transactions (paid)

TFTR .. total financial transactions (received)

TM.. trade and transport margins on transacted products p

TMP.. trade and transport margins on transacted products p - total

TVRWP .. value of transactions to the rest of the world

TVRWR .. transactions value from the rest of the world

UdiFC .. percentage of gross disposable income used in final consumption by domestic institutions

UdiS .. percentage of gross disposable income used in (gross) saving by domestic institutions

VCT .. value of total costs (at basic prices)

VIC .. value of intermediate consumption (transaction P2 of the National Accounts) at market prices

VP .. value of production (transaction P1 of the National Accounts), at basic prices

VPT.. total production value (at basic prices)

A.3. Portuguese Integrated Economic Accounts

Table A.3.1. Portuguese Integrated Economic Accounts for 1995 (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	29 454	29 454								P.7	Imports of goods and services
	24 433		24 433							P.6	Exports of goods and services
	154 394	154 394								P.1	Output of goods and services
	84 102			84 102	1 527	9 294	3 003	1 631	64 959	P.2	Intermediate consumption
	10 535	10 535								D.21-D.31	Net taxes on products
	80 827			**80 827**	**1 190**	**16 966**	**12 386**	**4 333**	**39 105**	**B.1g/B.1*g**	**Gross added value/gross domestic product**
	13 457			13 457	279	3 715	1 526	733	7 204	K.1	Consumption of fixed capital
	67 369			**67 369**	**911**	**13 251**	**10 860**	**3 600**	**31 900**	**B.1n/B.1*n**	**Value added, net/Net domestic product**
	5 021		**5 021**							**B.11**	**External balance of goods and services**
II.1.1. Generation of income account	38 683		120	38 563	1 126	2 111	10 990	2 309	22 027	D.1	Compensation of employees
	10 102			10 102	- 14	- 118	- 56	- 4	- 241	D.2-D.3	Net taxes on production and imports
	10 535			10 535						D.21-D.31	Net taxes on products
	- 433			- 433	- 14	- 118	- 56	- 4	- 241	D.29-D.39	Net taxes on production
	17 189			**17 189**	**78**		**1 452**	**2 028**	**17 319**	**B.2g**	**Gross operating surplus**
	14 973			**14 973**		**14 973**				**B.3g**	**Gross mixed income**
	7 446			**7 446**	**- 201**		**- 74**	**1 295**	**10 115**	**B.2n**	**Net operating surplus**
	11 258			**11 258**		**11 258**				**B.3n**	**Net mixed income**
II.1.2. Allocation of primary income account	31 314		3 123	28 191	38	2 976	5 066	12 175	7 936	D.4	Property income
										P.119	Adjustment to the FISIM (Financial Intermediation Services Indirectly Measured)
	80 479			**80 479**	**137**	**59 614**	**7 379**	**1 787**	**11 561**	**B.5g**	**Gross national income/ Gross balance of primary incomes**
	67 022			**67 022**	**- 142**	**55 899**	**5 853**	**1 054**	**4 357**	**B.5n**	**Net national income/ Net balance of primary incomes**
II.2. Secondary distribution income account	7 161			7 161	2	4 932		226	2 000	D.5	Current taxes on income, wealth, etc
	11 718			11 718		11 718				D.61	Social contributions
	11 659		29	11 630	13	42	9 515	720	1 339	D.62	Social benefits other than social transfers in kind
	15 737		3 931	11 807	19	1 865	8 194	1 066	663	D.7	Other current transfers
	83 517			**83 517**	**1 388**	**57 105**	**13 371**	**2 311**	**9 342**	**B.6g**	**Gross disposable income**
	70 059			**70 059**	**1 109**	**53 390**	**11 845**	**1 578**	**2 138**	**B.6n**	**Net disposable income**
II.3. Redistribution of income in kind account	10 177			10 177	1 288		8 889			D.63	Social transfers in kind
	83 517			**83 517**	**100**	**67 282**	**4 482**	**2 311**	**9 342**	**B.7g**	**Gross adjusted disposable income**
	70 059			**70 059**	**- 178**	**63 566**	**2 956**	**1 578**	**2 138**	**B.7n**	**Net adjusted disposable income**
II.4. Use of income account	**83 517**			**83 517**	**1 388**	**57 105**	**13 371**	**2 311**	**9 342**	**B.6g**	**Gross disposable income**
	70 059			**70 059**	**1 109**	**53 390**	**11 845**	**1 578**	**2 138**	**B.6n**	**Net disposable income**
	66 225			66 225		60 082	6 143			P.4	Actual Final Consumption
	66 225			66 225	1 288	49 905	15 032			P.3	Final consumption expenditure
	752			752				752		D.8	Adjustment for the change in the net equity of households in pension funds reserves
	17 291			**17 291**	**100**	**7 952**	**- 1 661**	**1 558**	**9 342**	**B.8g**	**Gross saving**
	3 834			**3 834**	**- 178**	**4 237**	**- 3 187**	**825**	**2 138**	**B.8n**	**Net saving**
	2 331		**2 331**							**B.12**	**Current external balance**

Accumulation accounts
Changes in Assets

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 (-)
	6 165		**40**	**6 125**	**110**	**5 324**	**- 2 902**	**496**	**3 096**	**B.10.1**	**Changes in net worth due to saving and capital transfers**
III.1.2 Acquisitions of non-financial assets account	18 457			18 457	359	5 383	3 018	918	8 781	P.51	Gross fixed capital formation
	- 13 457			- 13 457	- 279	- 3 715	- 1 526	- 733	- 7 204	K.1	Consumption of fixed capital (-)
	1 026			1 026	1	255			769	P.52	Changes in inventories
	140			140	6	117		4	12	P.53	Acquisitions less disposals of valuables
			0	0		- 738	29	20	689	K.2	Acquisitions less disposals of non-produced non-financial assets
			40	**- 40**	**23**	**4 023**	**- 4 423**	**287**	**49**	**B.9**	**Net lending (+) /borrowing (-)**

			S.2	S.1	S.15 + S.14		S.13	S.12	S.11		
III.2 Financial account	44 247		9 257	34 990	9 771		1 282	18 231	5 706		Net acquisition of financial assets\
											Net incurrence of liabilities
			- 13	13				13		F.1	Monetary gold and SDRs
	17 287		6 604	10 683	5 860		1 794	2 883	147	F.2	Currency and deposits
	6 379		1 679	4 699	1 320		- 15	2 838	557	F.3	Securities other than shares
	8 745		912	7 833	451		96	7 193	94	F.4	Loans
	4 175		48	4 127	- 86		- 420	3 162	1 471	F.5	Shares and other equity
	3 400		6	3 394	3 260		1	37	96	F.6	Insurance technical reserves
	4 260		20	4 240	- 1 033		- 173	2 105	3 342	F.7	Other accounts receivable/payable
			40	**- 40**	**4 332**		**- 4 422**	**187**	**- 137**	**B.9 F**	**Net lending (+) /borrowing (-)**
					287			- 100	- 187		Statistical discrepancy

Source: Statistics Portugal (*INE*)- Portuguese National Accounts for 1995.

Table A.3.1. Portuguese Integrated Economic Accounts for 1995 (in millions of euros) (continued)

Current accounts

Resources

Code	Transactions and other flows, stocks and balancing items	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 Account	Goods and Services Account (Uses)	Total	Accounts
P.7	Imports of goods and services						29 454		29 454	I. Production / external account of goods and services
P.6	Exports of goods and services							24 433	24 433	
P.1	Output of goods and services	5 964	15 389	26 260	2 717	154 394			154 394	
P.2	Intermediate consumption							84 102	84 102	
D.21-D.31	Net taxes on products					10 535			10 535	
B.1g/B.1*g	**Gross added value/gross domestic product**	**4 333**	**12 386**	**16 966**	**1 190**	**80 874**			**80 874**	II.1.1. Generation of income account
K.1	Consumption of fixed capital									
B.1n/B.1*n	**Value added, net/Net domestic product**	**3 600**	**10 860**	**13 251**	**911**	**67 369**			**67 369**	
B.11	**External balance of goods and services**						**5 021**		**5 021**	
D.1	Compensation of employees			38 620		38 620	64		38 683	II.1.2. Allocation of primary income account
D.2-D.3	Net taxes on production and imports		9 937			9 937	165		10 102	
D.21-D.31	Net taxes on products		10 283			10 283	252		10 535	
D.29-D.39	Net taxes on production		1 220			- 346	- 87		- 433	
B.2g	**Gross operating surplus**	**2 028**	**1 452**		**78**	**17 189**			**17 189**	
B.3g	**Gross mixed income**			**14 973**		**14 973**			**14 973**	
B.2n	**Net operating surplus**	**1 295**	**- 74**		**- 201**	**7 446**			**7 446**	
B.3n	**Net mixed income**			**11 258**		**11 258**			**11 258**	
D.4	Property income	15 623	1 056	8 998	97	27 952	3 363		31 314	
P.119	Adjustment to the FISIM (Financial Intermediation Services Indirectly Measured)	- 3 688								
B.5g	**Gross national income/ Gross balance of primary incomes**	**1 787**	**7 379**	**59 614**	**137**	**80 479**			**80 479**	II.2. Secondary distribution income account
B.5n	**Net national income/ Net balance of primary incomes**	**1 054**	**5 853**	**55 899**	**- 142**	**67 022**			**67 022**	
D.5	Current taxes on income, wealth, etc		7 161			7 161			7 161	
D.61	Social contributions	1 473	8 851	42	13	11 718			11 718	
D.62	Social benefits other than social transfers in kind			11 629		11 629	30		11 659	
D.7	Other current transfers	1 063	7 690	4 376	1 272	14 845	892		15 737	
B.6g	**Gross disposable income**	**2 311**	**13 371**	**57 105**	**1 388**	**83 517**			**83 517**	II.3. Redistribution of income in kind account
B.6n	**Net disposable income**	**1 578**	**11 845**	**53 390**	**1 109**	**70 059**			**70 059**	
D.63	Social transfers in kind			10 177		10 177			10 177	
B.7g	**Gross adjusted disposable income**	**2 311**	**4 482**	**67 282**	**100**	**83 517**			**83 517**	II.4. Use of income account
B.7n	**Net adjusted disposable income**	**1 578**	**2 956**	**63 566**	**- 178**	**70 059**			**70 059**	
B.6g	**Gross disposable income**	**2 311**	**13 371**	**57 105**	**1 388**	**83 517**			**83 517**	
B.6n	**Net disposable income**	**1 578**	**11 845**	**53 390**	**1 109**	**70 059**			**70 059**	
P.4	Actual Final Consumption							66 225	66 225	
P.3	Final consumption expenditure							66 225	66 225	
D.8	Adjustment for the change in the net equity of households in pension funds reserves			752		752			752	
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**	**1 558**	**- 1 661**	**7 952**	**100**	**17 291**			**17 291**	III.1.1. Change in net worth due to saving and capital transfers account
B.8n	**Net saving**	**825**	**- 3 187**	**4 237**	**- 178**	**3 834**			**3 834**	
B.12	**Current external balance**						**2 331**		**2 331**	
D.9	Capital transfers, receivable	814	3 375	1 166	292	7 250	29		7 278	
D.9	Capital transfers, payable (-)	- 1 143	- 3 089	- 78	- 4	- 4 959	- 2 320		- 7 278	
B.10.1	**Changes in net worth due to saving and capital transfers**	**496**	**- 2 902**	**5 324**	**110**	**6 125**	**40**		**6 165**	III.1.2 Acquisitions of non-financial assets account
P.51	Gross fixed capital formation							18 457	18 457	
K.1	Consumption of fixed capital (-)									
P.52	Changes in inventories							1 026	1 026	
P.53	Acquisitions less disposals of valuables							140	140	
K.2	Acquisitions less disposals of non-produced non-financial assets							0	0	
B.9	**Net lending (+) /borrowing (-)**									

		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	18 044	5 704	5 438	35 030	9 217		44 247	
F.1	Monetary gold and SDRs								
F.2	Currency and deposits	12 961	1 317		14 278	3 010		17 287	
F.3	Securities other than shares	127	4 038		5 345	1 034		6 379	
F.4	Loans	134	545	4 626	7 450	1 295		8 745	
F.5	Shares and other equity	1 288			3 683	492		4 175	
F.6	Insurance technical reserves	3 213			3 362	37		3 400	
F.7	Other accounts receivable/payable	321	- 196	812	911	3 349		4 260	
B.9 F	**Net lending (+) /borrowing (-)**								
	Statistical discrepancy								

Source: Statistics Portugal (*INE*)- Portuguese National Accounts for 1995.

Table A.3.2. Portuguese Integrated Economic Accounts for 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

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

Source: Statistics Portugal (*INE*)- Portuguese National Accounts for 2005.

Table A.3.2. Portuguese Integrated Economic Accounts for 2005 (in millions of euros) (continued)

Current accounts

Resources

Code	Transactions and other flows, stocks and balancing items	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 Account	Goods and Services Account (Uses)	Total	Accounts
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			

Source: Statistics Portugal (*INE*)- Portuguese National Accounts for 2005.