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A FINANCIAL SOCIAL ACCOUNTING MATRIX (SAM) FOR LUXEMBOURG

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A Financial Social Accounting Matrix (SAM) for Luxembourg¹

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Abstract

A Social Accounting Matrix (SAM) is a comprehensive, economy-wide data framework of real accounts, typically representing the economy of a nation but also providing the link between the economy and the rest of the world in terms of trade flows. However, in order to have a complete picture of the transactions taking place in an economy, real accounts are not sufficient and need to be complemented with financial accounts. This paper describes the construction of the first financial SAM for Luxembourg for the year 2007 by integrating both financial institutions and financial instruments into the real SAM. This powerful tool has two principal objectives: first, to organize the information that would allow an analysis of the structure of the economy of Luxembourg and second, to provide the benchmark data set for the creation of a financial computable general equilibrium (CGE) model.

Keywords: financial social accounting matrix, computable general equilibrium models, financial accounts, portfolio choice, financial institutional sectors

JEL Classification: D30, C68, D57, G11, G20, D53

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Résumé non-technique

Ce Cahier d'Etudes présente la première matrice financière de comptabilité sociale relative à l'économie luxembourgeoise pour l'année 2007, dernière année pour laquelle les nombreuses données requises sont disponibles. Ce choix permet également de minimiser l'ampleur des révisions statistiques. Il est important de préciser à ce stade qu'il s'agit d'un cahier d'Etude qui est essentiellement statistique et technique, décrivant la construction d'une base de données qui sera utilisée dans un modèle financier d'équilibre général. Ce modèle fera l'objet d'une publication ultérieure de la BCL.

En premier lieu, la construction de la partie réelle de la matrice de comptabilité sociale est présentée en détails ainsi que son cadre théorique. Ensuite, l'ensemble des comptes financiers (stocks et flux financiers) y sont intégrés et leur cadre théorique est également présenté. Les comptes financiers détaillés complets (stocks et flux) intégrés à la matrice incorporent des transactions financières ayant lieu entre les secteurs institutionnels de l'économie luxembourgeoise d'une part et les transactions entre ces derniers et le reste du monde d'autre part. La matrice financière de comptabilité sociale donne une image beaucoup plus complète et réaliste de l'économie luxembourgeoise. La relation structurelle entre les principaux comptes sectoriels (sociétés financières, sociétés non-financières, gouvernement, ménages et le reste du monde) intégrés à la matrice permet d'analyser en détail la structure de l'économie luxembourgeoise.

La matrice financière de comptabilité sociale répond à deux objectifs principaux: intégrer d'une manière cohérente l'information sur la structure économique et sociale du pays et fournir un ensemble de données de référence pour la création d'un modèle financier d'équilibre général.

L'analyse des comptes financiers de l'économie luxembourgeoise montre que la richesse financière nette (soit les actifs financiers moins les passifs financiers) de tous les secteurs institutionnels du pays a augmenté en 2007, à l'exception de celle du secteur institutionnel 'sociétés non-financières', pour lequel les passifs ont été plus élevés que les actifs. Cette amélioration nette s'explique principalement par la réévaluation des valeurs des stocks en 2007, suite aux résultats positifs enregistrés sur les marchés financiers. Par ailleurs, l'année 2007 a été la dernière année caractérisée par une évolution favorable des indicateurs économiques avant la crise économique et financière de 2008.

En 2007, les investissements financiers (flux d'actifs) de l'ensemble des secteurs institutionnels ont atteint un montant de 514 927 millions d'euros, tandis que l'économie luxembourgeoise a généré des flux d'engagement s'élevant à 511 854 million d'euros. Au total, le pays a enregistré un surplus de 3 073 millions d'euros ou 8,2 pourcent du PIB qui a servi à financer le déficit du reste du monde. Les sociétés financières luxembourgeoises (SEC95 S12) ont acquis plus de 80 pourcent des actifs financiers de l'économie et ont enregistré une proportion similaire du côté du passif. En outre, le montant de l'acquisition des actifs financiers étant légèrement plus important que celui du passif, il en a résulté un solde positif s'élevant à 2 674 millions d'euros pour ce secteur. Ainsi, les sociétés financières constituent le plus important contributeur au solde positif total des comptes financiers de l'économie luxembourgeoise. Quant au gouvernement, le solde

financier positif qu'il a enregistré est le deuxième plus significatif parmi les secteurs, avec 1 373 millions d'euros en 2007. Ce montant représente environ 45 pourcent du montant total que l'économie luxembourgeoise a prêté au reste du monde. Finalement, les ménages luxembourgeois ont enregistré un surplus, également d'environ 5 pourcent du montant total prêté au reste du monde par le Luxembourg.

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1 Introduction

The use of social accounting matrices (SAMs) to record the main transactions that took place in a national economy during a specific period (e.g. one year) can be traced as far back as Quesnay (1694-1774) in 1758 with his *Tableau économique*. In the twentieth century, social accounting was heavily influenced both by the work on national income accounts by Kuznets (1937) and that on input-output matrices by Leontief (1941). The development of SAMs such as they are used today began with the work by Meade and Stone (1941) by developing the first logically complete set of double entry national income accounts. Subsequent work by Stone (1947) resulted in the conventions for social accounting embodied in the United Nations' System of National Accounts (United Nations, 1953 and 1968), which is currently used throughout the world.

However, the widespread use of SAM started in the 1980s as a result of efforts to integrate the “social” with the “economic” dimension in policy analysis. The SAM provides a framework that integrates detailed data on production, income and expenditure, thereby allowing a systematic recording of economic transactions for the study of growth and its distribution in a particular country (Mohora, 2006). Further, a SAM also enables *inter alia* the identification of structural relationships between the economic agents. In the SAM the economic agents are usually classified according to the main institutional sectors³: non-financial corporations sector, financial corporations sector, households sector, government sector and the rest of the world (external) sector. The performance of each institutional sector is analysed in terms of, e.g. its contribution to net value added, expenditure, disposable income and net saving. In addition, the current external balance of the economy can be derived within the SAM. More important, the SAM represents a consistent framework, which gives a “snapshot” of the economy. It provides a clear picture of the structure of the economy at a particular point in time as well as the core data for a general equilibrium model.

Economic and social systems, subject to an increasing complexity and interdependence, require policy analysts to have high quality and reliable observations in order to properly explain, conceptualise, understand and make meaningful the underlying dynamics of the scientific material. Otherwise, unreliable and biased data can result in seriously distorted (if not altogether wrong) policy recommendations. The SAM is the framework that challenges (most of) these constraints.

In order to have a complete picture of transactions taking place in an economy, real accounts are not sufficient and need to be complemented with financial accounts.

Financial accounts form an important tool for analysing financial flows taking place between well-defined institutional sectors within the economy (non-financial corporations, financial corporations, government and households), between institutional sectors and the rest of the world,

³ ESA95 classification of main institutional sectors has been used for this disaggregation.

and for assessing financial interrelationships within the economy and vis-à-vis the rest of the world at a particular point in time. Because of their link to capital and use of income accounts, financial accounts are an important instrument to monitor the transmission process of monetary policy. The completeness of financial accounts enables the analysis of monetary aggregates as well as the analysis of longer-term financial investments and sources of finance. Consequently, the financial accounts provide a way of examining the financial effects of economic policy and assistance for decisions regarding future policy. The accounts can be used to investigate factors influencing the transactions in different types of financial instruments (i.e. changes in interest rates). For financial institutions, these accounts show the large amounts of funds which are channelled through them as financial intermediaries. The scale of this makes it important to be aware of changes in their sources of funds and in the use of those funds. The transactions of the financial institutions reflect the liquidity, current and capital expenditure of other sectors, and the financing of the government sector net cash requirement (EC and Eurostat, 2002).

Further, the financial balance sheets (another tool of financial accounts), show the financial wealth of each sector of the economy at a particular point in time. The changes from previous balance sheets illustrate both the change in the valuation of different instruments as stock markets move and as currency exchange rates change, but also the changing portfolios resulting from the financial transactions of the sectors. This allows measuring “wealth effects” through the change in assets’ market prices. Regarding the structure of financial markets, the balance sheets can be used to measure: the share of different financial instruments for different sectors, the share of different sectors for different financial instruments, the degree of marketability of financial instruments and the degree of financial intermediation (EC and Eurostat, 2002).

This paper describes the construction of a financial SAM for Luxembourg for the year 2007 by integrating both real and financial accounts. This SAM is used to analyse the structure of the economy of Luxembourg and to provide the benchmark data set for a financial computable general equilibrium (CGE) model. Even if the construction of the financial CGE model and the financial SAM can be presented separately, in line with the normal practice in CGE modelling, they are very often built simultaneously. By doing so, the financial CGE model can be constructed while taking into account both the data limitations and the specific characteristics of the economy.

The SAM presented in this paper is the first financial SAM built for the Luxembourg economy. The real SAM has been constructed by the national statistical office (Adam *et al.*, 2010) for the year 2004. However, it should be emphasised at this stage that the present financial SAM for Luxembourg for 2007 has been built from scratch and independently of the 2004 real SAM, as it incorporates different sectoral disaggregation (putting more emphasis on financial sectors) as well as detailed current and capital account transactions between institutional sectors. Introducing financial accounts in a SAM is inevitable when analysing the Luxembourg economy, as the financial sector represented around 30 percent of the gross value added during the last decade.

The reference year 2007 for a financial SAM has been chosen for three main reasons. First, it is the most recent year for which the required data (relatively complete national accounts) were available with little needs for revision. Second, it represents the most recent year without any major external or internal shock to the economy. Third, given the macroeconomic instability (economic and financial crisis) observed in the three most recent years - 2008, 2009 and 2010 - the data for this period are not suitable for the calibration of the model. Choosing 2007 as the reference year allows us to analyse adequately the impact of the financial crisis on the Luxembourg economy compared to the pre-crisis environment.

For the construction of the financial SAM, October 2011 EDP (Excess Deficit Procedure) notification has been used for real accounts and July 2011 quarterly publication for financial accounts. This practice allowed having harmonised real and financial accounts. Unfortunately, October 2011 publication of financial accounts could not be used in this paper as the Statistical National Office (Statec) did not harmonise the real and financial accounts. Discrepancies between both remain significant and could not be justified as statistical discrepancies.

The remaining part of this paper is organised as follows. First, some theoretical aspects regarding the real and the financial accounts of the SAM are presented and their conceptual framework is discussed (section 2). Section 3 presents the construction of the financial SAM for Luxembourg for 2007, which serves as a benchmark data set for a financial CGE model. Some characteristics of Luxembourg's economy are also discussed within a separate presentation of the real and financial accounts in order to facilitate an analysis and a presentation of accounts. Finally, some concluding remarks are presented in section 4.

2 What is social accounting matrix (SAM)?

A social accounting matrix (SAM) is a matrix presentation of the ESA95 accounts which elaborates the linkages between supply and use tables and the sector accounts. SAMs typically focus on the role of people in the economy, which may be reflected by *inter alia* extra breakdowns of the household sector and a disaggregated representation of labour markets (Eurostat and European Commission, 1996). They are foreseen and described in the European and International methodologies of national accounts [see ESA95, §8.100 and following (Eurostat and European Commission, 1996); SNA93, §20.3 and following (United Nations, 1993); and SNA08, §28.71 and following (United Nations, 2008)].⁴

⁴ The SAM structure presented in this paper is slightly different from the reference structure indicated in the above mentioned references, and this in order to have the desired disaggregation for the financial general equilibrium model that this data base is built for. The following statement from SNA08 (United Nations, 2008, p.37) shows that this is perfectly in line with a common practice “A social accounting matrix (SAM) is a presentation of the SNA in matrix terms that permits the incorporation of extra details of special interest. To date, builders of SAMs have exploited the flexibility to highlight special interests and concerns ... The power of a SAM, ... comes from choosing the appropriate type of disaggregation to study the topic of interest. In addition to a flexible application, SAMs may incorporate more extensive adjustments, which are of a satellite accounting nature, in order to serve specific analytical purposes.”

A SAM usually encompasses a somewhat less detailed supply and use table or input-output (IO) table. A clear distinction must be drawn between the IO table and the SAM. The essence of the IO table is the way industries are interrelated through transactions, while the SAM also presents the transaction and the transfers between the different types of economic agents such as firms, government, households and the rest of the world (Pyatt, 1999). In other words, a SAM is a comprehensive, economy-wide-data framework, typically representing the economy of a nation and also providing the link between the economy and the rest of the world in terms of trade flows. A SAM has two principal objectives. The first is concerned with the organisation of information, usually information about the economic and social structure of a country in a particular year, though it could just as well be about the region of a country, a city, or any other unit one might be interested in. The unit of time is arbitrary but is usually a year. It is recognised as a sound descriptive and synoptic framework of an economy (Pyatt and Round, 1985). Furthermore, the structure and disaggregation of the SAM depends on the national socio-economic structure, modelling needs, and availability of data and resources.

Once the data in a particular country for a particular year have been organised in the form of a SAM, it presents a static image which can reveal much about the country's economic structure. Even so, the image is only a "snapshot". In order to analyse how the economy works and to predict the effects of policy interventions, more is needed than just a static image. A model of the economy has to be created. This is the second objective of a SAM: to provide the statistical basis for the creation of a plausible model.

Historically, the design of a statistical information system such as SAM has evolved from the combination of two ideas: the matrix presentation of national income accounts, reflecting the Keynesian model of the markets for goods and services, and the input-output model of the structural interdependence of production in the economy. The Keynesian model divides economic activity into three categories: production; income and expenditure; and accumulation.

A SAM is presented as a square matrix designed to provide a record of details of market transactions between different economic agents, using a single entry-form of booking. It can be represented as (Pyatt, 1988):

$$T = [t_{ij}] \tag{1}$$

where i is the number of row and j the number of the column. By convention, resources are shown in the rows and expenditures are shown in the columns. According to this convention, t_{ij} is the value of all receipts of i from j during the accounting period. Correspondingly, t_{ji} measures payments to j by i .

Furthermore, the design and the construction methods of the SAMs are not standardised but according to Pyatt and Round (1985), the SAM framework, relying on the double entry book-keeping accounting principle, serves to satisfy simultaneously two basic rules:

- i. Every entry is a receipt when read in its row context and expenditure in its column context. The description of social accounting matrices as single entry accounts is derived from this rule;
- ii. For every row there is a corresponding column and the system is complete only if the corresponding row and column totals are equal for each account. This restriction can be written as in equation (2).

For instance, Table 1 shows that suppose the set i ($i = 1, 2, 3, \dots, n$) is the index of the rows and j ($j = 1, 2, 3, \dots, n$) that of the columns of SAM. The general element of the SAM, t_{ij} is defined as expense of the account j that constitutes a receipt for account i . The internal consistency of the SAM guarantees that, for each account, the total of the resources is identical to total of expenditures. Considering a given account k , it becomes then (Emini, 2002):

$$\sum_j^n t_{k,j} = \sum_i^n t_{i,k} \quad (k = 1, 2, 3, \dots, n) \quad (2)$$

The verification of the above identity for all accounts is symptomatic of the resources-expenses (supply-use) equilibrium at the level of each economic agent, product, factor sector, production sector and at the level of the whole economy.

Table 1: Double-Entry Bookkeeping principle and consistency of the accounts of a SAM

		Outlays	Account numbers by column ($j = 1, \dots, k, \dots, n$)					Totals
			1	...	k	...	n	
Revenues								
Account numbers by row ($i = 1, \dots, k, \dots, n$)	1	$t_{1,1}$		$t_{1,k}$		$t_{1,n}$	$\sum_{j=1}^n t_{1,j}$	
	...							
	k	$t_{k,1}$		$t_{k,k}$		$t_{k,n}$	$\sum_{j=1}^n t_{k,j}$	
	...							
	n	$t_{n,1}$		$t_{n,k}$		$t_{n,n}$	$\sum_{j=1}^n t_{n,j}$	
Totals		$\sum_{i=1}^n t_{i,1}$		$\sum_{i=1}^n t_{i,k}$		$\sum_{i=1}^n t_{i,n}$		

Sources: Pyatt and Round (1985), Pyatt (1988) and Emini (2002).

The three different ways of compiling GDP –production, expenditure and income approaches – can be used in the SAM. In other words, SAM has to satisfy all three approaches to be in equilibrium and fully correct.

The information needed to build a SAM comes from a variety of sources, such as national accounts, household surveys, government budgets, banking statistics and the balance of payments. Placing these data within a SAM framework almost always (especially in developing countries) reveals inconsistencies between the incomes and expenditures of each account. A number of statistical estimation techniques exist to balance SAM accounts or reconcile incomes and expenditures. Cross entropy (Robinson *et al*, 1998, 2000a and 2000b) or RAS approaches (Bacharach, 1970; Günlük-Şenesen and Bates, 1988; and Gilchrist and St Louis, 1999) are the most widely used methods.

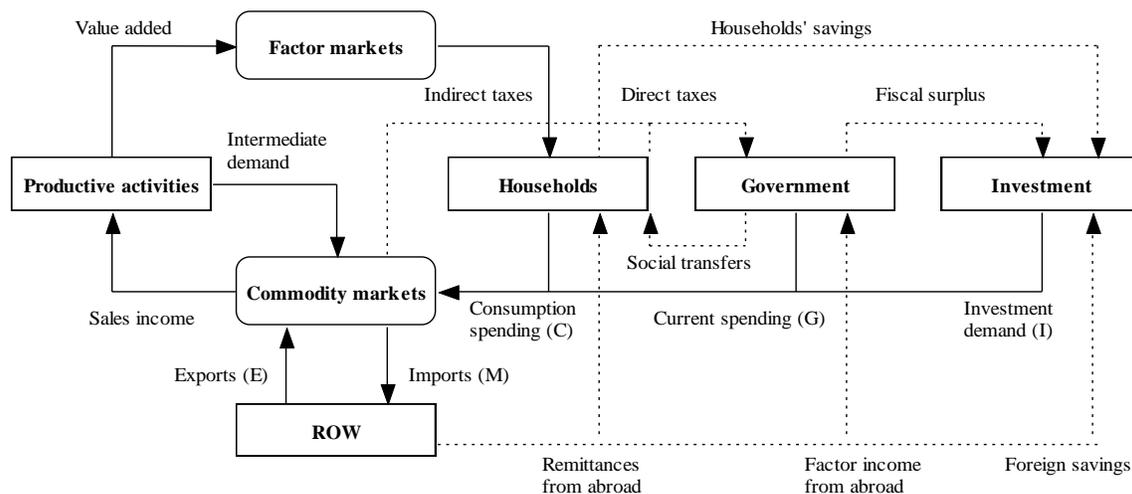
A SAM can be distinguished either by size, macro (aggregated) or micro (disaggregated), or by the nature of accounts, real or financial. In section 3, the construction of macro and micro SAMs (with real and financial accounts) for Luxembourg is presented in detail.

2.1 Real SAM

Accounts involved in a SAM may be real and/or financial. Real accounts are used to depict the circularity of real flows of the economy capturing all transfers and real transactions between sectors and institutions. Six major types of accounts headings are distinguished in a real SAM: (i) production activities, (ii) commodities, (iii) factors of production, (iv) current account of domestic institutions, (v) capital account of institutions (savings-investment) and (vi) external sector. Depending on analytical requirements, availability of disaggregated data, challenging problem raised in the analysis or analytical requirements, some additional accounts can be introduced and each account can be disaggregated or aggregated.

One way of depicting the economy is the circular flow diagram shown in figure 1, which captures all transfers and real transactions between sectors and institutions. Productive activities purchase capital and labour inputs from the factor markets and intermediate inputs from commodity markets, and use these to produce goods and services. These are supplemented by imports (M) and then sold through commodity markets (total supply to the domestic market) to households (H), government (G), investors (I) and external sector (E). In the circular flow diagram, each institution's expenditure becomes another institution's income. For example, household and government purchases of commodities provide the incomes producers need to continue the production process. Additional inter-institutional transfers, such as taxes and savings, ensure that the circular flow of incomes is closed (Breisinger *et al.*, 2009).

Figure 1: The circular flow diagram of transactions between various economic agents



Source: Breisinger *et al.* (2009) and author's adjustment.

In a simplified manner, the SAM is the transformation of the circular flow of figure 1 into a squared matrix of transactions between the various economic agents. For every row there is a corresponding column and the system is complete only if the corresponding row and column totals are equal for each account.

A conceptual SAM is presented in Table 2. The two first rows and columns: commodities and production activities represent an aggregate supply and use tables specifically linked with other national accounts.

The first column (Table 2) reflects total supply of commodities to the domestic market. Total supply is given by a part of domestic output delivered to the domestic market valued at basic prices, cell (2,1), and imports from the external sector, cell (13,1). Taxes less subsidies on commodities are registered in cell (9,1), and transaction costs in cell (10,1). The first row shows total demand for commodities at purchaser's prices, used for intermediate consumption in the production process, cell (1,2), for final consumption, by the government, cell (1,7), by the households, cell (1,8), for transaction costs, cell (1,10), demand for investment commodities, cell (1,11), inventories (1,12), and exports (1,13). Purchaser's prices compared to the basic prices include taxes (excluding deductible taxes) less subsidies and transport margins paid by consumers. To keep total demand for commodities (the row total) equal to total supply of commodities to the domestic market (the column total), the balance of taxes and subsidies and the transaction costs by product have to be recorded in the column of first account (Eurostat and European Commission, 1996).

The second column records the intermediate consumption used in the production process, net value added at factor costs generated by use of capital, cell (3,2), and labour, cell (4,2), taxes less subsidies on production paid to a tax collection account, cell (9,2), and consumption of fixed capital (depreciation), cell (11,2). The value added at factor costs is not a concept in the ESA95, but can be derived by subtracting taxes (on capital and labour) less subsidies on production from the value added at basic prices (Eurostat and European Commission, 1996). The column gives domestic output at basic prices, cell (14,2) which is row-wise supplied to the domestic market, cell (2,1).

The total of the third and the fourth rows gives net value added at factor costs, which reflects the value newly created in the production process by the use of capital and labour (factors of production), cells (3-4,2), and the factor income from the ROW, cells (3-4,13). The remuneration of capital and labour of non-financial corporations, financial corporations, government and households is reflected in the third and fourth columns, cells (5-8,3-4). Factor expenditure to the ROW is given in cells (13,3-4), and it reflects the remuneration of capital and labour that is provided to the non-residents in the economy.

Each group of economic agents - represented through institutional accounts following ESA95 principals - has its own row, booking the revenues, and its own column, booking the expenditures during the accounting period. The institutional accounts are disaggregated as follow: non-financial corporations, financial corporations, government and households (that include NPISHs).

Table 2: Basic framework of a Social Accounting Matrix with real accounts

		OUTLAYS	Commodities	Production activities	Factors of production		Institutional sectors				Taxes - subsidies	Transaction costs	Savings-Investment	Changes in stocks	Rest of the World	TOTAL
						Capital	Labour	S11	S12	S13	S1M					
REVENUS			1	2	3	4	5	6	7	8	9	10	11	12	13	14
Commodities		1	Intermediate consumption					Consump demand	Consump demand		Transaction costs	Investement demand	Inventories	Exports		Total demand
Production activities		2	Domestic output delivered to domestic market													Domestic demand for domestic output
Factors of production	Capital	3	Net value added												Factor income from ROW	Net value added
	Labour	4														
Institutional sectors	S11	5	Non-financial firms' income Financial firms' income Govmt income Households' income			Distributive trasactions among insitutional sectors				Taxes less subsidies				Transfers from ROW	S11 revenue	
	S12	6												Transfers from ROW	S12 revenue	
	S13	7												Transfers from ROW	S13 revenue	
	S1M	8												Transfers from ROW	S1M revenue	
Taxes - subsidies		9	Taxes less subsidies on commodities	Taxes less subsidies on production												Total taxes less subsidies
Transaction costs		10	Transaction costs													Total trade and transport margins
Savings-Investment		11	Depreciation			S11 savings	S12 savings	S13 savings	S1M savings			Net capital transfers		Foreign savings		Total savings
Changes in stocks		12										Total inventories				Total changes in inventories
Rest of the World		13	Imports		Factor expenditure to the ROW	Transfers to ROW	Transfers to ROW	Transfers to ROW	Transfers to ROW		Taxes less subsidies					Foreign receipts
TOTAL		14	Total supply to the domestic market	Domestic output	Net value added	S11 outlays	S12 outlays	S13 outlays	S1M outlays	Total taxes less subsidies	Total trade and transport margins	Total investment	Total changes in inventories	Foreign outlays		

Notations: S11 - non-financial corporations; S12 - financial corporations, S13 - government; S1M - households and NPISHs; ROW – rest of the world.

The fifth and sixth rows show the income received by the non-financial and financial corporations sectors, respectively, for providing capital in the production process, cells (5-6,3), as well as transfers received from the institutional sectors, cells (5-6,5-8). These transfers include: property income, current taxes on income and wealth (except corporate taxes), social contributions and benefits (except social contributions), other current transfers, and finally, adjustment for the change in net equity of households in pension funds reserves⁵. Corporate taxes, representing taxes on capital, and social contributions, representing taxes on labour, or in other words taxes on production, are included in the tax collection account. The non-financial and financial corporations sectors use their income, respectively, to make transfers to the institutional sectors, cells (5-8,5-6), and to the external sector, and to save, cells (11,5-6).

Further, the government sector receives tax revenues from the income of capital factor of production, cell (7,3), transfers from other institutional sectors (including taxes on income and wealth mostly paid by households), cells (7,5-8) and from the tax collection account, cell (7,9). The latter consists of taxes on commodities and on production. It uses those revenues to consume, to make transfers to other institutional sectors, cells (5-8,7) and to the ROW, cell (13,7) and to save, cell (11,7). The ninth row books most of the tax revenues, mostly taxes on commodities and on production. The use of a separate account for taxes and subsidies appears to be useful when analysing the effects of alternative fiscal scenarios. The households sector account records on the row the income from the capital and labour provided to the production sectors, cells (8,3-4), and transfers from the institutional sectors, cells (8,5-8), and the rest of the world, cell (8,13). Further, the households use their total income for final consumption, for transfers to institutional sectors (including the payment of taxes on income and wealth to government), cell (8,5-8), and for saving, cell (11,8).

The savings-investment account presents, in row eleven, the consumption of fixed capital, the savings of non-financial corporations, financial corporations, government, households and the external sector, as well as net receivable capital transfers, cell (11,11). In the column, demand for investment goods is provided at purchaser's prices. The changes in stocks account gives the demand for inventories at purchaser's prices in cell (1,12), and is further balanced through savings-investment account, cell (12,11).

Finally, the external account shows the domestic economy's imports, factor payments to the ROW, transfers of institutional sectors to the ROW, as well as taxes and subsidies provided by the production sectors (transfer to the EU budget) in row twelve, which represents an income for the foreign sector, and exports supply to the ROW, factor income, transfers from institutional sectors, and the foreign savings in the column. Foreign savings, when interpreted from the standpoint of the domestic economy, reflect the surplus/deficit of current account.

⁵ In the remaining part of this section the transfers from or to the institutional sectors always refer to these taxes.

2.2 Financial SAM

The SAM can be classified as real SAM and financial SAM, where the former records only the transactions of the real activities of the economic institutions and the latter not only records the real transactions but also the transactions taking place in the financial markets. Therefore, in the financial SAM, non-financial and financial corporations, government, households and agents from the ROW engage in transactions related to the real-side of the economy but they also own assets and incur liabilities. In this section, these additional rubrics of accounts - financial accounts - to be associated with the real accounts are presented, and this so as to obtain a complete set of accounts that represent financial SAM. Financial accounts described in this section follow ESA95 classification and accounting rules.

In general, financial accounts are an integral part of the system of national accounts. The primary function of the system of national accounts is to schematically dissect the complex workings of the economy and its basic components and thereby to facilitate the task of economic analysis. The financial flows account supplements this picture by adding those transactions which occur in the financial sphere (Deutsche Bundesbank, 2010). The consistent, homogenous and comprehensive set of financial accounts provides a useful overview of the main financial flows in the economy, as well the main risks and interdependencies between sector and financial instruments (Bê Duc and Le Breton, 2009).

The financial account deals with the financial transactions (in financial assets and liabilities) taking place between institutional units (non-financial corporations, financial corporations, government and households), and between them and the rest of the world (Eurostat and European Commission, 1996). It shows on its left side acquisitions less disposals of financial assets, while its right side shows the incurrence of liabilities less their repayment⁶. In other words, the financial account shows how the surplus or deficit on the capital account is financed by transactions in financial assets and liabilities. Thus, the balance of the financial account (net acquisition of financial assets less net incurrence of liabilities) is equal in value to net lending/net borrowing, the balancing item of the capital account (European Commission and Eurostat, 2002). The financial transactions are summarised and recorded systematically in the financial account. The financial account also indicates how net borrowing sectors obtain resources by incurring liabilities or reducing assets, and how net lending sectors allocate their surpluses by acquiring assets or reducing liabilities. The account also shows the contributions to these transactions of the various types of financial assets, and the role of financial intermediaries (European Commission and Eurostat, 2002). Finally, its purpose is also to provide figures on the net worth – i.e. assets minus liabilities – of institutional sectors (Lequiller and Blades, 2006).

⁶ Each financial asset (owned by the creditor) has a counterpart liability (issued by the debtor), with the exception of monetary gold and special drawing rights (ESA95 F1).

Furthermore, the financial account is the final account, in the full sequence of accounts that records the transactions. Thus, the financial account does not have a balancing item that is carried forward to another account. In the system, by definition, the balancing item of the financial account is identical with the balancing item of the capital account. In practice, a divergence will usually be found between them because they are calculated on the basis of different statistical data. This divergence is known as a “statistical discrepancy” and its existence explain why the ESA95 B9 account of the non-financial accounts is sometimes coded “B9A” and that of the financial accounts “B9B” (or called “net financial transactions”) so as to differentiate them. For example, in the European Union, only the government sector does not have a statistical discrepancy between B9A and B9B accounts, thanks to the quality and consistency of the information available for the accounts of this particular sector⁷

The adjunction of financial assets and liabilities in a SAM with the real accounts requires two additional accounts: the capital accounts belonging to economic agents on the one hand, and financial assets (or liabilities) accounts themselves, on the other hand (Emini, 2002).

1. The capital accounts

In a financial SAM, it is consequential that each agent has two types of accounts: a current account as in real SAM, and a capital account. Admittedly, in the real SAM, there is already an accumulation account that behaves as a capital account. However, this account is usually unique for all the economic agents represented in the SAM. Although it distinctly records, in row, the savings of each agent, in column on the contrary it gives only the total investment of the aforesaid agents and thus does not account for the participation of each one of these agents in the Gross Fixed Capital Formation (GFCF). In addition, this capital account records only the flows of physical capital and the resources received by the agents. The creation of a distinct capital account for each agent then allows keeping details of the agent’s different resources, as well as the various assets (physical and/or financial) the latter holds as counterparts of those resources or liabilities. Moreover, it is not customary to distinguish non-financial corporations from financial corporations in a real SAM. In order to portray the financial features and mechanisms, it is henceforth paramount to insure that this distinction is drawn when it comes to SAM with financial accounts, so that each of the non-financial and financial firms as well has its pair made of “current account” and “capital account”.

2. The financial assets and liabilities accounts

The financial assets and liabilities accounts keep details on the nature and the structure of financial resources and uses of economic agents. The categories of financial assets introduced into a SAM depend on the problems studied, on the availability of data as well as on the financial practice of the modelled economy. The latter can range from fiduciary currencies to foreign engagements, passing through bank deposits, capital shares, public bonds, bank credits, commercial bank reserves, advances of the central bank to the Treasury, central bank refinancing, etc. These assets can be recorded in a SAM in terms of stocks and (or only) in terms of flows. If

⁷ The governments are closely monitored by the European Commission and Eurostat during the EDP procedure that takes place twice a year (in April and October).

the stocks are introduced into the SAM, in addition to the flow accounts, two other accounts are to be created for each category of assets: an account for the opening-book-inventories and another for the ending-book-inventories.

In general, a financial social accounting matrix is classified into five main building blocks: production activities, production factors, institutional sectors, capital and financial, as presented in the next table. Further disaggregation is aimed at providing a better perspective on the structure of the economy regarding: transaction costs, taxes and subsidies as well as separating industries and commodities.

Table 3: Main building blocks of financial SAM

EXPENDITURES ↓ INCOMES →	Production activities	Production factors	Institutional sectors	Capital	Financial
Production activities	REAL SAM			INVESTMENTS	
Production factors					
Institutional sectors					
Capital			SAVINGS		LIABILITIES
Financial				ASSETS	

Further, it results from Table 4 that a financial SAM might actually be split into three areas: the first area, at the northwest of the SAM, represents the real SAM, with the difference that it does not involve savings and capital goods. The south-eastern area of the SAM is the extra-financial module of the SAM, where the shaded cells indicate the record locus devoted to flows of financial assets and liabilities. In the middle of these two areas, are depicted the savings for each institutional agent, the contribution of each of them to the fixed gross capital formation as well as capital transfers among institutional sectors. In fact, these are the most apparent buffer-variables linking the real side to the financial side in the SAM (Emini, 2002).

The link between the current account and the capital account of each agent is in particular established in an explicit way through **its savings**. Each institutional sector transfers the balance of its current account (i.e. its savings) into its capital account. This balance becomes to some extent its initial balance or own resource disposable for possible acquisition of physical and/or financial assets. Another link between the real and the financial spheres of the SAM consists of the change in physical capital. It results from the real SAM and is distributed in the capital accounts of agents. Finally, capital transfers among institutional sectors are also represented in that area.

Table 4: Basic framework of a Social Accounting Matrix with real and financial accounts

	OUTLAYS	Commodities	Production activities	Factors of production		Institutional sectors: current account					Taxes - subsidies	Trans. costs	Institutional sectors: capital account					Changes in stocks	Financial instruments	TOTAL	
				K	L	S11	S12	S13	S1M	S2			S11	S12	S13	S1M	S2				
REVENUS		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
Commodities	1		Intermediate consumption				Consump demand	Consump demand	Exports		Trans. costs		Investment demand (GFCF) by institutional sector	Inventories						Total demand	
Production activities	2	Domestic output delivered to domestic market																		Domestic demand for domestic output	
Factors of production	K		Net value added							Factor income from ROW										Net value added	
	L																				
Institutional sectors: current account	S11				Non-financial firms' income															Total S11 revenue	
	S12				Financial firms' income																Total S12 revenue
	S13				Govmt income	Distributive trasactions among insitutional sectors					Taxes less subsidies									Total S13 revenue	
	S2		Imports		Households' income							Taxes less subsidies									Total S2 revenue
Taxes - subsidies	10	Taxes less subsidies on commodities	Taxes less subsidies on production																	Total taxes less subsidies	
Transaction costs	11	Transaction costs																		Total trade and transport	
Institutional sectors: capital account	S11		Depreciation		S11 savings															S11K availability	
	S12		Depreciation		S12 savings																S12K availability
	S13		Depreciation		S13 savings								Capital transfers among institutional sectors								S13K availability
	S2		Depreciation		S2 savings			S1M savings													S2K availability
Changes in stocks	17												Inventories by institutional sector							Total var. in inventories	
Financial instruments	18												Financial assets by institutional sector							Total fin. assets	
TOTAL	19	Total supply to the domestic market	Domestic output	Net value added	Total S11 outlays	Total S12 outlays	Total S13 outlays	Total S1M outlays	Total S2 outlays	Total taxes less subsidies	Total trade and transport	Total S11 exp.	Total S12 exp.	Total S13 exp.	Total S1M exp.	Total S2 exp.	Total changes in inventories	Total fin. liabilities			

Sources: Emini (2002), Statistics Indonesia and Bank Indonesia (2009), Jellema *et al.* (2004) and author's construction.

Notations: S11-non-financial corporations; S12-financial corporations, S13-government; S1M-households and NPISHs; and S2 - external sector; K-capital; and L-labour.

As indicated above, in order to take into account the financial variables and mechanisms of the financial CGE model, two rubrics of accounts are associated to the real SAM. The first rubric involves at least six capital accounts at a rate of one capital account per institutional agent and changes in stocks account. The second rubric consists of a certain number of flow accounts that are assigned to the same number of financial categories of assets/liabilities implicated in the economy.

Table 5 indicates the general financial assets/liabilities (instruments) used in the European Union member countries (following ESA95 principles). These have been ordered according to their degree of “liquidity”⁸.

Table 5: Financial instruments
(Net acquisition of financial assets/net incurrence of liabilities)

Δ Assets	Δ Liabilities
F1. Monetary gold and SDRs	F1. Monetary gold and SDRs
F2. Currency and deposits	F2. Currency and deposits
F3. Securities other than shares	F3. Securities other than shares
F4. Loans	F4. Loans
F5. Shares and other equity (including investment funds)	F5. Shares and other equity (including investment funds)
F6. Insurance technical reserves	
F7. Other accounts receivable	F7. Other accounts payable
	B9B. Net lending/net borrowing

Source: Lequiller and Blades (2006).

The complete financial accounts indicate the financial flows, revaluation (and the accounts showing other changes in assets) and financial balance sheet accounts (indicating the stocks) for all the institutional sectors (non-financial corporations, financial corporations, government, households and the ROW agents). Taken together, these accounts show for each institutional sector the details of the financial counterpart of its net lending/net borrowing and the composition of its financial net worth.

As it might be expected, these accounts are particularly detailed for the financial corporations, which play a critical role in the management of the financial relations and constitute the prime statistical course for the financial accounts. Further, all the changes in the price of assets are recorded in a “revaluation account”. As on the asset side the cash holdings (or on the liability side the loans) are not subject to revaluation, no revaluations are required for these.

The institutional sectors group together the institutional units (defined as entities – such as individual households or firms – that are characterised by their decision-making autonomy) with other units that display a similar type of economic behaviour. According to ESA95 principles, seven main institutional sectors are defined in the national accounts: non-financial corporations;

⁸A financial term measuring the rapidity and facility with which an asset can be transformed into cash or another generally accepted means of payment: a bank account is highly liquid, but a share is less liquid because it first has to be sold, requiring payment of a commission).

monetary financial institutions; insurance corporations and pension funds; other financial intermediaries (including in particular investment funds); general government⁹; households; and non profit institutions serving households. These main sectors can be further split into sub-sectors. In addition, the financial relations between domestic sectors and the rest of the world are reported in the rest of the world account.

The net worth of the various agents, in particular households, is not made up solely of financial assets and liabilities but also includes non-financial assets. For the household sector, non-financial assets include dwellings and in some countries assets in the form of housing are greater than households' financial assets. The value of the non-financial assets (also called "capital stock") is usually estimated by the perpetual inventory method (PIM). The PIM method is based on data for past flows of gross fixed capital formation in volume and applies the simple principle that today's stock is equal to what was previously invested minus what has since been used up. Then, the balance sheet accounts - defined as a synthesis of the tables of financial and non-financial stocks for the various institutional sectors - allow a visualisation in a single table of all the assets and liabilities of each sector and hence the measurement the total wealth of macroeconomic agents at a given time. The estimates are made at market prices and hence provide the best measure of this wealth at this date. The estimation of this wealth is nevertheless limited to the items that the national accountants consider as eligible to be considered as assets or liabilities. The following table indicates a simplified balance sheet account in order to introduce the definition of "net worth" (Lequiller and Blades, 2006).

Table 6: Simplified balance sheet account at 31/12/T for a given sector

	Assets	Liabilities
Non-financial assets	NFA	Net worth (including shares and other equities) C=A-L
Financial assets	FA	Liabilities (excluding shares and other equities) L
Total	A=NFA+FA	Total A

Source: Lequiller and Blades (2006).

As Table 6 shows, the net worth of an institutional sector is equal to the total assets A (financial assets (FA) and non-financial assets (NFA)) less total liabilities L (excluding shares and other equity appearing under liabilities)¹⁰. The balance sheet accounts permit an explanation of how the net worth is created, in other words, the way in which the stock of net worth at the end of a given period is arrived at from the stock of net worth at the end of the previous period. Changes in

⁹ General government (ESA95 definition) can be defined as the sector that includes all institutional units which are other nonmarket producers whose output is intended for individual and collective consumption, and mainly financed by compulsory payments made by units belonging to other sectors, and/or all institutional units principally engaged in the redistribution of national income and wealth. It comprises four sub-sectors: central government, state government, local government and social security funds.

¹⁰ Since households have no shares on the liability side of their accounts, their net worth is equal to assets minus liabilities. In the case of corporations, the net worth includes shares, because the recording of shares in the liabilities column is conventional and does not mean that the corporations owe these amounts.

stocks can be due to several factors: consumption of fixed capital, actual changes in non-financial and financial assets, revaluations and other changes in volume. Considered together, these changes lead to the table on balance sheet accounts.

3 Building a financial SAM for Luxembourg

As already mentioned in the introduction of this paper, this is the first financial SAM built for Luxembourg. The national statistical office (Adam *et al.*, 2010) has built a SAM with real accounts for the year 2004. Usually, given the amount of work needed to build a new SAM from scratch, SAMs are typically derived by updating old ones on the basis of non-survey techniques and fragmentary new data. Therefore, it should be emphasised at this stage that the present SAM for Luxembourg for the year 2007 has been built from scratch and independently of the 2004 real¹¹ SAM as it incorporates different sector disaggregation (putting more emphasis on financial sectors) as well as detailed current and capital account transactions between institutional sectors that have been published for the first time in April 2011 (Statec, 2011b).

The financial SAM developed in this paper serves two purposes. First, it helps in understanding the structure of the economy of Luxembourg and its main characteristics. Second, it provides a comprehensive database for the financial CGE model. Most of the parameters used in such model are directly derived from the financial SAM, while some other parameters such as elasticities of substitution are drawn from the literature.

Several sources of data for building the financial SAM for Luxembourg have been used. The major sources for real accounts are the national accounts (Statec, 2011d), the non-financial institutional accounts for distributive transactions among institutional sectors¹² and the use and supply tables for 2007 (Statec, 2010b). It should also be mentioned at this stage that a significant amount of very detailed unpublished data has been directly transmitted to the author by Statec, as these data are not part of official programme of publications of the latter institution (i.e. the disaggregated data by commodity and by production activity or detailed data regarding distributive transactions among institutional sectors: whom-to-whom). Other sources of data have been the Ministry of Finance, Administration of direct taxation (Administration des contributions directes) and Administration of indirect taxation (Administration de l'enregistrement et des domaines). For financial accounts, the principal source has been the financial accounts data elaborated together by the Central Bank of Luxembourg ("Banque centrale du Luxembourg") and the national statistical office (Statec, 2011b and 2011c).

¹¹ Documentation about the SAM with real accounts for the year 2004 built by Statec is very limited (see Adam *et al.*, 2010).

¹²The full sequence of non-financial institutional accounts has been published by the national statistical office for the first time only in April 2011. Luxembourg was the only European Union Member State not compiling these accounts.

As previously mentioned, the design and the construction methods of the SAMs are not standardised. However, a SAM should satisfy two conditions: the matrix must be square and the row total and column total for each account must be equal. Due to the use of the same sources of data and very small statistical discrepancies, the financial SAM for Luxembourg was balanced without needing to use any balancing method in order to fulfil the requirement that the row total and column total for each account should be equal. The fully balanced SAM with real accounts (macro and micro) and fully balanced SAM with financial accounts (macro and micro) are provided in Tables 7, 9, 15 and Appendix C.

The financial SAM for Luxembourg is denominated in millions of euros. In the presentation of the SAM with real accounts and the SAM with financial accounts, the cells are zero either when the values of transaction happen to be zero or when the transactions corresponding to the cells are not defined.

In order to better understand the building process of a financial SAM for Luxembourg, real and financial accounts are presented separately. First, the real accounts are presented and analysed followed by the financial accounts. Furthermore, each account (real or financial) is identified following ESA95 classifications. The latter are indicated between brackets after each account.

3.1 Real accounts in the SAM

The SAM with real accounts for Luxembourg follows the structure of the SAM basic framework presented in Table 2. It incorporates the same thirteen main accounts: commodities, production activities, factors of production (capital and labour), four institutional sectors (non-financial corporations, financial corporations, government and households), taxes less subsidies, transaction costs, savings-investment, changes in stocks and the external sector. The distinction between the commodities and the production activities allows differentiating between the supply from the domestic sources and from imports and allows disaggregating the supply of goods and services by product and by type of supplier (Eurostat and European Commission, 1996 and 2008). Thus, it enables, in principle, a set-up in which production activities can be shown to produce several types of commodities. The detailed classification of commodities and production activities (following ESA95 nomenclature) used in the financial SAM for Luxembourg and their corresponding codes¹³ are given in Appendix A. Financial activities have been further disaggregated as the financial account accounted for around 30 percent of value added of Luxembourg economy in the last decade.

The government activities have been split into a main government account and taxes - subsidies account. Each of these accounts is discussed in the following sub-sections.

¹³ In Appendix A, the codes corresponding to the classification by sector are denoted by sec followed by the number of the sector. Both commodities and production sectors follow the same classification and use the same codes.

In order to build the disaggregated SAM - by keeping a high degree of consistency with the official macro economic data, which are usually regarded with higher confidence than micro economic data - it is important to start by developing an aggregate (macro) SAM. Basically, each cell in the macro SAM gives the sum of sub-matrices in the disaggregated SAM. This procedure guarantees that the disaggregated SAM matches perfectly the aggregate SAM. Table 7 presents this aggregate SAM with real accounts, which provides a macroeconomic picture of the economy. Further, the discussion of each real account is based on the disaggregated SAM, presented in Table 9, as the latter contains all the necessary details for policy simulations.

The thirteen main accounts will be presented first by column (supply side) and then by row (demand side) in order to facilitate reading and understanding of the SAM.

3.1.1 Commodity accounts

The commodity account explains the trade flows at the market level. It describes the supply of commodities from the output (goods and services) of activities (producers) and the rest of the world (imports including tariffs on imported goods), on the one hand, and sales of these commodities to activities (as intermediate input) and to the final demand (households, government, investment, and the rest of the world) on the other hand. In other words, the purpose of commodities accounts is to show how the available commodities are used (Eurostat and European Commission, 1996).

Seventeen different types of commodities are distinguished in the SAM, following ESA95 disaggregation. The exact correspondence between the classification of the commodities in the SAM for Luxembourg and ESA95 Nace rev1 is given in Appendix A. However, in order to facilitate the reading of the next sections, Table 8 presents the disaggregation of these seventeen commodities and production activities distinguished in the SAM.

In table 9, on the supply side (in the columns), the commodities are delivered to the domestic market either by the domestic activities/production (ESA95 P1), cells (18-34,1-17), or by the rest of the world through imports (ESA95 P7), cells (65,1-17). The total supply of goods and services to the domestic market (ESA95 P1+D21-D31+P7) is recorded in the cells (66,1-17).

Table 7: Aggregated SAM with real accounts for Luxembourg (2007) in outline (in millions of euros)

ACCOUNTS		Commodities	Production activities	Factors of production		Institutional sectors				Taxes	Subs	Savings-Investment		Ch. in stocks	ROW	Total
				Capital	Labour	S11	S12	S13	S1M			Public	Private			
Commodities			69'636					5'535	12'002			1236	6'540	69	65'956	160'974
Production activities		103'443														103'443
Factors of productions	Capital		10'987													10'987
	Labour		12'130											1040		13'170
Institutional sectors	S11			4'853		0	2'087	149	89						7'797	14'976
	S12			3'692		3'938	241	84	965						132'112	141'031
	S13			127		141	436	0	11	13'557	-562				45	13'755
	S1M			2'316	8'123	172	1346	3'957	0						338	16'252
Taxes		3'978	6'975				111		2'104						463	13'631
Subsidies		-294	-288													-582
Savings-Investments	Public		602					2'404					106		-1'373	1'740
	Private		3'401			1'519	2'623		541			502	421		-1'873	7'134
Ch. in stock												2	67			69
ROW		53'847			5'047	9'206	134'186	1626	539	74	-21				3	204'508
Total		160'974	103'443	10'987	13'170	14'976	141'031	13'755	16'252	13'631	-582	1'740	7'134	69	204'508	

Sources: Statec (2011b and 2011d) and author's calculations.

Note: For presentation purposes, transaction costs are integrated into domestically produced commodities for the domestic market, taxes less subsidies account is split (in taxes and subsidies) as well as savings – investment account (in public and private).

Notations: S11 - non-financial corporations; S12 - financial corporations, S13 - government; S1M - households and NPISHs; ROW – rest of the world.

Table 8: Seventeen commodities / production activities distinguished in the SAM

1	Agriculture, hunting and forestry; fishing
2	Mining and quarrying
3	Manufacturing
4	Electricity, gas and water supply
5	Construction
6	Wholesale and retail trade, repair of motor vehicles, motorcycles and personal and household goods
7	Hotels and restaurants
8	Transport, storage and communication
9	Financial intermediation services
10	Insurance
11	Services auxiliary to financial intermediation and insurance
12	Real estate activities; renting
13	Business activities
14	Public administration and defence; compulsory social security
15	Education
16	Health and social work
17	Other community, social and personal service activities; private households with employed persons

Taxes less subsidies by commodity (ESA95 D21-D31), cells (41-45,1-17), and trade and transport margins by commodity, cells (54-61,1-17), are registered in the columns to balance the corresponding commodities accounts, as domestic output and imports are valued at basic prices, while the uses (in the rows) are valued at purchaser's prices¹⁴ (Kafai, 2009). Other taxes and subsidies accounts, cells (46-53), include taxes on capital and labour, tariffs, taxes on income, taxes on interest revenue paid by residents and non-residents and taxes less subsidies on production. These taxes are presented separately in this account for modelling purposes. The transactions costs and indirect costs on commodities are discussed later on, in sections 3.1.9 and 3.1.10.

The services sector supply the highest share of commodities to the domestic market with 84.4 percent, followed by industrial commodities with 10.4 percent, construction goods with 4.9 percent, and agricultural goods with 0.3 percent. Nevertheless, the high share of the services in the economy - with financial (including insurance) services and related activities representing around 65 percent of that share - underlines the country's high services profile. Further, the very low share of agricultural products indicates that the Luxembourg economy has turned the page on agricultural production. Most of agricultural goods consumed in the last decade were imported.

On the demand side (in the rows), intermediate consumption (ESA95 P2) is mapped according to the commodity and activity types, indicating clearly the specific consumption of each production activity, cells (1-17,18-34). Households' final consumption at purchaser's prices (ESA95 P3), cells (1-17,40), includes both consumption by the households sector and by the non-profit

¹⁴ The data by commodity is not publicly available (as it is not a part of official programme of publications of national statistical office (Statec)) and has been transmitted directly to the author by Statec on personal request.

institutions serving households (NPISHs) following the ESA95 disaggregation. Furthermore, according to ESA95 accounting principles, final consumption includes the goods and services produced as outputs of unincorporated enterprises owned by households that are retained for their own consumption. It is also worth mentioning that the final households' consumption as presented in SAM includes the consumption of nationals abroad and excludes the consumption of non-residents in Luxembourg. So, it represents the final national consumption of households and NPISHs. Services represent the highest share of households' consumption with 52.6 percent, followed by industrial commodities (including energy) with 44.3 percent, agricultural commodities with 2.5 percent and finally construction goods with 0.6 percent.

The largest share of final government consumption (ESA95 P3) consists of services (96.8 percent). It includes the value of the commodities (services) produced by the government itself and purchases of products by the government from the market producers. It implies that the government just pays the commodities provided to the household by the seller (Eurostat and European Commission, 1996). The services produced by the government itself consist mostly of public services which are produced by the public administration, education, and health and social work sectors in the SAM (sec14, sec15 and sec16). The "education" and "health and social work" sectors represent much larger shares of services produced by the government compared to most of the euro area countries thereby reflecting a significant involvement of government in social affairs.

The investment commodities (ESA95 P51+P53) are registered in cells (1-17,62-63) and the changes in inventories (ESA95 P52) in cells (1-17,64). Investment commodities represent the acquisitions less disposals of fixed assets by the domestic producers. They are recorded by type of commodity and should not be interpreted as investment carried out in a particular production activity. The investment-savings account has been split into public, cells (1-17,62), and private, cells (1-17,63), investment commodities. Luxembourg public demand for investment goods consists mostly of construction (90 percent), and manufacturing (9 percent). The composition of the private demand for investment goods is quite different: the construction sector accounts for 50 percent, manufacturing for 37.4 percent and renting and business activities for 12 percent. The very small remaining part represents the acquisitions of other commodities.

Exports (ESA95 P6), cells (1-17, 65) are discussed in section 3.1.8 together with the external sector account.

Finally, for each type of commodity, the total demand (row total), both domestically demanded and exported (ESA95 P2+P3+P5+P6), is equal to the total supply (column total), both domestically produced and imported (ESA95 P1+D21-D31+P7).

Table 9: Disaggregated SAM with real accounts for Luxembourg (2007) in outline

		Commodities																
		com1	com2	com3	com4	com5	com6	com7	com8	com9	com10	com11	com12	com13	com14	com15	com16	com17
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Commodities	com1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com9	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com11	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com12	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com13	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com14	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com15	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com16	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com17	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Production activities	sec1	18	277	0	11	0	3	0	10	0	0	0	0	0	0	0	0	
	sec2	19	0	73	6	0	0	0	0	0	0	0	0	2	1	0	0	
	sec3	20	0	0	9378	5	6	171	0	11	0	0	0	49	453	0	0	
	sec4	21	0	0	33	1093	53	0	0	5	0	0	0	90	20	1	0	
	sec5	22	0	0	21	0	4715	14	0	0	0	0	0	49	5	0	0	
	sec6	23	0	0	5	0	1	6030	3	13	0	0	0	121	621	0	0	
	sec7	24	0	0	0	0	0	5	1075	0	0	0	0	4	7	0	0	
	sec8	25	0	0	30	0	232	52	4	5667	4	0	0	37	57	0	0	
	sec9	26	0	0	0	0	0	0	0	0	38522	0	13	61	0	0	0	
	sec10	27	0	0	0	0	0	0	0	0	0	2686	0	8	0	0	0	
	sec11	28	0	0	4	0	0	0	0	0	0	0	13370	0	0	0	0	
	sec12	29	0	0	0	0	0	21	14	0	0	0	0	4198	17	0	0	
	sec13	30	0	0	110	1	0	38	10	10	0	0	0	35	6596	0	2	
	sec14	31	1	0	23	0	17	0	0	50	0	0	0	13	4	2269	0	
	sec15	32	0	0	0	0	0	0	4	0	0	0	0	0	1	2	1350	
	sec16	33	0	0	0	0	0	2	22	0	0	0	0	4	0	0	214	
	sec17	34	0	0	4	0	0	14	2	5	0	0	0	9	5	1	1	

Note: All zero cells represent either non-defined transactions or transactions with zero value. Figures expressed in millions of euros.

Notation: Com-Commodity; Sec-Sector.

Table 9: Disaggregated SAM with real accounts for Luxembourg (2007) in outline (continued)

			Commodities																
			com1	com2	com3	com4	com5	com6	com7	com8	com9	com10	com11	com12	com13	com14	com15	com16	com17
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Factors of production	K	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	L	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Institutional sectors	S11	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	S12	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	S13	39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	S1M	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
VAT on IC		41	2	0	127	11	53	3	2	19	5	16	4	22	451	0	1	1	3
VAT on final cons.		42	14	0	611	18	10	18	27	68	9	16	0	16	19	0	2	3	54
VAT on GCF		43	0	0	11	0	236	0	0	0	0	0	0	0	154	0	0	0	0
VAT on exports		44	0	0	199	0	0	157	0	49	147	0	0	0	83	0	0	0	0
Sub. on products		45	-2	0	0	-3	0	0	-1	-269	0	0	0	0	0	0	0	-4	-16
Taxes on capital		46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Taxes on labour		47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tariffs		48	0	0	1336	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Taxes on income		49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Taxes on int. rev. paid by res.		50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Taxes on int. rev. paid by non-res.		51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Taxes on production		52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sub. on production		53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TradeM on IC		54	22	4	507	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TradeM on HC		55	133	1	1911	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TradeM on GCF		56	1	0	205	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TradeM on exports		57	10	1	748	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TransM on IC		58	2	2	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TransM on HC		59	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TranM on GCF		60	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TransM on exports		61	1	1	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sav - Inv	Public	62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Private	63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ch. in stocks		64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ROW		65	446	417	16621	249	1	145	358	1856	11099	382	14978	179	6660	0	108	74	272
Total		66	907	498	31976	1373	5327	6671	1531	7485	49787	3100	28366	4897	15152	2272	1464	2192	1596

Note: All zero cells represent either non-defined transactions or transactions with zero value. Figures expressed in millions of euros.

Notations: VAT on IC – Value added tax on intermediate consumption; VAT on final cons. – Value added tax on final consumption; VAT on GCF – value added tax on gross capital formation; TradeM. on IC – Trade margins on intermediate consumption; TradeM. on HC – Trade margins on household consumption; TradeM. on exports – Trade margins on exports; TransM on IC – Transport margins on intermediate consumption; TransM. on HC – Transport margins on household consumption; TransM. on GCF – Transport margins on gross capital formation; TransM. on exports – Transport margins on exports; Sav – Savings; Inv – Investments; S11 - non-financial corporations; S12 - financial corporations, S13 - government; S1M - households and NPIS; ROW – Rest of the world.

Table 9: Disaggregated SAM with real accounts for Luxembourg (2007) in outline (continued)

		Production activities																
		sec1	sec2	sec3	sec4	sec5	sec6	sec7	sec8	sec9	sec10	sec11	sec12	sec13	sec14	sec15	sec16	sec17
		18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
Commodities	com1	1	46	0	280	1	1	0	58	0	0	0	0	0	0	0	0	0
	com2	2	2	24	72	327	44	0	0	9	0	0	0	0	0	0	0	0
	com3	3	87	10	4953	86	897	301	326	938	147	5	134	24	211	51	49	280
	com4	4	5	2	353	298	10	53	20	21	94	0	4	6	9	42	8	19
	com5	5	5	0	37	28	81	78	7	94	75	9	16	36	23	219	37	53
	com6	6	0	2	175	0	3	332	1	18	0	0	0	26	18	10	1	2
	com7	7	0	0	15	1	10	39	4	31	21	4	25	2	35	13	3	30
	com8	8	0	0	56	5	21	102	5	951	226	10	155	8	633	33	2	10
	com9	9	2	1	63	6	28	172	12	53	5278	390	8091	46	72	49	2	18
	com10	10	4	0	15	3	20	25	3	46	40	517	9	39	21	6	0	2
	com11	11	0	0	0	0	0	0	0	0	24475	973	1275	0	0	0	0	0
	com12	12	2	1	133	10	421	362	89	225	179	25	188	153	282	73	17	15
	com13	13	3	4	812	63	1368	2126	25	801	2178	73	493	320	2010	213	33	155
	com14	14	0	0	0	0	0	0	0	0	15	1	9	0	0	2	0	0
	com15	15	0	0	5	0	2	4	1	7	0	0	1	0	24	4	10	5
	com16	16	6	0	0	0	0	0	0	1	0	0	0	0	0	7	1	16
	com17	17	4	0	20	1	14	41	13	8	28	1	21	0	69	1	1	7
Production activities	sec1	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec2	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec3	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec4	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec5	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec6	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec7	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec8	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec9	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec10	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec11	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec12	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec13	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec14	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec15	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec16	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec17	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: All zero cells represent either non-defined transactions or transactions with zero value. Figures expressed in millions of euros.

Notation: Com-Commodity; Sec-Sector.

Table 9: Disaggregated SAM with real accounts for Luxembourg (2007) in outline (continued)

			Production activities																
			sec1	sec2	sec3	sec4	sec5	sec6	sec7	sec8	sec9	sec10	sec11	sec12	sec13	sec14	sec15	sec16	sec17
			18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
Factors of production	K	35	74	15	815	187	421	1238	81	713	1'858	370	1'854	2'120	903	1	6	278	52
	L	36	38	12	1'312	96	989	1'115	279	1'048	1'982	171	512	111	1'643	894	772	749	408
Institutional sectors	S11	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	S12	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	S13	39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	S1M	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VAT on IC		41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VAT on final cons.		42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VAT on GCF		43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VAT on exports		44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sub. on products		45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Taxes on capital		46	15	3	164	38	85	249	16	144	374	74	373	427	182	0	1	56	11
Taxes on labour		47	11	3	392	29	296	333	83	313	593	51	153	33	491	387	334	324	176
Tariffs		48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Taxes on income		49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Taxes on int. rev. paid by res.		50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Taxes on int. rev. paid by non-res.		51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Taxes on production		52	1	0	3	4	5	6	0	6	708	0	0	19	2	0	1	1	2
Sub. on production		53	-81	0	-28	-1	-10	-13	-5	-29	0	0	0	-71	-16	0	-1	-10	-23
TradeM on IC		54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TradeM on HC		55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TradeM on GCF		56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TradeM on exports		57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TransM on IC		58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TransM on HC		59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TransM on GCF		60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TransM on exports		61	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sav - Inv	Public	62	0	0	0	0	0	0	0	0	0	0	0	0	0	372	81	136	14
	Private	63	76	4	428	112	97	233	72	685	326	20	62	955	191	0	0	0	141
Ch. in stocks		64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ROW		65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total		66	907	498	31976	1373	5327	6671	1531	7485	49787	3100	28366	4897	15152	2272	1464	2192	1596

Note: All zero cells represent either non-defined transactions or transactions with zero value. Figures expressed in millions of euros.

Notations: VAT on IC – Value added tax on intermediate consumption; VAT on final cons. – Value added tax on final consumption; VAT on GCF – value added tax on gross capital formation; TradeM. on IC – Trade margins on intermediate consumption; TradeM. on HC – Trade margins on household consumption; TradeM. on exports – Trade margins on exports; TransM on IC – Transport margins on intermediate consumption; TransM. on HC – Transport margins on household consumption; TransM. on GCF – Transport margins on gross capital formation; TransM. on exports – Transport margins on exports; Sav – Savings; Inv – Investments; S11 – non-financial corporations; S12 – financial corporations, S13 – government; SIM – households and NPISHs; ROW – rest of the world.

Table 9: Disaggregated SAM with real accounts for Luxembourg (2007) in outline (continued)

			Factors of production		Institutional sectors				VAT on IC	VAT on final cons	VAT on GCF	VAT on exp.	Sub. on produ cts	Taxes on K	Taxes on L	Tariffs	Taxes on income	Taxes on int. paid by res.	Taxes on int. paid by non-res.	Taxes on prod.	Sub. on prod.	
			K	L	S11	S12	S13	S1M														
			35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	
com1	1	0	0	0	0	0	297	0	0	0	0	0	0	0	0	0	0	0	0	0		
com2	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0		
com3	3	0	0	0	0	176	5012	0	0	0	0	0	0	0	0	0	0	0	0	0		
com4	4	0	0	0	0	0	303	0	0	0	0	0	0	0	0	0	0	0	0	0		
com5	5	0	0	0	0	0	71	0	0	0	0	0	0	0	0	0	0	0	0	0		
com6	6	0	0	0	0	0	138	0	0	0	0	0	0	0	0	0	0	0	0	0		
com7	7	0	0	0	0	0	867	0	0	0	0	0	0	0	0	0	0	0	0	0		
com8	8	0	0	0	0	87	577	0	0	0	0	0	0	0	0	0	0	0	0	0		
com9	9	0	0	0	0	0	380	0	0	0	0	0	0	0	0	0	0	0	0	0		
com10	10	0	0	0	0	0	339	0	0	0	0	0	0	0	0	0	0	0	0	0		
com11	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
com12	12	0	0	0	0	0	2496	0	0	0	0	0	0	0	0	0	0	0	0	0		
com13	13	0	0	0	0	61	94	0	0	0	0	0	0	0	0	0	0	0	0	0		
com14	14	0	0	0	0	2210	28	0	0	0	0	0	0	0	0	0	0	0	0	0		
com15	15	0	0	0	0	1207	174	0	0	0	0	0	0	0	0	0	0	0	0	0		
com16	16	0	0	0	0	1541	615	0	0	0	0	0	0	0	0	0	0	0	0	0		
com17	17	0	0	0	0	252	610	0	0	0	0	0	0	0	0	0	0	0	0	0		
sec1	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
sec2	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
sec3	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
sec4	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
sec5	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
sec6	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
sec7	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
sec8	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
sec9	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
sec10	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
sec11	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
sec12	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
sec13	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
sec14	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
sec15	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
sec16	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
sec17	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

Note: All zero cells represent either non-defined transactions or transactions with zero value. Figures expressed in millions of euros.

Notations: VAT on IC – Value added tax on intermediate consumption; VAT on final cons. – Value added tax on final consumption; VAT on GCF – value added tax on gross capital formation.

S11 - non-financial corporations; S12 - financial corporations, S13 - government; S1M - households and NPISHs.

Table 9: Disaggregated SAM with real accounts for Luxembourg (2007) in outline (continued)

			Factors of production		Institutions				VAT on IC	VAT on final cons	VAT on GCF	VAT on exp.	Sub. on products	Taxes on K	Taxes on L	Tariffs	Taxes on income	Taxes on int. paid by res.	Taxes on int. paid by non-res.	Taxes on prod.	Sub. on prod.	
			K	L	S11	S12	S13	S1M														
			35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	
Factors of production	K	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	L	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Institutional sectors	S11	37	4853	0	0	2087	149	89	0	0	0	0	0	0	0	0	0	0	0	0		
	S12	38	3692	0	3938	241	84	965	0	0	0	0	0	0	0	0	0	0	0	0		
	S13	39	127	0	141	436	0	11	699	861	390	618	-294	2211	4006	1336	2567	60	51	758		
	S1M	40	2316	8123	172	1346	3'957	0	0	0	0	0	0	0	0	0	0	0	0	0		
VAT on IC		41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
VAT on final cons.		42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
VAT on GCF		43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
VAT on exports		44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Sub. on products		45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Taxes on capital		46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Taxes on labour		47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Tariffs		48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Taxes on income		49	0	0	0	0	0	2104	0	0	0	0	0	0	0	0	0	0	0	0		
Taxes on int. rev. paid by res.		50	0	0	0	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Taxes on int. rev. paid by non-res.		51	0	0	0	51	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Taxes on production		52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Sub. on production		53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
TradeM on IC		54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
TradeM on HC		55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
TradeM on GCF		56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
TradeM on exports		57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
TransM on IC		58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
TransM on HC		59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
TransM on GCF		60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
TransM on exports		61	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Sav - Inv	Public	62	0	0	0	0	2404	0	0	0	0	0	0	0	0	0	0	0	0	0		
	Private	63	0	0	1519	2623	0	541	0	0	0	0	0	0	0	0	0	0	0	0		
Ch. in stocks		64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
ROW		65	0	5047	9206	134186	1626	539	20	25	11	18	0	0	0	0	0	0	0	-21		
Total		66	10987	13170	14976	141031	13755	16253	719	886	401	635	-294	2211	4006	1336	2567	60	51	758	-288	

Note: All zero cells represent either non-defined transactions or transactions with zero value. Figures expressed in millions of euros.

Notations: VAT on IC – Value added tax on intermediate consumption; VAT on final cons. – Value added tax on final consumption; VAT on GCF – value added tax on gross capital formation; TradeM. on IC – Trade margins on intermediate consumption; TradeM. on HC – Trade margins on household consumption; TradeM. on exports – Trade margins on exports; TransM on IC – Transport margins on intermediate consumption; TransM. on HC – Transport margins on household consumption; TransM. on GCF – Transport margins on gross capital formation; TransM. on exports – Transport margins on exports; Sav – Savings; Inv – Investments; S11 - non-financial corporations; S12 - financial corporations, S13 - government; S1M - households and NPISHs; ROW – rest of the world.

Table 9: Disaggregated SAM with real accounts for Luxembourg (2007) in outline (continued)

			TradeM on IC	TradeM on HC	TradeM on GCF	TradeM on exports	TransM on IC	TransM on HC	TransM on GCF	TransM on exports	Sav - Inv		Ch. in stocks	ROW	Total
											Public	Private			
			54	55	56	57	58	59	60	61	62	63	64	65	66
Commodities	com1	1	0	0	0	0	0	0	0	0	0	7	8	206	907
	com2	2	0	0	0	0	0	0	0	0	0	0	1	19	498
	com3	3	0	0	0	0	0	0	0	0	12	2443	-30	15692	31976
	com4	4	0	0	0	0	0	0	0	0	0	0	8	104	1373
	com5	5	0	0	0	0	0	0	0	0	110	3269	47	8	5327
	com6	6	534	2044	206	759	0	0	0	0	0	0	0	2390	6671
	com7	7	0	0	0	0	0	0	0	0	0	0	0	426	1531
	com8	8	0	0	0	0	28	12	5	34	0	0	0	4506	7485
	com9	9	0	0	0	0	0	0	0	0	0	0	0	3514	49787
	com10	10	0	0	0	0	0	0	0	0	0	0	0	2008	3100
	com11	11	0	0	0	0	0	0	0	0	0	0	0	1643	28366
	com12	12	0	0	0	0	0	0	0	0	0	0	0	184	4897
	com13	13	0	0	0	0	0	0	0	0	14	784	20	3385	15152
	com14	14	0	0	0	0	0	0	0	0	0	0	0	6	2272
	com15	15	0	0	0	0	0	0	0	0	0	0	0	14	1464
	com16	16	0	0	0	0	0	0	0	0	0	0	0	4	2192
	com17	17	0	0	0	0	0	0	0	0	1	36	14	244	1596
Production activities	sec1	18	0	0	0	0	0	0	0	0	0	0	0	0	302
	sec2	19	0	0	0	0	0	0	0	0	0	0	0	0	82
	sec3	20	0	0	0	0	0	0	0	0	0	0	0	0	10074
	sec4	21	0	0	0	0	0	0	0	0	0	0	0	0	1294
	sec5	22	0	0	0	0	0	0	0	0	0	0	0	0	4803
	sec6	23	0	0	0	0	0	0	0	0	0	0	0	0	6796
	sec7	24	0	0	0	0	0	0	0	0	0	0	0	0	1092
	sec8	25	0	0	0	0	0	0	0	0	0	0	0	0	6083
	sec9	26	0	0	0	0	0	0	0	0	0	0	0	0	38596
	sec10	27	0	0	0	0	0	0	0	0	0	0	0	0	2694
	sec11	28	0	0	0	0	0	0	0	0	0	0	0	0	13374
	sec12	29	0	0	0	0	0	0	0	0	0	0	0	0	4255
	sec13	30	0	0	0	0	0	0	0	0	0	0	0	0	6805
	sec14	31	0	0	0	0	0	0	0	0	0	0	0	0	2381
	sec15	32	0	0	0	0	0	0	0	0	0	0	0	0	1358
	sec16	33	0	0	0	0	0	0	0	0	0	0	0	0	2146
	sec17	34	0	0	0	0	0	0	0	0	0	0	0	0	1308

Note: All zero cells represent either non-defined transactions or transactions with zero value. Figures expressed in millions of euros.

Notations: TradeM. on IC – Trade margins on intermediate consumption; TradeM. on HC – Trade margins on household consumption; TradeM. on exports – Trade margins on exports; TransM on IC – Transport margins on intermediate consumption; TransM. on HC – Transport margins on household consumption; TransM. on GCF – Transport margins on gross capital formation; TransM. on exports – Transport margins on exports; Sav – Savings; Inv – Investments; ROW – rest of the world.

Table 9: Disaggregated SAM with real accounts for Luxembourg (2007) in outline (continued)

			TradeM on IC	TradeM on HC	TradeM on GCF	TradeM on exports	TransM on IC	TransM on HC	TransM on GCF	TransM on exports	Sav - Inv		Ch. in stocks	ROW	Total
											Public	Private			
			54	55	56	57	58	59	60	61	62	63	64	65	66
Factors of production	K	35	0	0	0	0	0	0	0	0	0	0	0	0	10987
	L	36	0	0	0	0	0	0	0	0	0	0	0	1040	13170
Institutional sectors	S11	37	0	0	0	0	0	0	0	0	0	0	0	7797	14976
	S12	38	0	0	0	0	0	0	0	0	0	0	0	132112	141031
	S13	39	0	0	0	0	0	0	0	0	0	0	0	45	13755
	S1M	40	0	0	0	0	0	0	0	0	0	0	0	338	16253
VAT on IC		41	0	0	0	0	0	0	0	0	0	0	0	0	719
VAT on final cons.		42	0	0	0	0	0	0	0	0	0	0	0	0	886
VAT on GCF		43	0	0	0	0	0	0	0	0	0	0	0	0	401
VAT on exports		44	0	0	0	0	0	0	0	0	0	0	0	0	635
Sub. on products		45	0	0	0	0	0	0	0	0	0	0	0	0	-294
Taxes on capital		46	0	0	0	0	0	0	0	0	0	0	0	0	2211
Taxes on labour		47	0	0	0	0	0	0	0	0	0	0	0	0	4006
Tariffs		48	0	0	0	0	0	0	0	0	0	0	0	0	1336
Taxes on income		49	0	0	0	0	0	0	0	0	0	0	0	0	2567
Taxes on int. rev. paid by res.		50	0	0	0	0	0	0	0	0	0	0	0	0	60
Taxes on int. rev. paid by non-res.		51	0	0	0	0	0	0	0	0	0	0	0	0	51
Taxes on production		52	0	0	0	0	0	0	0	0	0	0	0	0	758
Sub. on production		53	0	0	0	0	0	0	0	0	0	0	0	0	-288
TradeM on IC		54	0	0	0	0	0	0	0	0	0	0	0	0	534
TradeM on HC		55	0	0	0	0	0	0	0	0	0	0	0	0	2044
TradeM on GCF		56	0	0	0	0	0	0	0	0	0	0	0	0	206
TradeM on exports		57	0	0	0	0	0	0	0	0	0	0	0	0	759
TransM on IC		58	0	0	0	0	0	0	0	0	0	0	0	0	28
TransM on HC		59	0	0	0	0	0	0	0	0	0	0	0	0	12
TransM on GCF		60	0	0	0	0	0	0	0	0	0	0	0	0	5
TransM on exports		61	0	0	0	0	0	0	0	0	0	0	0	0	34
Sav - Inv	Public	62	0	0	0	0	0	0	0	0	0	106	0	-1373	1740
	Private	63	0	0	0	0	0	0	0	0	502	421	0	-1873	7134
Ch. in stocks		64	0	0	0	0	0	0	0	0	2	67	0	0	69
ROW		65	0	0	0	0	0	0	0	0	0	0	0	3	204508
Total		66	534	2044	206	759	28	12	5	34	1740	7134	69	204508	

Note: All zero cells represent either non-defined transactions or transactions with zero value. Figures expressed in millions of euros.

Notations: VAT on IC – Value added tax on intermediate consumption; VAT on final cons. – Value added tax on final consumption; VAT on GCF – value added tax on gross capital formation; TradeM. on IC – Trade margins on intermediate consumption; TradeM. on HC – Trade margins on household consumption; TradeM. on exports – Trade margins on exports; TransM on IC – Transport margins on intermediate consumption; TransM. on HC – Transport margins on household consumption; TransM. on GCF – Transport margins on gross capital formation; TransM. on exports – Transport margins on exports; Sav – Savings; Inv – Investments; S11 - non-financial corporations; S12 - financial corporations, S13 - government; S1M - households and NPISHs; ROW – rest of the world.

3.1.2 Production activities accounts

The production activities accounts are disaggregated in the same way as the commodity accounts, distinguishing seventeen activities. On the expenditure side (in the columns), the production accounts register the intermediate consumption (ESA95 P2), cells (1-17,18-34), the net capital and labour expenditures (ESA95 B1g-K1-D29+D39-D51B-D59-D61), cells (35-36,18-34), the taxes on capital (ESA95 D51B+D59), cells (46,18-34), the taxes on labour/social security contributions (ESA95 D61), cells (47,18-34), the taxes on production (ESA95 D29), cells (52,18-34), and depreciation (ESA95 K1), cells (62-63,18-34). Subsidies on production (ESA95 D39), cells (53,18-34), are paid by the government to the production activities and are registered with a negative sign on the expenditure side. The domestic output delivered to the domestic market at basic prices, the column totals, is also shown in the rows of the production activities accounts, cells (18-34,66).

The capital and labour expenditures are valued at factor costs. A methodological adjustment is needed for the imputed social contributions (ESA95 D612)¹⁵. They are subtracted from the total social contributions and distributed as a labour expense only to the four production activities of the SAM that are related to government manners (sec14-sec17). It was disaggregated according to the labour shares of these activities in total value added. Imputed social contributions are discussed in more detail in sub-section 3.1.6. The highest labour costs are incurred by the services activities with 81.7 percent of the total wage bill, the manufacturing activities with 9.8 percent and the construction activities with 7.4 percent.

The highest capital outlays are incurred by the services activities, 86.2 percent, followed by the manufacturing activities, 7.4 percent, and the construction activities with 3.8 percent. The electricity and agriculture production activities represent only a small share in total capital outlays. Total depreciation (ESA95 K1) account has been split into public, cells (62,31-34) and private accounts, cells (63,18-30) and cells (63,34). Further, the depreciation recorded in the public account concerns only four activities of production (sec14-sec17) related to the government activities, namely: “Public administration and defence; compulsory social security”, “Education”, “Health and social work” and “Other community, social and personal service activities; private households with employed persons”. This methodological adjustment was incorporated in order to separate the public and private savings-investment, needed for policy simulations.

On the demand side of the production activities accounts, the highest share of the domestically produced goods supplied to domestic markets consists of services as already discussed in the previous section. Table 10 presents the structure of the total gross value added at basic prices for

¹⁵ Imputed social contributions (ESA95 D612) represent the counterpart to social benefits (less eventual employees' social contributions) paid directly by employers to their employees or former employees and other eligible persons (Eurostat and European Commission, 1996).

the period 2000-2007. It clearly shows that the financial sector on its own accounts for 28 percent of total value added in 2007.

**Table 10: Structure of total gross value added at basic prices, 2000-2007
(in millions of euros)**

	2000	2001	2002	2003	2004	2005	2006	2007
Total value added	19'623	20'273	21'542	23'235	24'490	27'073	30'564	33'808
Value added of financial sector	4'913.1	4'287.9	4'464.6	5'388.6	5'579.3	6'971.7	9'009.2	9'479.9
Value added of financial sector (in %)	25.0	21.2	20.7	23.2	22.8	25.8	29.5	28.0

Sources: Stavec (2011d), Eurostat (2010) and author's calculations.

Note: Activity "financial services" including financial intermediation, insurance, and financial and insurance auxiliaries.

The domestic output delivered to the domestic market of each production activity (columns totals) is equal to the domestic demand for domestic output (row totals).

3.1.3 Factors of production accounts

The factors of production accounts distinguish two types of production factors: capital and labour. In the rows, the accounts describe the capital and labour outlays of the production activities, cells (35-36,18-34), as discussed in 3.1.2. The supply of labour to the external sector (ESA95 D1) is registered in cell (36,62). The columns of the accounts reflect the distribution of the remuneration of factors of production among the non-financial corporations, financial corporations, households and the government. The compensation of employees, which represents the payments for the use of labour in the production process, is received by the household sector through wages, cell (40,36). The compensation of labour from the external sector (ESA95 D1) is registered in cell (65,36). This figure mainly reflects the labour offer provided by commuters from the neighbouring countries (France, Belgium and Germany). Income from capital, cells (37-40,35), are the net operating surpluses of the non-financial corporations, financial corporations, government and households (ESA9 B2n/B3n). It represents the surplus accruing from the process of production before deducting the interest charges, rents or other property incomes payable on the assets related to production. The highest share of income from capital is received by the non-financial corporations (44 percent) followed by financial corporations (33.6 percent).

3.1.4 Non-financial corporations sector account

The non-financial corporations sector (ESA95 S11) consists of institutional units whose distributive and financial transactions are distinct from those of their owners and which are market producers, whose principal activity is the production of goods and non-financial services. This institutional sector also includes non-financial quasi-corporations defined as bodies recognised as independent legal entities which are market producers and whose principal activity is the production of goods and non-financial services (Eurostat and European Commission, 1996).

In Luxembourg, the large industrial companies such as ArcelorMittal (steel industry) or GoodYear (tire industry) are included in this institutional account.

On the revenue side (in the row), the non-financial corporations sector receives income in the form of operating surplus, cell (37,35), and transfers from other institutions, cells (37,38-40) as well as from the ROW, cell (37,65). In the ESA95 framework, the transfers from other institutions within current account are called distributive transactions. The full set of the very detailed whom-to-whom tables, depicting these transactions, is presented in Appendix B. These tables allow tracing of uses (transfers to the other institutional sectors) and resources (revenues from the other institutional sectors) for each individual tax. They include property income from the allocation of primary income (ESA95 D4), and the three main taxes from the secondary distribution of income, namely: current taxes on income, wealth, etc. (ESA95 D5), social contributions and benefits (ESA95 D6) and other current transfers (ESA95 D7). These are further disaggregated in sub-taxes. Finally, adjustment for the change in net equity of the households in the pension funds reserves (ESA95 D8) is included as well.

The highest revenue component consists of the transfers from the external sector, with more than 50 percent of the total non-financial corporation sector revenue or 21 percent of GDP. These transfers are composed of the distributed income of corporations (ESA95 D42), the reinvested earnings on direct foreign investment (ESA95 D43), the interest payments (ESA95 D41) and some miscellaneous transfers. Furthermore, the distributed income of corporations accounts for a third of the total sector's revenue, and the reinvested earning for 17 percent. The operating surplus represents the second largest revenue component, with 32 percent of the total revenue. The non-financial corporations receive the largest share of the operating surplus of the economy. Regarding the transfers from the other institutional sectors, the most important is provided by the financial corporations account and includes two major sources: interest payments (ESA95 D41) and non-life insurance claims (ESA95 D72).

On the expenditure side (in the column), as for the revenue, the largest expenditure of the non-financial corporations account are transfers to the external sector, cell (65,37), accounting for more than 60 percent of the sector's total expenditure. These transfers include three principal expenditures which are the following: the distributed income of corporations (ESA95 D42); the reinvested earnings on direct foreign investment (ESA95 D43); the interest payments (ESA95 D41). Then, the non-financial corporations make transfers to financial corporations. These transfers include mainly interest payments and the distributed income of corporations, accounting together for a quarter of their total expenditures. The transfers to government and households represent only 2 percent of non-financial corporations expenditures. The corporate taxes (ESA95 D51B+D59) paid by non-financial corporations are integrated in the cell (39,46) together with the corporate taxes paid by other institutional sectors. These taxes are paid directly to the taxes-subsidies account which represents a kind of "tax administration" collecting government revenue. Non-financial corporations pay 43 percent of total corporate taxes in 2007.

Finally, the net savings of the non-financial corporations sector (ESA95 B8n) account for 4.1 percent of GDP and are recorded in cell (63,37).

3.1.5 Financial corporations sector account

The sector financial corporations (ESA95 S12) includes all the corporations and quasi-corporations which are principally engaged in financial intermediation and/or in auxiliary financial activities. According to ESA 95 definitions, financial intermediation can be defined as the activity in which an institutional unit acquires financial assets and at the same time incurs liabilities on its own account by engaging in financial transactions on the market. The assets and liabilities of the financial intermediaries have different characteristics, including, notably that the funds are transformed or repackaged with respect to maturity, scale, risk and the like in the financial intermediation process. On the other hand, the auxiliary financial activities can be defined as activities closely related to financial intermediation but which are not financial intermediation themselves (Eurostat and European Commission, 1996). The financial corporations sector consists of the monetary financial institutions (MFIs) including the central bank (ESA95 S121+S122), other financial intermediaries (OFIs) and financial auxiliaries (ESA95 S123+S124) and finally, insurance corporations and pension funds (ICPFs) (ESA95 S125).

The financial corporations have a similar revenue structure as non-financial corporations. In the row, the financial corporations receive income in the form of operating surplus, cell (38,35), and transfers from other institutions, cells (38,37) and cells (38,39-40) as well as from the ROW, cell (38,65). In addition, the financial corporations receive some net income from the operations among the financial corporations themselves (mainly non-life insurance premiums and claims) cell (38,38). These transfers are identified in detail in whom-to-whom tables, Appendix B.

The links to and the dependence of Luxembourg's financial sector on the rest of the world is very well reflected within the financial corporations' transfers to/from the rest of the world. Transfers from the external sector account for 94 percent of total financial corporations' revenues and the share is very similar when analysing their transfers/expenditures to the rest of the world. The common transfers between the financial sector and the external sector are mainly interest payments (ESA95 D41), distributed income of corporations (ESA95 D42), reinvested earnings on direct foreign investment (ESA95 D43). The interest payments represent about 60 percent of transfers followed by distributed income of corporations with 37 percent.

The transfers from the non-financial corporations represent the second largest revenue component and are principally composed of interest payments and reinvested earnings on direct foreign investment. The revenue transfers from the households account interest payments (mostly on real estate loans) and the net non-life insurance premiums, and those from the government are entirely composed of interest payments. Finally, the share of the total operating surplus earned by the financial corporations is the second largest in the economy, after the non-financial corporations, and accounts for only 3 percent of the total financial corporations' revenue.

On the expenditure side, in the column, the financial corporations make transfers to the other institutional sectors as well as to the rest of the world, and save. The largest expenditure of financial corporations are transfers to the external sector, as discussed above. The financial corporations also make transfers to the non-financial corporations, the households and the government. These transfers are mostly composed of interest payments (ESA95 D41) and non-life insurance claims (ESA95 D72). The corporate taxes (ESA95 D51B+D59) paid by this sector are integrated in the cell (39,46) together with the corporate taxes paid by other institutional sectors. Financial corporations are the largest payer of corporate taxes with around 55 percent of collected corporate taxes in 2007. An important share is paid by the 147 commercial banks registered in Luxembourg that year. The taxes on savings income paid by residents and non residents, (ESA95 D51A07+D51A08), collected by the banks in behalf of government and then transferred to it, are registered in cells (50-51,38). Finally, large transfers and low operating surplus registered in this sector indicate that it has a pure intermediation activity.

The net savings of the financial corporations sector (ESA95 B8n) account for 7 percent of GDP and are recorded in cell (63,38). They are calculated as the difference between financial corporations current revenues and expenditures.

3.1.6 Government sector account

In Luxembourg, the general government sector consists of the central government (ESA95 S1311), local government (ESA95 S1313) and social security funds (ESA95 S1314). The public corporations which are market producers are not included, in contrast to those public corporations which are considered to be “other non-market producers”. According to the ESA95 accounting framework, the “other non-market producers” are institutional units the major part of whose output is provided to the market free or at prices that are not economically significant. They are financed by the government and/or compulsory payments made by other sectors.

The government account has been disaggregated into the main government sector account and different taxes and subsidies accounts. The disaggregation proves useful as it allows a distinction to be made between the different types of taxes, by production activity or by commodity. As a consequence, the government sector account receives revenue from the taxes account and makes transfers to the subsidies account (for subsidies on commodities and on production).

On the revenue side (in the row), the government sector receives income from several taxes, cells (39,41-44) and cells (39,46-52), operating surplus, cell (39,35), and the transfers from non-financial corporations, cell (39,37), from financial corporations, cell (39,38), from households, cell (39,40), and from the external sector, cell (39,65). As mentioned above, the full set of very detailed whom-to-whom tables regarding these distributive transactions is presented in Appendix B. Each tax is analysed through the concept whom-to-whom. The subsidies (ESA95 D31+D39)

are recorded on the account's row, but because they actually represent government expenditures they are recorded with a negative sign, cell (39,45) and cell (39,53).¹⁶

The largest tax component consists of the social contributions (ESA95 D61) – also referred to as taxes on labour in the SAM, cell (39,47), with 29 percent of total taxes received by the government or 11 percent of the nominal GDP in 2007. The social contribution taxes are composed of social contributions paid by different agents in the economy, namely: employers (ESA95 D6111), employees (ESA95 D6112), self and non-employed persons (ESA95 D6113). Furthermore, imputed social contributions (ESA95 D612) are also included in the total. The latter represent the counterpart of social benefits paid directly by employers to their employees or former employees and other eligible persons (Eurostat and European Commission, 1996). For Luxembourg's specific case, according to the information directly provided by the national statistical office (Statec), the imputed social contributions represent the pensions of the civil servants, the free medical care of the army and the supplements to the pensions allocated to municipal workers.¹⁷

The second largest tax component consists of the taxes on income (ESA95 D51A), cell (39,49), with 19.6 percent of total tax revenues received by the government or 7.1 percent of the nominal GDP in 2007. This figure represents the taxes on income paid by the total labour force in Luxembourg (residents and non-residents). The full sequence of national accounts published for the first time in April 2011 allows a distinction to be made between the share of this tax paid by the residents, cell (49,40), and the one paid by the non-residents, cell (49,65). Taxes on wages are levied according to progressive rates going up to a maximum of 38 percent in 2007.

¹⁶ The treatment of taxes in the ESA95 framework is a critical issue in the context of the EU's excessive deficit procedure (Mohora, 2006). Given the implementation of the accrual principle, taxes and social contributions are generally recorded when the transactions or activities which create the liability to pay taxes occur. Thus, in most cases the taxes evidenced by the tax assessments but which are never paid are treated as if they have been paid (European Commission and Eurostat, 2002).

However, Regulation (EC) No.2516/2000 (European Communities, 2000)¹⁶ provides three alternatives to deal with this discrepancy:

- the recorded amounts are those due to be paid but they are adjusted by a coefficient reflecting taxes never collected;
- the amounts due to be paid are entirely recorded as taxes and social contributions and the discrepancy between the theoretical value and the actual cash receipts is recorded as a capital transfer in favour of the defaulting taxpayers;
- the taxes and social contributions are recorded on a cash basis but they are time-adjusted to correspond to the period when the liability occurs.

The Luxembourg national statistical office (Statec) adopted the third method of tax adjustment. This has been confirmed to the author by the official in charge of the compilation of government accounts in the national statistical office (Statec).

¹⁷ The imputed social contributions concern only three sectors related to public administration (according to the disaggregation of the SAM considered in this paper), namely: 'Public administration and defence; compulsory social security' (sec14), 'Education' (sec15) and 'Health and social work' (sec16). The total amount of these contributions has been distributed to these three sectors according to their share in total taxes on labour.

The consumption taxes (ESA95 D211+D2121+D214) are disaggregated into the value-added taxes (VAT), cells (39,41-44), including the VAT on intermediate consumption, the VAT on final consumption, the VAT on gross capital formation and the VAT on exports. The VAT revenue represents 19.4 percent of total taxes received by the government or 7 percent of the nominal GDP in 2007. This share is rather low compared to most European Union countries as Luxembourg applies the lowest (reduced and standard) VAT rates (3 percent, 6/12 percent and 15 percent) that a Member State may apply according to the EU regulation of 2006 (European Communities, 2006).¹⁸

The taxes on capital (ESA95 D51B+D59), cell (39,46), represent another important source of revenue for the government, accounting for about 16 percent of the total tax receipts. It mainly includes the corporate tax (“Impôt sur le revenu des collectivités”), the local commercial tax paid by the companies (“Impôt commercial communal”), the solidarity tax on corporate revenues (“Impôt de solidarité sur le revenu des collectivités”) and the current taxes on capital (“Impôts courants sur le capital”).

The import tariffs (ESA95 D212), cell (39,48), account for about 3.6 percent of nominal GDP in 2007. This figure is low as Luxembourg’s trade regime is liberal for most products. Furthermore, the largest share of tariff revenues is related to the excise taxes on imports of mineral oils (42 percent), of tobacco (32 percent), and the supplementary excise tax on fuel (11 percent). This reflects the high consumption of these products by the non-residents who either come on a daily basis to work in Luxembourg or simply cross the country (i.e. trucks). The prices of tobacco, mineral oils and fuel are indeed lower compared to the neighbouring countries.

The taxes on savings income paid by the residents and the non residents, (ESA95 D51A07+D51A08), and collected by the banks on behalf of the government, are registered in cells (39,50-51). For the residents, the tax rate has been fixed through national legislation to 10 percent (fixed rate) of savings income. For non-residents, the tax rate has been fixed by the European council¹⁹ directive. According to the latter, if the beneficial owner is resident in a Member State other than that in which the paying agent is established, Luxembourg government shall levy a withholding tax at the rate of 15 percent during the first three years of the transitional period, 20 percent for the subsequent three years and 35 percent thereafter. The starting date of the transition period was 1 January 2005. This implies that for the reference year of the financial SAM 2007, the tax rate on savings income has been 15 percent. The total of both taxes (paid by the residents and the non-residents) accounts for 0.8 percent of government revenue in 2007.

¹⁸ The standard VAT rate of 15 percent applied in Luxembourg is the lowest standard rate in force in the European Union (European Commission, 2010).

¹⁹ Council directive 2003/48/EC of 3 June 2003 on taxation of savings income in the form of interest payments.

The other taxes on production (ESA95 D29), cell (39,52), refer mainly to the subscription tax on securities (“Taxe d’abonnement”)²⁰, directly linked to undertakings for collective investment in transferable securities - UCITS (“Organismes de Placement Collectif”)²¹. This tax is highly correlated with stock exchange movements and the revenues that it generates fluctuate significantly from year to year. The government subsidises both consumption (ESA95 D31), cell (39,45) and production of commodities (ESA95 D39), cell (39,53). Both subsidies account approximately for around 0.8 percent of nominal GDP in 2007.

The operating surplus (ESA95 B2) is the government revenue from capital, cell (39,35). This revenue represents around 0.3 percent of nominal GDP in 2007.

The current transfers from the non-financial corporations (ESA95 D41+D42) represent an additional source of government revenue and are recorded in cell (39,37). These revenues represent the government interest revenues as well as the dividends from government participation in the semi-public companies (e.g. Post and Telecommunications “PTT”) but also in some private companies (e.g. ArcelorMittal) and account for around 0.4 percent of GDP. Financial corporations’ other current transfers to the government are mainly the government revenue from the interest payments (ESA95 D41), cell (39,38). However, it also includes some revenues from distributed income of financial corporations (ESA95 D42), as well as from taxes on non-life insurance claims (ESA95 D72). The current transfers from financial corporations represent 3.2 percent of total government revenue or 1.2 percent of GDP in 2007. Other households’ transfers to government represent a small share of government revenues and consist of payments of rents (ESA95 D45).

Finally, the government also receives transfers from the rest of the world (ESA95 D41+D74+D75), cell (39,65), which include taxes on interests as well as other transfers. These transfers constitute an insignificant share of total government revenues (0.3 percent) and include the transfers from the European Union.

²⁰ The subscription tax (“Taxe d’abonnement”) is a specific kind of registration tax established on the basis of the negotiability of securities. It presents in different form a registration right that a sale of securities would give right to. Its purpose is to tax the circulation (transactions) of shares. For holding companies, the rate of annual tax is 0.02 percent on the basis of market value of assets. For UCITS (Undertaking for Collective Investment Schemes in Transferable Securities) the annual tax rate is of 0.05 percent on the basis of net assets calculated at the end of the year. This rate is reduced to 0.01 percent in specific cases (i.e. money market funds). *Source: www.impotsdirects.public.lu.*

²¹ UCITS could be defined as bodies:

- of which the exclusive activity is collective investment in transferable securities;
- which in principle collect funds through public calls;
- which operate under the aegis of the risk-sharing principle;
- of which the shares are repurchased directly or indirectly, following a request by the bearers, and where the real burden is borne by the assets of these undertakings.

Some undertakings for collective investment do not confine their investments to transferable securities. *Source: www.impotsdirects.public.lu.*

On the expenditure side, in the column, the government's final consumption (ESA95 P3), cells (1-17,39), accounts for 40 percent of total government expenditure. Its composition has already been discussed in section 3.1.1. As the production of public services by the government sector is represented in the public administration sector account (sec14), the government wages and capital outlays are registered in the same account. The other government expenditures are current transfers or distributive transactions to non-financial corporations, financial corporations, and households, recorded in cells (37-38,39) and cell (40,39). The transfers to the non-financial corporations include the transfers to the railway company ("CFL") for the pension expenses (ESA95 D75) and a small share of the government interest payments on the public debt (ESA95 D41). Almost the full amount of the government transfers to the financial corporations reflects the government interest payments on the public debt (ESA95 D41) with net non-life insurance premiums representing only 5 percent of that total government transfer. Luxembourg public debt is mainly held by the residents (principally domestic banks for the account of households). The interest payments represent 0.2 percent of GDP. Finally, the government transfers to the households, including transfers to the NPISHs (as part of the households' account in the SAM), represent the second largest government expenditure after the final consumption expenditure. It accounts for around 30 percent of the total government current consumption or 11 percent of GDP, and includes social benefits other than social transfers in kind (ESA95 D62) and miscellaneous current transfers (ESA95 D75). The former represents 88 percent of this transfer. These figures show well the redistributive role that the Luxembourg government plays in the economy.

The government transfers to the rest of the world (ESA95 D62+D74+D75), cell (65,39) reflect mostly the social benefits other than social transfers in kind paid to cross-border workers (including children's allocations, school entrance allocations, allocations for the new-born child, education and maternity allocations and "boni" for children), but also the current international cooperation transfers (including transfers to the EU Budget) and miscellaneous current transfers.

The net savings of the government sector (ESA95 B8n) are recorded in cell (62,39). They represent the balance of the consolidated budget before public capital expenditures. By further subtracting capital expenditures, it is the conventional budget balance (ESA95 B.9) that is calculated. The latter represents a surplus of about 3.7 percent of nominal GDP in 2007. Adding the interest payment to the conventional budget balance it is the primary budget balance that is obtained, amounting to 3.9 percent of nominal GDP. The interest payments on the public debt are very low and amount only about 0.2 percent of GDP. The Luxembourg public debt was the lowest one in the euro area in 2007 (except in Estonia) with 6.7 percent of GDP.

3.1.7 Households sector account

The households sector (ESA95 S1M) consists of all the resident households. The non-profit organisations serving households (NPISHs), consisting of trades unions, political parties, non-profit associations and religious societies have been included in this institutional sector.

The households sector receives income from labour and capital, cells (40,35-36), and from the distributive transactions that register transfers from non-financial corporations and financial corporations, cell (40,37-38), and transfers from the government, cell (40,39), but also from the rest of the world, cell (40,65). As for the previous institutional sectors, details of these distributive transactions are presented in Appendix B. The transfers from the non-financial corporations include the social benefits other than social benefits in kind (ESA95 D62), representing mainly the special social security schemes put in place by the non-financial corporations for their employees outside of the regular social security system, and the miscellaneous current transfers (ESA95 D75). These transfers represent 1.1 percent of the total households' income or 0.5 percent of GDP. The transfers from financial corporations include the revenues from several transfers, namely: property income revenues (ESA95 D4), social benefits other than social benefits in kind (ESA95 D62), non-life insurance claims (ESA95 D75) and adjustment for the change in the net equity of households in pension funds reserves (ESA95 D8). The largest part is from the interest payments accounting for 5.5 percent of total households' revenue (row total) or 2.4 percent of GDP in 2007.

The government transfers account for a quarter of total households' income and include social benefits other than social transfers in kind (ESA95 D62) and miscellaneous current transfers (ESA95 D75). The former represents 88 percent of this transfer. Finally, the remaining part of households' revenue is provided by transfers from the external sector and includes: the interest payments and the distributed income of corporations (ESA95 D41+D42), the social benefits other than social transfers in kind (ESA95 D62) and some miscellaneous current transfers for a very small amount.

On the expenditure side, the households' income is used for consumption purposes (ESA95 P3), cells (1-17,40), for paying taxes on income (ESA95 D51A), cell (49,40), for paying some other taxes to government, cell (39,40) and for transfers to the non-financial and financial corporations, cells (37-38,40), as well as to the ROW, cell (65,40). The remaining transfers have been explained in detail in sub-sections 3.1.4 and 3.1.5.

The households' savings are, cell (63,40), are calculated as being the difference between households' income and expenditure. Their consumption incorporates not only the consumption of the residents in Luxembourg but also abroad. Furthermore, the consumption of the non-residents in Luxembourg is subtracted from the total consumption (see Table 11). This adjustment is needed in order to arrive at the national consumption of households as recorded in national accounts.

Table 11: Households' consumption, 2007 (in millions of euros)

		Total households' consumption	Consumption of residents abroad	Consumption of non-residents in Luxembourg	Total national consumption of households
1	Agriculture, hunting and forestry; fishing	299.0	26.7	28.3	297.3
2	Mining and quarrying	1.2	0.1	0.3	0.9
3	Manufacturing	6'787.1	650.2	2'425.8	5'011.5
4	Electricity, gas and water supply	302.9	0.0	0.0	302.9
5	Construction	78.3	0.8	7.8	71.3
6	Wholesale and retail trade, repair of motor vehicles, motorcycles and personal and household goods	157.0	10.0	29.4	137.6
7	Hotels and restaurants	1'004.0	286.5	423.6	866.9
8	Transport, storage and communication	616.1	31.2	70.4	576.9
9	Financial intermediation services	378.2	1.9	0.0	380.1
10	Insurance	339.4	0.0	0.0	339.3
11	Services auxiliary to financial intermediation and insurance	0.0	0.0	0.0	0.0
12	Real estate activities; renting	2'521.9	3.7	29.8	2'495.9
13	Business activities	110.1	2.7	18.3	94.5
14	Public administration and defence; compulsory social security	28.5	0.0	0.0	28.5
15	Education	184.2	4.1	14.3	174.0
16	Health and social work	614.5	4.5	4.3	614.7
17	Other community, social and personal service activities; private households with employed persons	703.7	27.0	120.5	610.1
	TOTAL	14'125.8	1'049.3	3'172.9	12'002.2

Source: Statec (2010 and 2011d).

Note: This disaggregation is not publicly available (as it is not a part of official programme of publications of national statistical office (Statec)) and has been transmitted directly to the author by Statec on personal request.

3.1.8 External account

The external account (ESA95 S2) presents the income of the foreign sector in the corresponding row and the expenditure in the column. The income consists of imports (ESA95 P7), labour revenues (ESA95 D1), current transfers of the non-financial and financial corporations, government and households (ESA95 D4+D51+D6+D7+D8), while the expenditure includes the exports of the domestic economy (ESA95 P6), the labour outlays (ESA95 D1), the transfers to the institutional sectors (ESA95 D4+D51+D6+D7+D8) and the taxes on income paid to the government by the non-residents (ESA95 D51A). The net saving of the external sector is recorded in cells (62-63,65) and as mentioned above represents the current account balance. All these income and expenditure accounts have already been explained in the previous sub-sections and their position in the SAM identified.

At this stage, it is worth pointing out that one methodological adjustment, related to the direct purchases of commodities abroad by the residents and the purchases in the domestic territory by the non-residents, is necessary. The imports and exports by commodity recorded in the supply and use tables for Luxembourg do not show these purchases by commodity but only their total

amounts²². Thus, the direct purchases abroad by the residents were added to the imports and the purchases in the domestic territory by the non-residents were added to the exports. Further, as mentioned in section 3.1.7, to calculate the consumption by the national households', the direct purchases abroad by the residents needed to be added to the total consumption by the national households' and the purchases in the domestic territory by the non-residents to be subtracted. The high share of purchases in the domestic territory by the non-residents with respect to the total consumption is a reflection of the consumption of some 150 000 cross-border workers coming to work to Luxembourg on daily basis.

The Luxembourg economy is highly oriented to service exports and this is reflected in its exports figures. The exports of financial intermediation services represent 54 percent of the total exports in 2007 with an additional five percent accounting for exports of business activities. These figures clearly reflect the importance of the financial sector for the economy of Luxembourg (142 commercial banks in December 2011). The exports of manufactured commodities represent around 24 percent of the total exports in 2007. Group Arcelor Mittal (steel industry), GoodYear SA (production of rubber commodities), Group Guardian (glass industry), DuPont de Nemours (production of plastic commodities) and Euro Composites SA and Tarkett GDL SA (production of plastic commodities) contribute significantly to the exports of manufactured commodities and to employment in these sectors.

The imports are also characterised by a high degree of concentration in the financial services and insurance (including services auxiliary to financial intermediation), representing 48 percent of total imports in 2007. The manufacturing commodities represent 31 percent and business activities 13 percent of the total. These shares clearly indicate that Luxembourg imports are also service-oriented although less than exports: financial services represent the highest share.

Furthermore, as a member of the European Union, the country has to meet well-defined financial obligations. Table 12 shows how EU transactions in Luxembourg contribute to the general government revenue and expenditure. The figures indicate that the government contributes significantly more to the EU budget than what it receives, with an excess of 245 million euros being paid to the EU budget in 2007. The amount of 208 million euros (including current international co-operation and European Community (EC) fourth own resource), that the government contributes is recorded in the account of government transfers to the ROW, cell (65,39). The indirect taxes transferred to the EU budget are recorded in the cells (65,41-44) and the subsidies on production received from the EU budget in cell (65,53) with a negative sign representing an expense for external account. Furthermore, the EU current expenditure in Luxembourg (except subsidies) is recorded in the account "remittances from abroad", cell (39,65).

²² The direct purchases abroad by the residents and the purchases in the domestic territory by the non-residents by commodity data are not published. The latter row data has been directly communicated to the author by Statec on personal request. The author calculated the necessary adjustment further.

Table 12: EU transactions in Luxembourg contributing to general government revenue and expenditure (in millions of euros)

	ESA codes	Item no.	2007
Payments by Member State to EC Budget		1=2+4+5+7	282
Indirect taxes received by EC Budget	D.2	2	74
of which VAT received by EC Budget	D.211	3	49
Current international co-operation paid by government to EC Budget	D.74	4	9
Miscellaneous current transfers paid by government to EC Budget	D.75	5	199
of which EC fourth own resource		6	199
Capital transfers paid by government to EC Budget	D.9	7	0
EU expenditure in Member State		8=9+10+11+12+13	37
Subsidies paid by EC Budget	D.3	9	21
Current transfers paid by EC Budget to government	D.74+D.75	10	5
Current transfers paid by EC Budget to non-government	D.75	11	0
Capital transfers paid by EC Budget to government	D.9	12	16
Capital transfers paid by EC Budget to non-government	D.9	13	-4
Net receipts from EC Budget (net receiver +, net payer -)		14=8-1	-245

Sources: Statec (2011d) and author's calculations.

3.1.9 Taxes and subsidies accounts

The taxes and subsidies accounts are disaggregated according to the type of tax or subsidy. They include the VAT (ESA95 D211), the import tariffs (SEC95 D212), the taxes on products - except the VAT and the import tariffs – (ESA95 D214), the taxes on capital (ESA95 D51B+D59), the taxes on production (ESA95 D29), the taxes on labour (ESA95 D61), the subsidies on commodities (ESA95 D31) and the subsidies on production (ESA95 D39). The VAT and taxes on products account represent one single account in national accounts but are further disaggregated in this SAM following ESA95 nomenclature (Statec, 2010b) in VAT on intermediate consumption, VAT on final consumption, VAT on gross capital formation (including changes on inventories) and VAT on exports.

In the rows, the taxes accounts (rows 41-44 and 46-52 in the SAM) show the payments of taxes made to this account by commodities, production activities and institutional sectors. In the columns, the revenue from these taxes is transferred to the government sector account. The subsidies' accounts (rows 45 and 53 in the SAM) show in the rows the subsidies on commodities and the direct subsidies transferred to the production activities. Thus, they are recorded with a negative sign. In the columns, the subsidies expenditures are transferred from the government, cell (39,45) and cell (39,53), and from the external sector, cell (65,53). These are recorded again with a negative sign. The structure of the tax revenues as a percentage of GDP has already been discussed in sections 3.1.1 and 3.1.2 of this paper.

The aggregated data on taxes and subsidies by commodity and by production activity for the year 2007 is published in the supply and use tables (Statec, 2010b). Furthermore, the disaggregated

data of taxes and subsidies by commodity and by production activity have been directly provided to the author by Statec.

Both the direct subsidies to production activities as well as the subsidies on commodities represent about 0.8 percent of GDP in 2007. The total amount of each subsidy appears low when analysed as a percentage of GDP, but is significant for some specific production activities and commodities that are still highly subsidised by the government. For example, four production activities receive around 75 percent of the total subsidies to the production activities, namely: the agriculture sector, the real estate activities and renting; transport, storage and communication; and manufacturing. Finally, the situation is even more striking for the subsidies on commodities where almost the total amount of subsidies is allocated to one single commodity “transport, storage and communication”, reflecting the still very high participation of the government in the public sector enterprises (e.g. National Railway Company (CFL) and Post and Telecommunications (PTT)).

The taxes on savings income paid by the residents and the non residents (ESA95 D51A07+D51A08) are recorded in cells (50-51,38). These taxes are collected by the banks on behalf of government. For the residents, the tax rate has been fixed through the national legislation to 10 percent (fixed rate) of savings income. For the non-residents, the tax rate has been fixed by the European council²³ directive, to 15 percent on savings revenue in 2007. More details regarding this specific tax are given in section 3.1.6 of this paper.

3.1.10 Transactions costs accounts

In the commodities accounts the transition from the supply of commodities valued at basic prices to the use of commodities values at purchaser’s prices requires reallocating the trade and transport margins. Thus, the transactions costs accounts register the trade and transport margins associated with the trade flows. These accounts are distinguished according to the transaction costs associated with intermediate consumption, household consumption, gross capital formation and exports. The aggregate figures are provided in the supply table for 2007 (Statec, 2010b) and the disaggregated data have been directly communicated to the author by Statec.

The trade margins represent the distribution costs and are given by the difference between the actual prices of products that are purchased for resale and the prices that the distributor has to pay to replace the goods at the time they are sold. Transport margins include the transportation costs paid separately by the purchaser, which are included in the purchaser’s prices but not in the basic prices of a manufacturer’s output or in the trade margins of wholesale or retail traders (Eurostat and European Commission, 1996). Thus, the trade and transport margins on intermediate consumption, on household consumption and gross formation, reflect the distribution and

²³ Council directive 2003/48/EC of 3 June 2003 on taxation of savings income in the form of interest payments.

transportation costs of transferring commodities from the purchasers to the domestic consumers and are recorded in cells (54-56,1-17) and cells (58-60,1-17). The transaction costs for imports represent the distribution and transportation costs of transferring commodities from the border to the domestic consumer and the transaction costs for exports show the distribution and transportation costs of transferring the commodity from the producer to the border, and these costs are recorded in cells (57,1-17) and in cells (61,1-17).

The total trade costs associated with the intermediate consumption, household consumption, gross capital formation and exports are equal to the sum of the trade margins of the sector “Wholesale and retail trade, repair of motor vehicles, motorcycles and personal and household goods services” (sec6 in the SAM), recorded in the columns, cells (6,54-57). Similarly, the total transportation costs on intermediate consumption, household consumption, gross capital formation and exports equal the transport margins of the sector: “Transport, storage and communication” (sec8 in the SAM), recorded in cells (8,58-61).

3.1.11 Savings-investment account and changes in stocks account

The savings-investment account (on the row) shows not only the consumption of fixed capital in the production process (depreciation) but also the net savings of non-financial and financial corporations, government, households, and external sector. The demand for investment commodities is presented in the column. The calculation of depreciation has already been presented in sub-section 3.1.2 of this paper. The value of depreciation has been subtracted from savings to compute the net savings for each institutional sector.

The savings-investment account is further split into public and private sector accounts. Public sector account registers all the government capital account transactions and books the consumption of fixed capital in the production process (ESA95 public sector share in K1), government savings (ESA95 B.8n) and capital transfers, receivable (ESA95 D9) including acquisitions less disposals of non-produced non-financial assets (ESA95 K2), and government net savings borrowed to the ROW recorded with negative sign (ESA95 B9) representing a part of foreign savings on the row, and demand for government investment commodities (ESA95 P51), capital transfers, payable (ESA95 D9), on the column.

The private sector account books the consumption of fixed capital of the private sector (ESA95 private sector share in K1), capital transfers payable by government to the private sector (ESA95 D9), net transfers among private institutional sectors (ESA 95 D9+K2) and finally, non-financial and financial corporations, households’ and a part of foreign savings (ESA95 B.8n) on the row, and demand for private investment commodities (ESA95 P51) and capital transfers, receivable by the government (ESA95 D9+K2) on the column. Foreign sector savings, cells (62-63,65), represent the balance of the current account. In this case having a negative sign

indicates the surplus of the national current account of around 8.7 percent of GDP in 2007²⁴. The demand for investment commodities has already been discussed in section 3.1.1 of this paper.

The changes in stocks account (inventories) represent the demand for inventories on the column and have also already been presented in section 3.1.1. The account is closed through the savings-investment account, cells (64,62-63), on the row.

3.2 Financial accounts in the SAM

The adjunction of financial transactions in a real SAM requires two new blocs of accounts: the capital accounts belonging to institutional sectors and the financial instruments that include the financial assets and liabilities. This means that each institutional sector has its own current and capital accounts.

The Luxembourg SAM with the financial accounts follows the structure of the financial SAM basic framework presented in Table 4. The financial SAM for Luxembourg incorporates the six capital accounts for the following sectors: non-financial corporations, central bank, other financial corporations, government, households and the rest of the world. The second financial bloc consists of 16 flow accounts assigned to the 16 financial assets and liabilities. For the disaggregation of these flows the ESA95 nomenclature has been applied, where the financial instruments can be identified as presented in Table 13.

To retain the consistency between the real accounts and the financial accounts, it is important, as for the real accounts, to start by developing an aggregate (macro) financial SAM. Table 15 presents this aggregate SAM, including the financial accounts for Luxembourg. The full disaggregated financial SAM is presented in Appendix C. However, the main components of the financial accounts newly introduced in the real SAM are presented in the following sub-sections.

²⁴ This figure is different (1.4 percent of GDP lower) from the figure published by Central Bank of Luxembourg (BCL, 2010) within Balance of Payments (BoP) framework (compiled together with national statistical office – Statec). According to the information directly received from Statec, this difference might be explained by two main reasons. First, national accounts framework and BoP framework produce results of exports and imports that differ as they use different sources of information and the cycle of production is different. Second, methodological differences are still present (e.g. FISIM is included in services in national accounts and rather in revenues in BoP). With new reference publications of the system of national accounts and BoP this difference should vanish.

Table 13: 16 flow/stock accounts assigned to the 16 financial assets and liabilities

ESA95 Classification of financial instruments		
1	F1	Monetary gold and special drawing rights (SDRs)
2	F21	Currency
3	F22	Deposits
4	F29	Other deposits
5	F331	Short-term debt securities
6	F332	Long-term debt securities
7	F34	Derivatives
8	F41	Short-term loans
9	F42	Long-term loans
10	F511	Quoted shares
11	F512	Unquoted equity
12	F513	Other equity
13	F52	Mutual fund shares
14	F61	Net equity of households in life insurance reserves and in pension fund reserves
15	F62	Prepayments of insurance premiums and reserves for outstanding claims
16	F7	Other accounts receivable/payable

Sources: Eurostat and European Commission (1996), author's construction.

In the following sections, only the financial accounts will be discussed as the real accounts have already been presented in detail earlier.

First, the five main components of the capital account are presented in the same way as the real accounts, first by row (demand side) and then by column (supply side) to facilitate the reading and understanding of the financial accounts of the SAM. Second, the seven main categories of the financial instruments are presented with a breakdown by financial instrument and original maturity. Finally, the link between the capital account and the financial transactions (in assets and in liabilities) in the financial SAM is presented.

3.2.1 Capital account

The link between the current and the capital account of each institutional sector is established through its savings. Basically, each institutional sector transfers the balance of its current account (i.e. its savings) into its capital account. This balance becomes to some extent its disposable resource for possible acquisition of physical and/or financial assets. Another important link between the real and the financial spheres of the SAM consists of the change in the physical capital. Admittedly, in the Luxembourg SAM with real accounts, there is already a savings-investments account that behaves as a capital account. However, this account is only divided into public and private savings-investment accounts without further disaggregation. These two accounts of the real SAM record distinctly, in the row, the savings of each institutional sector, and the column side gives only the total (public and private) investment of the aforesaid agents and thus does not account for the participation of each institutional sector in the gross fixed capital formation (GFCF).

In addition, this capital account records only the flows of physical capital. The creation of a distinct capital account for each institutional sector provides the details of the sector's different resources, as well as the various assets (physical and/or financial) the latter holds as counterparts of those resources or liabilities. Moreover, it is not customary to distinguish the non-financial corporations from the financial corporations in a SAM with real accounts. In order to portray the financial features and mechanisms, this must be undertaken in such a way that each of the non-financial and the financial firms has its pair of "current account" and "capital account". Accordingly, in the financial SAM for Luxembourg, one current account and one capital account have been attributed to each institutional sector.

Finally, in order to better reflect the structure of the Luxembourg financial sector, a further disaggregation of the institutional account 'Financial corporations' is needed. Following ESA95 nomenclature, this disaggregation is presented in Table 14. Each of these sectors has its pair of capital and current account in the SAM.

Unfortunately, the national statistical office does not publish disaggregated real accounts of financial corporations (ESA95 S12)²⁵. Therefore, this disaggregation would have to be integrated in the future work as it is an important segment of financial computable general equilibrium model.

Table 14: Disaggregation of financial corporations account (ESA95 S12)

	S121	Central Bank
	S122	Other monetary financial institutions (MFIs)
S12: Financial corporations	S123+S124	Other financial intermediaries, except insurance corporations and pension funds + Financial auxiliaries
	S125	Insurance corporations and pension funds

Sources: Eurostat and European Commission (1996).

The disaggregated data of the gross fixed capital formation (ESA95 P51) by institutional account and by commodity in Luxembourg are not published. Statec has supplied directly to the author the raw data, used for the compilation of supply and use tables (these data are not part of the official programme of publications of Statec and are made available on personal request). The author transformed the data according to the financial SAM of Luxembourg commodity disaggregation. It results that non-financial corporations participate the most in the gross fixed capital formation, with 57 percent of total amount registered in 2007 (see Table 14), buying mostly manufacturing, construction and business related commodities. Households are the second largest participant accounting for 22 percent of the total, with almost all of their investments going to construction commodities. Government and financial corporations also allocate the largest share of their GFCF to construction commodities.

²⁵ Only central bank (ESA95 S121) was considered separately from financial corporations account (ESA95 S12), in this version of the financial SAM.

The consumption of fixed capital (ESA95 K1) was also disaggregated by institutional sector. As the logical result of the respective contributions to overall GFCF formation, non-financial corporations account for the largest share with 52 percent of the total capital depreciation, followed by households' with 23 percent.

The whom-to-whom matrix can also be identified in the capital account of the institutional sectors. This matrix incorporates transactions of capital transfers payable/receivable (ESA95 D9) among sectors as well as the acquisitions less disposals of non-produced non-financial assets (ESA95 K2). Shaded cells of the south-eastern area of the financial SAM in Table 15 represent these transfers. The households are the largest beneficiary of capital transfers among institutional sectors, followed by non-financial corporations. Both of them receive important amounts from the government and the households also from the non-financial corporations. Moreover, the government also distributes important capital transfers to the external sector.

The capital account also allows the identification of changes in inventories by institutional sector. This account incorporates the changes in inventories (ESA95 P52) and the acquisitions less disposals of valuables (ESA95 P53). The non-financial corporations generate the total amount of increased inventories. This accumulation is reduced by the fact that disposals of valuables were more significant than acquisitions in 2007, and this is recorded almost entirely in the account of the financial corporations.

Table 15: Aggregated SAM with real and financial accounts for Luxembourg (2007) in outline (in millions of euros)

ACCOUNTS		Com	Prod	Factors of prod.		Institutional sectors: current account					Taxes	Subs	Institutional sectors: capital account					Ch. in stocks	Financial inst.	Total
				Capital	Labour	S11	S12	S13	S1M	S2			S11	S12	S13	S1M	S2			
Com			69'636					5'535	12'002	65'956			4'405	445	1236	1690	0	69	160'974	
Prod		103'443																	103'443	
Factors of productions	Capital		10'987																10'987	
	Labour		12'130						1040										13'170	
Institutional sectors: current account	S11			4'853		0	2'087	149	89	7'797									14'976	
	S12			3'692		3'938	241	84	965	132'12									141'031	
	S13			127		141	436	0	11	45	13'557	-562							13'755	
	S1M			2'316	8'123	172	1346	3'957	0	338									16'252	
	S2	53'847			5'047	9'206	134'186	1626	539	3	74	-21							204'508	
Taxes		3'978	6'975				111		2'104	463									13'631	
Subsidies		-294	-288																-582	
Institutional sectors: capital account	S11		2'074			1'519							0	0	266	0	0		109'625	113'484
	S12		403				2'623						0	0	9	0	0		508'140	511'175
	S13		602					2'404					33	0	0	58	16		378	3'491
	S1M		924						541				302	0	97	0	31		2'743	4'637
	S2									-3'246			58	28	131	2	0		473'717	470'691
Ch. in stock												179	-113	2	1	0			69	
Financial inst.												108'507	510'814	1751	2'887	470'644			1'094'603	
Total		160'974	103'443	10'987	13'170	14'976	141'031	13'755	16'252	204'508	13'631	-582	113'484	511'175	3'491	4'637	470'691	69	1'094'603	

Source: Author's calculations.

Note: For presentation purposes, transaction costs are integrated in domestically produced commodities for the domestic market, the taxes less subsidies account is split (in taxes and subsidies).

Institutional sector S12 – financial corporations is further disaggregated into four accounts: S121 – Central bank; S122 – Other MFIs; S123+S124 – Other financial intermediaries, except insurance corporations and pension funds + Financial auxiliaries; and S125 – Insurance corporations and pension funds. The detailed accounts are presented in disaggregated financial SAM in Appendix C.

Notations: S11 - non-financial corporations; S12 - financial corporations, S13 - government; S1M - households and NPISHs; S2 - external sector, Com-Commodity; Sec-Sector.

As in the real SAM, the savings are presented by institutional sector but their importance increases significantly when analysing the financial accounts as they represent the link between the current account and capital account of each institutional sector. Moreover, as mentioned above, each institutional sector transfers the balance of its current account (its savings) into its capital account and this balance represents its resources for acquisition of physical and/or financial assets.

An analysis of the saving rate of each institutional sector provides some additional information (Table 16).

In 2007, the saving rate of all the institutional sectors reached only 6 percent. The principal contributor to the total gross savings (ESA95 B8b) was the non-financial corporations sector, accounting for 32 percent of the total gross savings, followed by non-financial corporations and government recording the same share. Meanwhile, the saving rates of households were recorded at 13 percent. This suggests that, in absolute amounts, the households are the institutional sector that saves the least in Luxembourg. Relative to their income, the saving rate of the financial corporations stood at only 2 percent as a very large share of their income comes from the external sector, which is at the end of the period mostly spent in the same sector. Thus, the financial corporations income figure underestimates the total gross savings of Luxembourg. Taking into account only the three institutional sectors (excluding the financial corporations) gives a better representation of the national savings with respect to total income. It emerges that, in 2007, the saving rate of the three institutional sectors reached 18 percent.

Table 16: Saving rate by institutional sector (in millions of euros if not stated otherwise)

Institutional sector	Savings	Savings (in %)	Income	Savings / Income
Non-financial corporations	3'593	32	14'976	24
Financial corporations	3'026	27	141'031	2
Government	3'006	27	13'755	22
Households	1'464	13	16'252	9
Total	11'090	100	186'015	6
Total without financial corporations	8'064		44'984	18

Source: Author's calculations.

Note: Savings presented in this table indicate gross savings (net savings plus consumption of the fixed capital).

Finally, in 2007, the gross domestic savings *minus* the physical investments – the latter being defined as the gross fixed capital formation and changes in inventory – amounted to 3 245 million euros or 3 073 million euros when net capital transfers are further subtracted. This figure represents 27.7 percent of the gross domestic savings or 8.2 percent of GDP. So, the total physical investment of all institutional sectors in 2007 was financed by domestic savings. (Table 17)

Of the total investment, 4 584 million euros (or 58 percent of total investment) came from non-financial corporations, while the households contributed 1690.6 million euros followed by the general government 1 238 million euros. (see Table 17). Further, only the non-financial corporations institutional sector experienced net borrowing (1 118 million euros) as its savings were falling short of its financing needs for physical investment. The financial corporations and the government recorded domestic savings of 2 675 million euros and of 1 373 million euros, respectively. The total surplus for 2007 stood at 3 073 million euros.

**Table 17: Gross savings and physical investments by institutional sector
(in millions of euros)**

Institutional sector	Savings (S)	Investments (I)	(S) - (I)	Net capital transfers (N)	(S) - (I) - (N)
Non-financial corporations	3'593	4'584.0	-991.0	127	-1'118
Financial corporations	3'026	332.4	2'694.0	19	2'675
Government	3'006	1'238.0	1'768.3	396	1'373
Households	1'464	1'690.6	-226.1	-370	144
Total	11'090	7'845	3'245	173	3'073

Source: Author's calculations.

3.2.2 Financial instruments: assets and liabilities

Before putting the capital account and financial transactions together it is important to have a good understanding of the different instruments that are involved in financial transactions. The disaggregation of the financial instruments (assets/liabilities) used in the Luxembourg financial SAM follows the ESA95 nomenclature, used by all EU Member States for all statistic transmissions to Eurostat. Financial transactions, presented below, have been ordered by instrument used in the Luxembourg financial SAM and original maturity.

3.2.2.1 Monetary gold and special drawing rights (SDRs)

The “monetary gold and special drawing rights” (ESA95 F1) concern only the central bank. This item reflects the “gold” held as a monetary reserve by a central bank (ESA95 F11) and “special drawing rights (SDRs)” (ESA95 F12). The latter are defined as special international reserve assets created by the International Monetary Fund (IMF) and allocated to its members to supplement existing reserve assets. These assets are held by central banks and for Luxembourg by the Central Bank of Luxembourg (BCL).

According to the ESA95 principles, the financial assets classified in this category are the only financial assets for which there are no counterpart liabilities in the system. Thus, transactions in monetary gold and SDRs always involve changes in ownership of financial assets (Eurostat and European Commission, 1996).

Purchases (sales) of monetary gold are recorded in the financial accounts of the central bank as increases (decreases) in financial assets. The counterpart entries are decreases (increases) in the financial assets of the external sector. Further, changes in SDRs hold by a central bank can arise mostly through SDR payments to or receipts from the IMF. They are recorded in the financial accounts of the central bank and the external sector, respectively.

3.2.2.2 Currency and deposits

This item (ESA95 F2) includes “currency” (ESA95 F21) which is an asset for the holders and a liability for the issuer, mainly central bank. The account consists of all the transactions in currency, meaning notes and coins in circulation. All the domestic sectors and the external sector may hold currency (Eurostat and European Commission, 1996). It is issued by the central bank, the central government, the external sector and in exceptional cases other monetary financial institutions. This item also includes the “transferable deposits” (ESA95 F22) - which includes the current bank accounts - as well as “other deposits” (ESA95 F29). The transferable deposits consist of all the transactions in transferable deposits, meaning the deposits which are immediately convertible into currency or which are easily transferable (without any kind of significant penalty). All the sectors in the domestic economy and the external sector may hold transferable deposits. They are liabilities predominantly of monetary financial institutions and the external sector, and sometimes of general government. On the other hand, other deposits consist of the deposits other than transferable deposits (e.g. time deposits or savings deposits). These deposits cannot be used to make payments at any time and they are not convertible into currency or transferable deposits without any kind of significant restriction or penalty. All sectors in the economy may hold other deposits. They are liabilities mostly of monetary financial institutions and the external sector but also of general government (Eurostat and European Commission, 1996). Furthermore, this item (ESA95 F2) does not exactly correspond to the monetary aggregates.

3.2.2.3 Securities other than shares

The “securities other than shares” item (ESA95 F3) is divided into two sub-categories: “securities other than shares”, excluding financial derivatives (ESA95 F33); and “financial derivatives” (ESA95 F34). The first sub-item is sub-classified by maturity into short-term and long-term and includes, in particular, the securities issued by the public treasury to finance the public deficit but also all other bonds, including those issued by corporations. They are defined as securities which give the holder the unconditional right to a fixed or contractually determined variable money income in the form of coupon payments (interest) and/or a stated fixed sum on specified date or dates or starting from a date fixed at the time of issue. The short-term securities mostly include: treasury bills, negotiable short-term paper issued by financial and by non-financial corporations, securities issued under long-term underwritten note issuance facilities and bankers’ acceptances. The, long-term securities include a larger range of securities and the most important are: bearer bonds, subordinated bonds, bonds with optional maturity dates, undated and perpetual bonds,

zero-coupon bonds, Eurobonds or index-linked security (Eurostat and European Commission, 1996).

The second sub-item, financial derivatives, represents a large item and it almost exclusively tackles interbank refinancing. Financial derivatives might be defined as financial assets based on or derived from a different underlying instrument. The underlying instrument is usually another financial asset, but may also be a commodity or an index (Eurostat and European Commission, 1996). Financial derivatives are also referred to as secondary instruments but also as hedging instruments (since risk avoidance frequently underpins their creation). They include: options, warrants, futures, swaps and forward rate agreements.

3.2.2.4 Loans

The “loans” (ESA95 F4) item contains all the financial assets that are created when creditors lend funds directly or through brokers to debtors. It includes consumer loans, housing loans and loans to business. As the previous instrument (Securities other than shares), it is sub-classified by maturity into short-term loans (below one year and repayable on demand) and long-term loans (above one year). This breakdown has its limitations. First, loans are sometimes renegotiable. Second, a long-term loan nearing the end of its life becomes a short-term loan. Standard long-term loans are offered in most cases by financial corporations and often granted to households and non-financial corporations. The item loans (short and long term) includes: balances on current accounts, short-term repurchase agreements, loans arising from non-monetary gold swaps, loans to finance trade credits, mortgage loans, consumer credits, revolving credits, etc. Loans may be financial assets or liabilities of all the sectors in the economy and the ROW. However, monetary financial institutions have normally no short-term loan liabilities in the system.

3.2.2.5 Shares and other equity

(including shares issued by investment funds, such as mutual funds)

The “shares and other equity” item (ESA95 F5) includes shares in both quoted (ESA95 F511) and unquoted (ESA95 F512) companies, as well as “other equities” (ESA95 F513). Furthermore, “mutual funds shares” (ESA95 F52) represent another sub-item. Shares and other equity (excluding mutual funds shares) are defined as financial assets which represent property rights on corporations or quasi-corporations. These financial assets generally entitle the holders to a share in the profit of the corporations or quasi-corporations and to a share in their net assets in the event of liquidation (Eurostat and European Commission, 1996). Quoted and unquoted shares include: capital shares, redeemed shares, dividend shares, preferred shares. And the “Other equity” incorporates all forms of equity in corporations which are not shares, investment by government in the capital of public enterprises, government investment in the capital of international and supranational organisations (e.g. The European Investment Bank), etc. Furthermore, it remains very difficult to value the unquoted companies, as it is very complicated to estimate what their market price would be (since by definition there is no market for them). Moreover, the shares are

shown as liabilities of corporations in the national accounts, although these are not debt of companies but constitute a part of their “own funds”.

The sub-category mutual funds shares is defined as shares issued by a specific type of financial corporation (e.g. named according to country, mutual funds, unit trusts, investment trusts and other collective investment schemes) whose exclusive purpose is to invest the funds collected on the money market, the capital market and/or in real estate (Eurostat and European Commission, 1996). These shares might be quoted or unquoted. When they are unquoted, they are usually repayable on request, at a value corresponding to their share in the own funds of the financial corporation. These own funds are revaluated regularly on the basis of the market prices of their various components. The shares in the investment funds are shares which are held indirectly, often through portfolios managed by banks and financial corporations (including property portfolios). This item becomes more important as households tend to prefer this kind of products compared to the direct holding of shares and bonds.

3.2.2.6 Insurance technical reserves

The “insurance technical reserves” (ESA95 F6) are divided into two sub-items: “net equity of households in life insurance reserves and in pension funds reserves” (ESA95 F61) and “prepayments of insurance premiums and reserves for outstanding claims” (ESA95 F62).

In terms of holdings, the first sub-item represents the cumulative value of the savings invested by the households in life insurance contracts and in capitalisation pension funds. The value of these assets is attributed to the households in the national accounts, despite the fact that these assets in firm accounting appear in the balance sheets of the corporations’ managing these funds. According to Lequiller and Blandes (2006), this attribution is a correct representation of the economic reality, since the savings belong to the households and not to the corporations’ managing them. Furthermore, at some stage, these amounts will be returned to the households in the form of annuities or retirement pensions. The forthcoming version of European System of national Accounts (ESA2010) will tackle this issue and it will also incorporate the implicit debts of the pension plans known as “pay-as-you-go” of each institutional sector. Currently, the institutional differences among countries regarding the pension plans (capitalisation versus pay-as-you-go) generate very significant differences in the financial accounts, making international comparisons difficult.

Finally, the second sub-item represents the prepayments of non-life insurance premiums and outstanding claims on insurance companies. The reserves for outstanding claims are held by the insurance corporations in order to cover the amounts they expect to pay out in respect of claims that are not yet settled (e.g. they are disputed). The reserves for outstanding claims are financial assets of the beneficiaries that may belong to any sector of the economy or to the ROW.

3.2.2.7 Other accounts receivable/payable

The “other accounts receivable/payable” (ESA95 F7) item also contains two sub-items: “trade credits and advances” (ESA95 F71) and “other accounts receivable/payable, except trade credits and advances” (ESA95 F79). It consists of all the transaction in the other accounts receivable/payable that is financial claims which are created as a counter-part of a financial or a non-financial transaction in cases where there is a timing difference between this transaction and the corresponding payment (Eurostat and European Commission, 1996). The first sub-item is a substantial account, which includes the credits related to commercial transactions²⁶. The second includes all the implicit credits related to wages and salaries, taxes, social contributions, dividends, interest, rents, etc. The national accounts record transactions following the “accrual accounting” rules. This means that a transaction must be recorded in such a way that the accounts reflect at any moment the value of the agents’ entitlements and obligations²⁷ (Lequiller and Blades, 2006).

3.2.3 Capital account and financial account by institutional sector

The financial account deals with the financial transactions (in terms of assets and liabilities) taking place between the institutional units (non-financial corporations, financial corporations, government and households), and them and the external sector. It shows on its left side the acquisitions less disposals of financial assets, while its right side shows the incurrence of liabilities less their repayment. In other words, the financial account shows how the surplus or deficit on the capital account is financed by transactions in financial assets and liabilities. Thus, the balance of the financial account (net acquisition of financial assets less net incurrence of liabilities) is equal to the net lending/net borrowing, the balancing item of the capital account.

In 2007, financial investments (assets) by the institutional sectors reached an amount of 514 927 million euros, whereas the Luxembourg’s economy generated sources of funds amounting to 511 854 million euros. The national economy in total experienced a surplus of 3 073 million euros or 8.2 percent of GDP used to finance the external sector recording deficit (see Table 18).

²⁶For example, in France, payments between firms for goods and services are frequently on a 60-days basis, meaning that the seller delivers the product while accepting payment 60 days later (Lequiller and Blades, 2006).

²⁷ For example, even if an employee’s salary is paid two or three months late, the salary will be entered in the month during which the work was carried out, because this is when an obligation to pay was generated by the employer. Since the salary is entered but has not been paid, there is a claim by the employee on the firm, which is recorded in ESA95 account F79. A similar entry will be made for tax due to the government but not yet settled.

**Table 18: Capital and financial accounts of total domestic economy and ROW
(in millions of euros)**

	Domestic		Rest of the world	
	Uses	Resources	Uses	Resources
Gross savings		11'090		
Balance of net current operations with ROW				-3'246
Investments (GCF)	7'844			
Net capital transfers	-173		173	
Net lending (+) / net borrowing (-) of capital account	3'073		-3'073	
Assets	514'927		375'675	
Liabilities		511'854		378'748
Net lending (+) / net borrowing (-) of financial account		3'073		-3'073

Source: Author's calculations.

Based on the institutional sectors accounts, the financial investments (assets) were dominated by the financial corporations (448 551 million euros) and the non-financial corporations (62 404 millions euros).

The following five tables illustrate the link between the capital account and the financial account for the economy's four institutional sectors as well as for the external sector. Each table contains the accumulation account due to the transactions in the traditional T-accounts. Saving, capital transfers receivable, acquisitions less disposals of non-produced non-financial assets and net incurrence of liabilities (financing) are used to acquire non-financial and financial assets (investments), as well as to transfer the capital transfers payable. This means that capital and financial accounts, presented in the Luxembourg financial SAM, have been combined in one table per institutional sector, and that the changes in the assets/uses are shown in the left-hand side and changes in the liabilities/resources in the right-hand side. The net lending / net borrowing is also provided (in bold) as the balancing item of the capital account and of the financial account.

The non-financial corporations (ESA95 S11) invested considerably in shares and other equity (42 878 million euros) and had a large sums of currency and deposits (15 756 million euros). They incurred liabilities amounting to 64 640²⁸ million euros. This mainly consists of loans (61 270 million euros), shares and other equity (13 337 million euros) and other accounts receivable/payable (-10 983 million euros). The issuance of debt securities was a less important source of financing of the Luxembourg non-financial corporations (only 41 million euros). In 2007, the latter recorded net borrowing amounting to 1 118 million euros.

²⁸ It represents the sum of 63 522 million euros (net total liabilities) and 1 118 million euros (borrowed amount).

It should be highlighted that the non-financial corporations sector is the only institutional sector in Luxembourg that needed to borrow (see Table 19). When compared to the euro-area financial accounts (Jellema *et al.*, 2004) Luxembourg's non-financial corporations exhibit a very similar structure for both financial investments and liabilities.

Table 19: Capital and financial accounts of non-financial corporations (in millions of euros)

Uses		Resources	
- Gross Fixed Capital Formation (P51)	4405	- Non-financial corporations savings (B8n)	1519
- Acquisitions less disposals of non-produced non-financial assets (K2)	394	- Capital transfers, receivable (D9)	266
- Changes in inventories (P52)	187		
- Acquisition less disposals of valuables (P53)	-9		
- Consumption of fixed capital (K1)	- 2074		
- Net lending (+) / borrowing (-) (B9)	-1118		
Total Uses	1785	Total Resources	1785
Assets		Liabilities	
- Currency and deposits (F2)	15756	- Currency and deposits (F2)	-130
- Securities other than shares (F3)	172	- Securities other than shares (F3)	41
- Loans (F4)	3439	- Loans (F4)	61270
- Shares and other equity (F5)	42878	- Shares and other equity (F5)	13337
- Insurance technical reserves (F6)	212	- Insurance technical reserves (F6)	-13
- Other accounts receivable/payable (F7)	-53	- Other accounts receivable/payable (F7)	-10983
		- Net lending (+) / borrowing (-) (B9)	-1118
Total Assets	62404	Total Liabilities	62404

The financial corporations (ESA95 S12) in Luxembourg acquired more than 85 percent of the economy's financial assets and incurred a similar amount of liabilities. Moreover, the amount of acquired financial assets being slightly higher than the liabilities leads to a positive financial transaction account for this sector (2 675 million euros). The financial corporations are thus the largest contributor of the positive total balance of the financial account.

This institutional sector incurred liabilities that consisted mainly of shares and other equity (309 403 million euros) and deposits (93 214 million euros), representing together 90 percent of total liabilities. On the assets side, financial corporations invested significantly in shares and other equity (188 866 million euros), loans (142 212 million euros) and currency and deposits (96 619 million euros) (see Table 20).

Table 20: Capital and financial accounts of financial corporations (in millions of euros)

Uses		Resources	
- Gross Fixed Capital Formation (P51)	445	- Financial corporations savings (B8n)	2623
- Capital transfers, payable (D9)	5	- Capital transfers, receivable (D9)	9
- Acquisitions less disposals of non-produced non-financial assets (K2)	23		
- Acquisition less disposals of valuables (P53)	-113		
- Consumption of fixed capital (K1)	-403		
- Net lending (+) / borrowing (-) (B9)	2675		
Total Uses	2632	Total Resources	2632
Assets		Liabilities	
- Monetary gold and SDRs (F1)	-12	- Currency and deposits (F2)	93359
- Currency and deposits (F2)	96619	- Securities other than shares (F3)	37946
- Securities other than shares (F3)	61777	- Loans (F4)	36832
- Loans (F4)	142212	- Shares and other equity (F5)	309403
- Shares and other equity (F5)	188866	- Insurance technical reserves (F6)	1112
- Insurance technical reserves (F6)	-204	- Other accounts receivable/payable (F7)	-32786
- Other accounts receivable/payable (F7)	-40707	- Net lending (+) / borrowing (-) (B9)	2675
Total Assets	448551	Total Liabilities	448551

The general government (ESA95 S13) net lending was the second largest in the economy (1 373 million euros) following that of the financial corporations, and represented 45 percent of the total amount that the economy lent to the external sector.

The total government liabilities incurred in 2007 were very small (378 million euros) and mostly represented newly contracted loans (308 million euros). Further, government paid back long-term debt securities for a total amount of 95 million euros (2.5 percent of GDP). The financial investments by the government were mainly in form of mutual fund shares (5 850 million euros) but were counter-balanced by the withdrawal of other deposits (4 482 million) that serve to finance the first. In 2007, the general government created a special fund entitled “Compensation fund” with the aim of investing the cash that was accumulated during the recent several years, as the government sub-sector “social security” registered significant surpluses. By law, the general government is not allowed to use these surpluses for any other purpose than to save as reserves for future pension financing needs. All in all, the balance was positive (see Table 21).

Table 21: Capital and financial accounts of government (in millions of euros)

Uses		Resources	
- Gross Fixed Capital Formation (P51)	1236	- Government savings (B8n)	2404
- Capital transfers, payable (D9)	501	- Capital transfers, receivable (D9)	74
- Acquisition less disposals of valuables (53)	2	- Acquisitions less disposals	
- Consumption of fixed capital (K1)	-602	of non-produced non-financial assets (K2)	33
- Net lending (+) / borrowing (-) (B9)	1374		
Total Uses	2511	Total Resources	2511
Assets		Liabilities	
- Currency and deposits (F2)	-4434	- Currency and deposits (F2)	19
- Securities other than shares (F3)	64	- Securities other than shares (F3)	-95
- Loans (F4)	41	- Loans (F4)	308
- Shares and other equity (F5)	5850	- Other accounts receivable/payable (F7)	146
- Other accounts receivable/payable (F7)	230	- Net lending (+) / borrowing (-) (B9)	1373
Total Assets	1751	Total Liabilities	1751

The households including NPISHs (ESA95 SIM) acquired 2 221 million euros of financial assets which mainly consisted of currency and deposits (3 531 million euros) and insurance technical reserves (68 million euros) while the households sold securities other than shares for a total amount of 1 415 million euros. In parallel, on the financial liabilities side, the households and the NPISHs incurred loans for 2 076 million euros.

As a result, their net lending equalled to 144 million euros. This sector registers the smallest lending balance among other economy's institutional sectors, accounting for only around 5 percent of net lending balance of the financial account. At the euro area level, the households are actually the only institutional sector that lends as all the other needs to borrow (Jellema *et al.*, 2004) (see Table 22). Moreover, from the point of view of portfolio composition, Luxembourg households display a high share of deposits in comparison to the other euro area countries. The share of deposits amounted about 50 percent of the financial wealth during the last few years, thus illustrating the low risk profile of Luxembourg households. In contrast, the weight of technical insurance provisions appears to be relatively low mainly due to high pay-as-you-go pension scheme in Luxembourg.

Finally, when translating Luxembourg's balance of payments into a financial account for the rest of the world, it appears that most of the investment of the rest of the world was in share and other equity (249 655 million euros), loans (72 606 million euros), currency and deposits (62 679 million euros) and securities other than shares (34 356 million euros). The main financing instruments (liabilities) were shares and other equity (164 536 million euros), loans (117 823 million euros), currency and deposits (80 902 million euros) and securities other than shares (57 060 million euros) while the amount of other accounts receivable/payable was reduced by 41 369 million euros. All in all, the net borrowing from the rest of the world, and thus net lending of Luxembourg, amounted to 3 073 million euros or 8.2 percent of GDP.

Table 22: Capital and financial accounts of households (in millions of euros)

Uses		Resources	
- Gross Fixed Capital Formation (P51)	1690	- Households savings (B8n)	541
- Capital transfers, payable (D9)	60	- Capital transfers, receivable (D9)	128
- Changes in inventories (P52)	1	- Acquisitions less disposals	
- Consumption of fixed capital (K1)	-924	of non-produced non-financial assets (K2)	302
- Net lending (+) / borrowing (-) (B9)	144		
Total Uses	971	Total Resources	971
Assets		Liabilities	
- Currency and deposits (F2)	3531	- Loans (F4)	2076
- Securities other than shares (F3)	-1415	- Other accounts receivable/payable (F7)	1
- Loans (F4)	12	- Net lending (+) / borrowing (-) (B9)	144
- Shares and other equity (F5)	25		
- Insurance technical reserves (F6)	68		
Total Assets	2221	Total Liabilities	2221

Table 23: Capital and financial accounts of ROW (in millions of euros)

Uses		Resources	
- Capital transfers, payable (D9)	46	- ROW savings (B8n)	-3246
- Net lending (+) / borrowing (-) (B9)	-3073	- Capital transfers, receivable (D9)	137
		- Acquisitions less disposals	
		of non-produced non-financial assets (K2)	82
Total Uses	-3027	Total Resources	-3027
Assets		Liabilities	
- Monetary gold and SDRs (F1)	12	- Currency and deposits (F2)	80902
- Currency and deposits (F2)	62679	- Securities other than shares (F3)	57060
- Securities other than shares (F3)	34356	- Loans (F4)	117823
- Loans (F4)	72606	- Shares and other equity (F5)	164536
- Shares and other equity (F5)	249655	- Insurance technical reserves (F6)	-204
- Insurance technical reserves (F6)	828	- Other accounts receivable/payable (F7)	-41369
- Other accounts receivable/payable (F7)	-44461	- Net lending (+) / borrowing (-) (B9)	-3073
Total Assets	375675	Total Liabilities	375675

One may expect to face discrepancies between the net lending/net borrowing item (ESA95 B9) compiled in the capital account and the same balancing item in the financial transactions account. However, in the case of Luxembourg, the national statistical office is compiling both non-financial and financial statistics, which facilitated the elimination of initial discrepancies. Therefore, the net lending/net borrowing item compiled in the capital account and the same balancing item in the financial transactions, presented in the financial SAM, are equal and this for each institutional sector.

3.2.4 Interest payments

The interest payments on the different assets between institutional sectors need to be presented separately from the other current transfers in the financial SAM, in order to provide appropriate framework for the financial CGE model. Interest payments *receivable* (ESA95 D41) by each sector from the other sectors need to be disaggregated by each financial instrument²⁹ considered in financial SAM (see Table 24). Interest payments *payable* (ESA95 D41) by each sector to the other sectors also need to be treated separately in the same manner (see Table 25). Furthermore, the disaggregation of the interest payments of the financial corporations institutional sector (ESA95 S12) into the interest payments of its four sub-sectors (ESA95 S121+S122+(S123+S124)+S125) is warranted.

Table 24: Interest payments payable

		Non-Financial Firms	Financial Firms	Government	Households	ROW
1	Monetary gold and SDRs					
2	Currency					
3	Deposits					
4	Other deposits					
5	Short-term debt securities					
6	Long-term debt securities					
7	Derivatives					
8	Short-term loans					
9	Long-term loans					
10	Quoted shares					
11	Unquoted equity					
12	Other equity					
13	Mutual fund shares (OPC)					
14	Net equity of households in life ins. res.					
15	Prepayments of ins. premiums and res.					
16	Other accounts receivable/payable					
	TOTAL INTERESTS PAYABLE	3,766	75,398	89	673	79,841

Sources: Statec (2011b) and Author's calculations.

Table 25: Interest payments receivable

	TOTAL INTERESTS RECEIVABLE	Mon. gold and SDRs	Currency	Deposits
Non-Financial Firms	2,620					
Financial Firms	82,370					
Government	461					
Households	985					
ROW	73,331					

Sources: Statec (2011b) and Author's calculations.

²⁹ When it is relevant.

The interest payments between the institutional sectors³⁰ - already presented in the real SAM - were treated as part of transfers and at this stage would need to be subtracted from the current transfers in the financial SAM. For example, the interest payments of financial corporations sector to the household sector - because of the households' deposits in the commercial banks - had to be subtracted from the current transfers of the financial corporations to the household sector. This procedure needs to be applied to all the interest payments of the different institutional sectors presented in the real SAM.

Unfortunately, it was not possible to include the disaggregation of the interest payments in this version of financial SAM for Luxembourg as these detailed data have not been officially published by the national statistical office (Statec) yet. According to the Statec, the quality of these data is not robust enough for them to be used publicly.

3.2.5 Complete financial accounts of Luxembourg economy for 2007

The complete financial accounts are composed of three parts. First, there are the financial flows, which are brought together in the table "Flows and funds". Second, there is a special account known as the "Revaluation account" which records all the changes in the prices of the assets. Cash holdings (or on the liability side the loans) are not subject to revaluation. And finally, the financial balance sheet accounts, which indicate the figures for the stock of assets and liabilities. Considered together, these tables show for each institutional sector the details of the financial counterpart of its net lending/net borrowing and the composition of its financial net worth³¹. The financial accounts are drawn up mainly on the basis of financial corporations' published accounts (i.e. central bank, banks, financial intermediaries, etc) and are particularly detailed for financial corporations which play a key role in the management of the financial transactions and constitute the prime statistical source for the financial accounts.

The financial accounts are usually recorded on 31 December³² each year. They are recorded in the national accounts in current prices. In the case of transactions using payment instruments denominated in other currencies (dollar, pound sterling, yen or any other) and transactions in shares and bonds - whose market prices are subject to change - the actual prices at the time of sale or purchase and the currency rate prevalent on the day transactions are applied.

In practical terms, the value of the financial holdings at the end of period T equals the initial stock at the end of year T-1 (or at the beginning of year T) *plus* the flow of transactions in assets or liabilities (financial flows) during the year *plus* the revaluations.

³⁰ Whom-to-whom matrix presented in Appendix B.

³¹ For a given financial asset – for example, shares – the following information can be retrieved from these accounts: the net issue flows and the purchasing sectors (financial flows, and the total value of the shares issues in economy and the sectors holding these shares) (Lequiller and Blades, 2006).

³² There are also quarterly financial accounts where financial flows and stocks are recorded on the 31st of each month.

The next two sets of tables indicate the financial holdings of Luxembourg institutional sectors, composed of assets and liabilities, on 31 December, 2007. In other words, these tables indicate the initial stock of assets and liabilities on the 1 January 2007 (or on 31 December 2006) *plus* the flow of financial transactions during the year 2007 *plus* the revaluations accounts for the same year. The final stock on 31 December 2007 stands as a result of these financial flows and revaluations that took place in 2007.

Table 26: Stocks, flows and revaluation of financial assets in Luxembourg, 2007
(in millions of euros)

		S1	S11	S121	S12 other	S13	S1M	S2
	STOCKS (01.01.2007)	4'442'494	256'613	52'391	4'071'330	22'930	39'231	4'040'696
F1	Monetary gold and SDRs	83	0	83	0	0	0	0
F21	Currency	1'725	135	0	250	2	1'338	0
F22	Deposits	506'785	12'336	0	556'626	539	18'542	478'184
F29	Other deposits	174'992	37'751	46736	0	8'434	813	0
F331	Short-term debt securities	203'824	76	363	203'073	0	312	11'573
F332	Long-term debt securities	733'648	264	4810	723'800	891	3'883	240'950
F34	Derivatives	47'114	61	0	47'053	0	0	5'038
F41	Short-term loans	348'327	3'620	0	344'447	46	214	235'978
F42	Long-term loans	318'704	26'786	0	291'180	738	0	242'119
F511	Quoted shares	789'144	3'207	0	783'090	1'914	933	115'567
F512	Unquoted equity	865'290	165'108	93	745'766	184	3'942	770'462
F513	Other equity	54'905	0	0	0	5'093	10	85
F52	Mutual fund shares (OPC)	237'607	0	0	232'008	0	5'599	1'737'618
F61	Net equity of households in life insurance	3'645	0	0	0	0	3'645	47'249
F62	Prepayments of insurance premiums	6'237	1'079	0	5'158	0	0	14'452
F7	Other accounts receivable/payable	150'465	6'191	306	138'879	5'089	0	14'1421

		S1	S11	S121	S12 other	S13	S1M	S2
	FINANCIAL FLOWS in 2007	514'927	62'404	6'663	441'888	1'751	2'221	375'675
F1	Monetary gold and SDRs	-12	0	-12	0	0	0	12
F21	Currency	146	-19	0	10	0	154	0
F22	Deposits	95'290	4'368	0	87'885	48	2'989	42'618
F29	Other deposits	16'035	11'407	6487	2'237	-4'482	387	20'061
F331	Short-term debt securities	35'261	129	-42	35'183	0	-9	953
F332	Long-term debt securities	13'848	13	74	15'104	64	-1'407	22'963
F34	Derivatives	11'488	30	0	11'458	0	0	10'440
F41	Short-term loans	73'571	-1'010	0	74'568	2	12	33'677
F42	Long-term loans	72'133	4'449	0	67'644	39	0	38'929
F511	Quoted shares	20'741	18	0	20'719	0	5	3'545
F512	Unquoted equity	192'307	42'860	7	149'171	5	264	98'734
F513	Other equity	4'596	0	0	4'476	120	1	1
F52	Mutual fund shares (OPC)	19'975	0	0	14'494	5'725	-245	147'376
F61	Net equity of households in life insurance	68	0	0	0	0	68	-265
F62	Prepayments of insurance premiums	8	212	0	-204	0	0	1'093
F7	Other accounts receivable/payable	-40'531	-53	149	-40'856	230	0	-44'461

		S1	S11	S121	S12 other	S13	S1M	S2
	REVALUATION in 2007	60'120	22'165	-82	34'054	1'881	2'183	19'672
F1	Monetary gold and SDRs	5	0	5	0	0	0	-12
F21	Currency	1	0	0	1	0	0	0
F22	Deposits	-10'972	-191	0	-12'594	-1	-51	-15'364
F29	Other deposits	-222	1'644	-2	0	1	-1	-3'052
F331	Short-term debt securities	-1'925	-8	4	-1'916	0	-3	-434
F332	Long-term debt securities	-18'842	-4	-89	-20'340	7	1'585	-2'220
F34	Derivatives	5'090	5	0	5'085	0	0	-5'718
F41	Short-term loans	-1'890	0	0	-1'890	0	0	53
F42	Long-term loans	-1'865	0	0	-1'865	0	0	441
F511	Quoted shares	49'411	581	0	47'725	935	169	21'613
F512	Unquoted equity	-5'163	20'127	0	-11'081	6	13	-34'713
F513	Other equity	15'171	0	0	0	942	0	-70
F52	Mutual fund shares (OPC)	33'302	0	0	33'070	-9	241	55'156
F61	Net equity of households in life insurance	230	0	0	0	0	230	6'143
F62	Prepayments of insurance premiums	-46	11	0	-57	0	0	-538
F7	Other accounts receivable/payable	-2'164	-1	1	-2'164	0	0	-1'615

		S1	S11	S121	S12 other	S13	S1M	S2
	STOCKS (31.12.2007)	5'017'541	341'181	58'971	4'547'192	26'562	43'635	4'436'042
F1	Monetary gold and SDRs	76	0	76	0	0	0	0
F21	Currency	1'872	116	0	261	2	1'493	0
F22	Deposits	591'103	16'513	0	634'155	587	21'480	505'439
F29	Other deposits	190'806	50'802	53'220	0	3'953	1'199	17'009
F331	Short-term debt securities	237'161	196	324	236'341	0	300	12'091
F332	Long-term debt securities	728'655	273	4'795	718'564	962	4'061	261'694
F34	Derivatives	63'692	96	0	63'596	0	0	9'760
F41	Short-term loans	420'008	2'609	0	417'125	48	226	269'707
F42	Long-term loans	388'971	31'235	0	356'959	778	0	281'489
F511	Quoted shares	859'296	3'806	0	851'533	2'849	1'107	140'725
F512	Unquoted equity	1'052'434	228'095	99	888'332	194	4'219	834'482
F513	Other equity	74'672	0	0	0	6'155	11	17
F52	Mutual fund shares (OPC)	290'884	0	0	279'573	5'716	5'595	1'940'151
F61	Net equity of households in life insurance	3'943	0	0	0	0	3'943	53'127
F62	Prepayments of insurance premiums	6'199	1'302	0	4'896	0	0	15'008
F7	Other accounts receivable/payable	107'770	6'137	455	95'859	5'319	0	95'344

Sources: BCL, Statec (2011c) and author's calculations.

Note: S1=S11+S121+S12other+S13+S1M

S1=S2 (except for F1: Monetary gold and SDRs)

S12=S121+S12other

S12other=S122+S123+S124

Table 27: Stocks, flows and revaluation of financial liabilities in Luxembourg, 2007
(in millions of euros)

		S1	S11	S121	S12 other	S13	S1M	S2
	STOCKS (01.01.2007)	4'728'742	409'614	52'437	4'246'005	5'728	14'959	3'754'365
F1	Monetary gold and SDRs							
F21	Currency	1'412	0	1269	0	143	0	313
F22	Deposits	672'594	1'650	50097	620'847	0	0	312'374
F29	Other deposits	64'764	0	0	64'764	0	0	110'228
F331	Short- term debt securities	16'339	1'863	0	14'476	0	0	199'058
F332	Long- term debt securities	259'956	5'001	0	254'859	95	0	714'643
F34	Derivatives	5'038	0	0	5'038	0	0	47'114
F41	Short- term loans	248'012	30'505	0	216'109	380	1'018	336'293
F42	Long- term loans	279'761	43'137	0	220'767	1'918	13'940	281'061
F511	Quoted shares	130'464	100'296	0	30'167	0	0	774'247
F512	Unquoted equity	918'003	197'499	649	722'801	0	0	717'749
F513	Other equity	5'236	2'289	0	0	0	0	49'755
F52	Mutual fund shares (OPC)	1'885'888	0	0	1'885'888	0	0	89'337
F61	Net equity of households in life in	50'894	434	80	50'380	1	0	0
F62	Prepayments of insurance prem	15'531	0	0	15'531	0	0	5'158
F7	Other accounts receivable/pay	174'851	26'940	343	144'376	3'191	1	117'035

		S1	S11	S121	S12 other	S13	S1M	S2
	FINANCIAL FLOWS in 2007	511'854	63'522	6'663	439'214	378	2'077	378'748
F1	Monetary gold and SDRs	0	0	0	0	0	0	0
F21	Currency	164	0	145	0	19	0	-17
F22	Deposits	82'883	-130	6282	76'730	0	0	55'026
F29	Other deposits	10'203	0	0	10'203	0	0	25'893
F331	Short- term debt securities	2'923	11	0	2'912	0	0	33'290
F332	Long- term debt securities	24'530	30	0	24'594	-95	0	12'282
F34	Derivatives	10'440	0	0	10'440	0	0	11'488
F41	Short- term loans	43'043	19'055	0	24'045	10	-67	64'205
F42	Long- term loans	57'443	42'215	0	12'787	298	2'143	53'618
F511	Quoted shares	724	0	0	724	0	0	23'563
F512	Unquoted equity	154'351	13'306	88	140'957	0	0	136'690
F513	Other equity	697	31	0	667	0	0	3'900
F52	Mutual fund shares (OPC)	166'968	0	0	166'968	0	0	384
F61	Net equity of households in life in	-197	-13	11	-195	0	0	0
F62	Prepayments of insurance prem	1'306	0	0	1'306	0	0	-204
F7	Other accounts receivable/pay	-43'623	-10'983	137	-32'923	146	1	-41'369

		S1	S11	S121	S12 other	S13	S1M	S2
	REVALUATION in 2007	30'037	23'405	-81	6'838	-1	-43	49'761
F1	Monetary gold and SDRs							0
F21	Currency	0	0	0	0	0	0	0
F22	Deposits	-17'957	0	0	-17'957	0	0	-8'380
F29	Other deposits	-3'475	0	0	-3'475	0	0	201
F331	Short- term debt securities	-438	-4	0	-434	0	0	-1'921
F332	Long- term debt securities	-2'578	-11	0	-2'567	-1	0	-18'483
F34	Derivatives	-5'718	0	0	-5'718	0	0	5'090
F41	Short- term loans	-226	15	0	-238	0	-3	-1'611
F42	Long- term loans	405	-12	0	457	0	-40	-1'829
F511	Quoted shares	23'612	23'259	0	353	0	0	47'412
F512	Unquoted equity	-31'546	669	-81	-31'222	0	0	-8'330
F513	Other equity	902	72	0	0	0	0	14'198
F52	Mutual fund shares (OPC)	62'784	0	0	62'784	0	0	25'674
F61	Net equity of households in life in	6'373	-1	0	6'374	0	0	0
F62	Prepayments of insurance prem	-526	0	0	-526	0	0	-57
F7	Other accounts receivable/pay	-1'576	-581	0	-995	0	0	-2'203

		S1	S11	S121	S12 other	S13	S1M	S2
	STOCKS (31.12.2007)	5'270'633	496'542	59'018	4'691'975	6'105	16'993	4'182'874
F1	Monetary gold and SDRs							
F21	Currency	1'576	0	1414	0	161	0	296
F22	Deposits	737'521	1'521	56379	679'621	0	0	359'021
F29	Other deposits	71'493	0	0	71'493	0	0	136'322
F331	Short- term debt securities	18'825	1'870	0	16'955	0	0	230'427
F332	Long- term debt securities	281'907	5'020	0	276'887	0	0	708'441
F34	Derivatives	9'760	0	0	9'760	0	0	63'692
F41	Short- term loans	290'829	49'574	0	239'916	390	949	398'887
F42	Long- term loans	337'609	85'340	0	234'010	2'216	16'043	332'850
F511	Quoted shares	154'800	123'555	0	31'244	0	0	845'222
F512	Unquoted equity	1'040'807	211'474	655	833'121	0	0	846'109
F513	Other equity	6'835	2'392	0	0	0	0	67'853
F52	Mutual fund shares (OPC)	2'115'640	0	0	2'115'640	0	0	115'396
F61	Net equity of households in life insurance	57'070	421	91	56'558	1	0	0
F62	Prepayments of insurance premiums	16'311	0	0	16'311	0	0	4'896
F7	Other accounts receivable/payable	129'652	15'375	480	110'458	3'337	1	73'463

Sources: BCL, Statec (2011c) and author's calculations.

Note: $S1 = S11 + S121 + S12\text{other} + S13 + S1M$

$S1 = S2$ (except for F1: Monetary gold and SDRs)

$S12 = S121 + S12\text{other}$

$S12\text{other} = S122 + S123 + S124$

Net financial worth (assets *minus* liabilities) of all institutional sectors of Luxembourg economy increased in 2007 except that of the non-financial corporations (as the increase of their liabilities has been higher of that of their assets)³³. As Table 28 shows, this improvement is mainly explained by the revaluation of stocks values in 2007 related to the positive results of the stock market activities. Moreover, 2007 has been the last year with positive economic developments before the 2008-2009 financial crisis. The financial flows explain the important part of the net financial worth increase in relative terms mostly for the government account and to a less extent for the financial corporations account.

On the assets side, the financial accounts indicate that on 31 December 2007 the value of the stocks of assets of all the institutional sectors increased (compared to their value on 1 January 2007). This positive development is, on the one hand, explained by the increase of assets for the all financial instruments and, on the other hand, by the positive revaluation of the existing assets on 31 January 31 2007. Government account registered the highest increase of assets' value with an increase of 16 percent followed by the financial corporations institutional account (an increase of around 12 percent in nominal terms in 2007)

On the liabilities side, the evolution was very similar. The value of the liabilities of all the institutional sectors increased in 2007. However, the households account registered the highest raise of liabilities' with an increase of around 14 percent followed by the financial corporations (increase of around 11 percent in nominal terms in 2007). As it was the case for the last decade, the increase of the households' long term loans explains this surge.

³³ Details regarding financial flows by institutional sector for 2007 are provided in section 3.2.3 of this paper.

Table 28: Net financial worth (Assets *minus* Liabilities), in millions of euros

Assets minus Liabilities	S11	S121	S12 other	S13	S1M	S2	Total
Stocks on 01.01.2007	-153'002	-47	-174'674	17'202	24'273	286'331	83
Financial Flows in 2007	-1'119	0	2'675	1'373	144	-3'073	0
Revaluation of stocks in 2007	-1'241	-1	27'216	1'882	2'226	-30'090	-7
Stocks on 31.12.2007	-155'361	-48	-144'783	20'457	26'643	253'168	76

Sources: BCL, Statec (2011c) and author's calculations.

Finally, the last column of Table 28 presents the totals of rows which should all be equal to zero meaning that the absolute value of the national financial wealth (ESA95 S11+S121+S12other +S13+S1M) and that of rest of the world (S2) are equal (Godley and Lavoie, 2007). However, as it is always the case and not only in Luxembourg, there is a small difference between the two values (76 million euros on 31.12.2007). This difference is fully explained by the fact that, according to ESA95 principles, the financial assets classified in the category “Monetary gold and SDRs (ESA95 F1)” are the only financial assets for which there are no counterpart liabilities in the system.

4 Conclusions

This paper presents the first financial SAM that has been built for Luxembourg for the year 2007. Its construction has been discussed in detail in this paper. Although, different sources of data have been used for building the financial SAM there were no major resulting statistical discrepancies and so there was no need to use any statistical method to balance the matrix. The structural relationship between the main institutional sectors (non-financial and financial corporations, government, households and the rest of the world) as represented in the financial SAM provided an opportunity to outline some characteristics of the Luxembourg economy, with special emphasis on the government sector and on the financial accounts.

The financial SAM for Luxembourg incorporates a very detailed disaggregated financial account of the economy presenting the financial transactions taking place between the national institutional units, and between them and the rest of the world. It thereby provides a useful overview of the main financial flows in the economy, as well as the main risks and interdependencies. The financial SAM provides a consistent and comprehensive set of financial information at a certain point in time.

By revealing the inter-sector linkages and showing the counterpart sectors for each type of transactions, the financial accounts assist us for detecting the interrelationships between portfolio shifts and restructuring of liabilities of various sectors as a consequence of, or in anticipation of, monetary policy decisions. Furthermore, this feature potentially enables tracing the impacts of a monetary policy decision from the financial to the non-financial side of the economy and back.

The financial SAM has two principal objectives: first, to organize the information that would allow an analysis of the structure of the economy of Luxembourg, and second, to provide the benchmark data set for the creation of a financial CGE model. This financial SAM is prepared to be used for calibration of the first financial CGE model for Luxembourg that will be presented in a forthcoming Working paper of the BCL.

There are two main issues that remain for the future development of the financial SAM for Luxembourg. First, the disaggregation of institutional sector ‘Financial corporations’ (ESA95 S12) should be included in the SAM in order to better take into account the structure of the financial sector in Luxembourg. Ideally, this sector should be disaggregated in four sub-institutional sectors (following ESA95 nomenclature): central bank (S121); other monetary financial institutions (MFIs) (S122); other financial intermediaries except insurance corporations and pension funds and financial auxiliaries (S123+S124); and insurance corporations and pension funds (S125). In this version of financial SAM, this sector has been disaggregated in two: ‘central bank’ and ‘other financial institutions’. Second, the interest rates (ESA95 D41) should be disaggregated according to the institutional sector that pays it or receives it. The structure of this disaggregation is presented in this paper (as an empty matrix). Unfortunately, at this stage, this data is not available.

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Appendix A: Disaggregation of the commodities and production sectors in the financial SAM of Luxembourg (following ESA95 accounting principles)

The classification of the commodities and production sectors in the financial Luxembourg SAM and its correspondence to ESA95 accounts, NACE Rev.1 is given in the following table. The classification of the commodities follows the same classification as the one for the production sectors, even though in general it should not necessarily be the same.

Table Appendix A: Disaggregation of the commodities and production sectors in the financial SAM of Luxembourg

Code ³⁴	Classification of the commodities and production sectors in the Luxembourg financial SAM	ESA95	Code NACE rev.1 ³⁵
sec1	Agriculture, hunting and forestry; fishing	Agriculture, hunting and related service activities	AYA+AYB
sec2	Mining and quarrying	Mining and quarrying of energy producing materials	CA
		Mining and quarrying except energy producing mat.	CB
sec3	Manufacturing	Manufacture of food products; beverages and tob.	DA
		Manufacture of textiles and textile products	DB
		Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear	AP19
		Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	AP20
		Manufacture of furniture; manufacturing n.e.c.	AP36
		Recycling	AP37
		Manufacture of pulp, paper and paper products; publishing and printing	DE
		Manufacture of coke, refined petroleum products and nuclear fuels	AP23
		Manufacture of chemicals and chemical products	AP24
		Manufacture of rubber and plastic products	AP25
	Manufacture of other non-metallic mineral products	AP26	

³⁴ Code of the sectors used in the financial SAM of Luxembourg.

³⁵ Classification of Economic Activities in the European Community (Eurostat and European Commission, 1996).

Table Appendix A: Disaggregation of the commodities and production sectors in the financial SAM of Luxembourg (continued)

Code ³⁶	Classification of the commodities and production sectors in the Luxembourg financial SAM	ESA 95	Code NACE rev.1 ³⁷
sec3	Manufacturing (continued)	Manufacture of basic metals Manufacture of fabricated metal products, except machinery and equipment Manufacture of machinery and equipment n.e.c. Manufacture of electrical and optical equipment Manufacture of transport equipment	AP27 AP28 AP29 DL DM
sec4	Electricity, gas and water supply	Electricity, gas, steam and hot water supply Collection, purification and distribution of water	AP40 AP41
sec5	Construction	Construction	AP45
sec6	Wholesale and retail trade, repair of motor vehicles, motorcycles and personal and household goods	Sale, maintenance and repair of motor vehicles and motorcycles; retail sale services of automotive fuel Wholesale trade and commission trade, except of motor vehicles and motorcycles Retail trade, except of motor vehicles and motorcycles; repair of personal and household goods	AP50 AP51 AP52
sec7	Hotels and restaurants	Hotels and restaurants	AP55
sec8	Transport, storage and communication	Transport, storage and communication	II
sec9	Financial intermediation services	Financial intermediation, except insurance and pension funding	AP65
sec10	Insurance	Insurance and pension funding, except compulsory social security	AP66
sec11	Services auxiliary to financial intermediation and insurance	Activities auxiliary to financial intermediation	AP67
sec12	Real estate activities; renting	Real estate activities Renting of machinery and equipment without operator and of personal and household goods	AP70 AP71
sec13	Business activities	Computer and related activities Research and development Other business activities	AP72 AP73 AP74
sec14	Public administration and defence; compulsory social security	Public administration and defence; compulsory social security	AP75
sec15	Education	Education	AP80
sec16	Health and social work	Health and social work	AP85
sec17	Other community, social and personal service activities; private households with employed persons	Sewage and refuse disposal, sanitation and similar activities Activities of membership organisation n.e.c. Recreational, cultural and sporting activities Other service activities Private households with employed persons	AP90 AP91 AP92 AP93 PP

³⁶ Code of the sectors used in the financial SAM of Luxembourg.

³⁷ Classification of Economic Activities in the European Community (Eurostat and European Commission, 1996).

Appendix B: Current account distributive transactions: whom-to-whom matrices³⁸

The following tables represent the current account distributive transactions among five institutional sectors, namely: non-financial corporations, financial corporations, government, households and the agents of the ROW. Each table presents a whom-to-whom framework for one specific tax or sub-tax. Five main taxes are presented: property income; current taxes on income, wealth, etc.; social contributions and benefits; other current transfers; and adjustment for the change in net equity of households in pension funds reserves. Their sub-taxes are presented after the main account of each tax. Each row represents resources of one specific institutional sector that have been provided by the other sectors, and each column indicates uses/expenditures of one specific sector to the other sectors.

The final table integrates all the transactions together and undergoes one final adjustment. As the corporate taxes and social contributions are accounted in taxes-subsidies account, it is necessary to subtract them from the distributive transactions in order to avoid double accounting.

1. Property income (ESA95 D4), in millions of euros

TOTAL D4: PROPERTY INCOME

	Non-financial firms	Financial firms	Government	Households	ROW - current	TOTAL RESOURCES
Non-Financial	0.4	1'953.9	10.5	0.4	7'722.8	9'688.06
Financial	3'896.8	0.0	79.3	645.1	129'109.6	133'730.80
Government	140.9	422.1	0.0	27.4	6.3	596.75
Households	0.0	1'060.6	0.0	0.0	123.3	1'183.96
ROW - current	9'204.5	129'484.4	0.1	13.5	0.0	138'702.48
TOTAL USES	13'242.67	132'921.06	89.87	686.40	136'962.04	

D41: Interest

	Non-financial firms	Financial firms	Government	Households	ROW - current	TOTAL RESOURCES
Non-Financial	0.00	1'937.12	10.08	0.00	672.79	2'619.99
Financial	2'572.31	0.00	79.27	645.11	79073.8	82'370.44
Government	48.84	391.44	0.00	14.14	6.29	460.71
Households	0.00	896.61	0.00	0.00	88.22	984.83
ROW - current	1'145.13	72'172.45	0.05	13.51	0.00	73'331.15
TOTAL USES	3'766.29	75'397.63	89.40	672.75	79'841.04	

³⁸ Data on ESA95 D41 are officially not published by Statec as they are not part of their official publication program. They have been transmitted directly to the author upon personal request.

D42: Distributed income of corporations

	Non-financial firms	Financial firms	Government	Households	ROW - current	TOTAL RESOURCES
Non-Financial	0.00	12.15	0.00	0.00	4'478.39	4'490.55
Financial	1'324.51	0.00	0.00	0.00	49484.2	50'808.66
Government	92.04	30.00	0.00	0.00	0.00	122.04
Households	0.00	29.31	0.00	0.00	35.11	64.42
ROW - current	4'102.17	48'158.97	0.00	0.00	0.00	52'261.14
TOTAL USES	5'518.71	48'230.43	0.00	0.00	53'997.65	

D43: Reinvested earnings on direct foreign investment

	Non-financial firms	Financial firms	Government	Households	ROW - current	TOTAL RESOURCES
Non-Financial	0.00	0.00	0.00	0.00	2'571.62	2'571.62
Financial	0.00	0.00	0.00	0.00	430.0	430.05
Government	0.00	0.00	0.00	0.00	0.00	0.00
Households	0.00	0.00	0.00	0.00	0.00	0.00
ROW - current	3'957.21	7'856.26	0.00	0.00	0.00	11'813.47
TOTAL USES	3'957.21	7'856.26	0.00	0.00	3'001.67	

D44: Property income attributed to insurance policyholders

	Non-financial firms	Financial firms	Government	Households	ROW - current	TOTAL RESOURCES
Non-Financial	0.00	4.61	0.00	0.00	0.00	4.61
Financial	0.00	0.00	0.00	0.00	121.7	121.65
Government	0.00	0.71	0.00	0.00	0.00	0.71
Households	0.00	134.69	0.00	0.00	0.00	134.69
ROW - current	0.00	1'296.73	0.00	0.00	0.00	1'296.73
TOTAL USES	0.00	1'436.74	0.00	0.00	121.65	

D45: Rent

	Non-financial firms	Financial firms	Government	Households	ROW - current	TOTAL RESOURCES
Non-Financial	0.44	0.00	0.47	0.35	0.02	1.29
Financial	0.00	0.00	0.00	0.00	0.0	0.00
Government	0.00	0.00	0.00	13.29	0.00	13.29
Households	0.02	0.00	0.00	0.00	0.00	0.02
ROW - current	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL USES	0.46	0.00	0.47	13.65	0.02	

2. Current taxes on income, wealth, etc. (ESA95 D5), in millions of euros**TOTAL D5: Current taxes on income, wealth, etc.**

	Non-financial firms	Financial firms	Government	Households	ROW - current	TOTAL RESOURCES
Non-Financial	0.0	0.0	0.0	0.0	0.0	0.00
Financial	0.0	0.0	0.0	0.0	0.0	0.00
Government	961.7	1'297.6	0.0	2'166.6	463.3	4'889.12
Households	0.0	0.0	0.0	0.0	0.0	0.00
ROW - current	0.0	0.0	0.0	70.7	0.0	70.71
TOTAL USES	961.71	1'297.57	0.00	2'237.27	463.28	

D51: Taxes on income

	Non-financial firms	Financial firms	Government	Households	ROW - current	TOTAL RESOURCES
Non-Financial	0.00	0.00	0.00	0.00	0.00	0.00
Financial	0.00	0.00	0.00	0.00	0.0	0.00
Government	910.64	1'177.29	0.00	2'103.78	463.28	4'654.99
Households	0.00	0.00	0.00	0.00	0.00	0.00
ROW - current	0.00	0.00	0.00	70.71	0.00	70.71
TOTAL USES	910.64	1'177.29	0.00	2'174.49	463.28	

D59: Other current taxes

	Non-financial firms	Financial firms	Government	Households	ROW - current	TOTAL RESOURCES
Non-Financial	0.00	0.00	0.00	0.00	0.00	0.00
Financial	0.00	0.00	0.00	0.00	0.0	0.00
Government	51.07	120.28	0.00	62.78	0.00	234.13
Households	0.00	0.00	0.00	0.00	0.00	0.00
ROW - current	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL USES	51.07	120.28	0.00	62.78	0.00	

3. Social contributions and benefits (ESA95 D6), in millions of euros**TOTAL D6: Social contributions and benefits**

	Non-financial firms	Financial firms	Government	Households	ROW - current	TOTAL RESOURCES
Non-Financial	0.0	0.0	0.0	88.6	0.0	88.64
Financial	0.0	0.0	0.0	63.3	0.0	63.29
Government	0.0	0.0	0.0	2'518.0	1'475.8	3'993.76
Households	88.6	73.9	3'497.2	0.0	177.4	3'837.11
ROW - current	0.0	0.0	1'277.2	255.5	0.0	1'532.66
TOTAL USES	88.64	73.90	4'774.37	2'925.41	1'653.14	

D611: Actual social contributions

	Non-financial firms	Financial firms	Government	Households	ROW - current	TOTAL RESOURCES
Non-Financial	0.00	0.00	0.00	88.64	0.00	88.64
Financial	0.00	0.00	0.00	63.29	0.0	63.29
Government	0.00	0.00	0.00	2'286.44	1'416.45	3'702.89
Households	0.00	0.00	0.00	0.00	0.00	0.00
ROW - current	0.00	0.00	0.00	140.72	0.00	140.72
TOTAL USES	0.00	0.00	0.00	2'579.10	1'416.45	

D612: Imputed social contributions

	Non-financial firms	Financial firms	Government	Households	ROW - current	TOTAL RESOURCES
Non-Financial	0.00	0.00	0.00	0.00	0.00	0.00
Financial	0.00	0.00	0.00	0.00	0.0	0.00
Government	0.00	0.00	0.00	231.56	59.31	290.87
Households	0.00	0.00	0.00	0.00	0.00	0.00
ROW - current	0.00	0.00	0.00	114.75	0.00	114.75
TOTAL USES	0.00	0.00	0.00	346.31	59.31	

D62: Social benefits other than social transfers in kind

	Non-financial firms	Financial firms	Government	Households	ROW - current	TOTAL RESOURCES
Non-Financial	0.00	0.00	0.00	0.00	0.00	0.00
Financial	0.00	0.00	0.00	0.00	0.0	0.00
Government	0.00	0.00	0.00	0.00	0.00	0.00
Households	88.64	73.90	3'497.18	0.00	177.38	3'837.11
ROW - current	0.00	0.00	1'277.19	0.00	0.00	1'277.19
TOTAL USES	88.64	73.90	4'774.37	0.00	177.38	

4. Other current transfers (ESA95 D7), in millions of euros**TOTAL D7: Other current transfers**

	Non-financial firms	Financial firms	Government	Households	ROW - current	TOTAL RESOURCES
Non-Financial	0.0	133.1	138.4	0.0	74.7	346.13
Financial	40.8	241.2	4.6	257.0	3'002.1	3'545.67
Government	0.0	13.7	0.0	0.0	38.8	52.56
Households	83.7	218.7	460.0	0.0	36.2	798.60
ROW - current	1.7	4'702.1	348.5	199.8	0.0	5'251.95
TOTAL USES	126.13	5'308.76	951.47	456.75	3'151.78	

D71: Net non-life insurance premiums

	Non-financial firms	Financial firms	Government	Households	ROW - current	TOTAL RESOURCES
Non-Financial	0.00	0.00	0.00	0.00	0.00	0.00
Financial	40.82	151.87	4.62	256.98	2'352.81	2'807.10
Government	0.00	0.00	0.00	0.00	0.00	0.00
Households	0.00	0.00	0.00	0.00	0.00	0.00
ROW - current	0.00	523.31	0.00	0.00	0.00	523.31
TOTAL USES	40.82	675.19	4.62	256.98	2'352.81	

D72: Non-life insurance claims

	Non-financial firms	Financial firms	Government	Households	ROW - current	TOTAL RESOURCES
Non-Financial	0.00	133.09	0.00	0.00	0.00	133.09
Financial	0.00	89.31	0.00	0.00	588.64	677.94
Government	0.00	13.72	0.00	0.00	0.00	13.72
Households	0.00	218.70	0.00	0.00	0.00	218.70
ROW - current	0.00	2'352.27	0.00	0.00	0.00	2'352.27
TOTAL USES	0.00	2'807.10	0.00	0.00	588.64	

D74: Current international cooperation

	Non-financial firms	Financial firms	Government	Households	ROW - current	TOTAL RESOURCES
Non-Financial	0.00	0.00	0.00	0.00	0.00	0.00
Financial	0.00	0.00	0.00	0.00	0.00	0.00
Government	0.00	0.00	0.00	0.00	9.08	9.08
Households	0.00	0.00	0.00	0.00	0.00	0.00
ROW - current	0.00	0.00	149.45	0.00	0.00	149.45
TOTAL USES	0.00	0.00	149.45	0.00	9.08	

D75: Miscellaneous current transfers

	Non-financial firms	Financial firms	Government	Households	ROW - current	TOTAL RESOURCES
Non-Financial	0.00	0.00	138.36	0.00	74.67	213.03
Financial	0.00	0.00	0.00	0.00	60.63	60.63
Government	0.00	0.00	0.00	0.00	29.76	29.76
Households	83.66	0.00	460.04	0.00	36.20	579.89
ROW - current	1.66	1'826.48	199.01	199.77	0.00	2'226.91
TOTAL USES	85.31	1'826.48	797.40	199.77	201.26	

5. Adjustment for the change in net equity of households in pension funds reserves (ESA95 D8), in millions of euros

D8: Adj. For the change in net equity of households in pension funds reserves

	Non-financial firms	Financial firms	Government	Households	ROW - current	TOTAL RESOURCES
Non-Financial	0.0	0.0	0.0	0.0	0.0	0.00
Financial	0.0	0.0	0.0	0.0	0.0	0.00
Government	0.0	0.0	0.0	0.0	0.0	0.00
Households	0.0	-6.7	0.0	0.0	0.0	-6.73
ROW - current	0.0	0.0	0.0	0.0	2.8	2.82
TOTAL USES	0.00	-6.73	0.00	0.00	2.82	

6) Total of five taxes: D4+D5+D6+D7+D8, in millions of euros

D4+D5+D6+D7+D8

	Non-financial firms	Financial firms	Government	Households	ROW - current	
Non-Financial	0.44	2'086.98	148.91	89.00	7'797.50	10'122.83
Financial	3'937.64	241.18	83.89	965.37	132'111.68	137'339.76
Government	1'102.59	1'733.44	0.00	4'712.00	508.36	8'056.38
Households	172.32	1'346.48	3'957.22	0.00	336.91	5'812.93
ROW - current	9'206.17	134'186.47	1'625.69	539.46	2.82	145'560.62
	14'419.16	139'594.55	5'815.71	6'305.83	140'757.26	

7) Total of five taxes (ESA95 D4+D5+D6+D7+D8) and additional adjustment of corporate taxes and social contributions, in millions of euros

D4+D5+D6+D7+D8 +adjustement on K and L

	Non-financial firms	Financial firms	Government	Households	ROW - current	
Non-Financial	0.44	2'086.98	148.91	89.00	7'797.50	10'122.83
Financial	3'937.64	241.18	83.89	965.37	132'111.68	137'339.76
Government	140.88	546.91	0.00	2'119.41	508.36	3'315.56
Households	172.32	1'346.48	3'957.22	0.00	336.91	5'812.93
ROW - current	9'206.17	134'186.47	1'625.69	539.46	2.82	145'560.62
	13'457.45	138'408.02	5'815.71	3'713.25	140'757.26	

Ajustement on K and L

D51B+D59	961.7	1186.5	0.0	62.8	
D61				2529.8	1475.8
Total	961.7	1186.5	0.0	2592.6	1475.8

B.2n adjusted	4'853	3'692	126	2'315	-12'109
D1 (resources)				8'123	5'047
D2			4'662		74
D3			-562		-21
D1 (uses)					1'040
Sub-total	1'519	2'623	1'727	12'538	-3'246
Final consumption	0	0	5'541	11'997	0
2nd sub-total	1'519	2'623	-3'814	541	-3'246
Taxes account in SAM			6'217		
B8n Net savings	1'519	2'623	2'403	541	-3'246

Appendix C: Disaggregated SAM with financial accounts for Luxembourg (2007) (in millions of euros)

		Commodities																
		com1	com2	com3	com4	com5	com6	com7	com8	com9	com10	com11	com12	com13	com14	com15	com16	com17
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Commodities	com1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com9	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com11	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com12	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com13	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com14	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com15	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com16	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com17	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Production activities	sec1	18	277	0	11	0	3	0	10	0	0	0	0	0	0	0	0	
	sec2	19	0	73	6	0	0	0	0	0	0	0	2	1	0	0	0	
	sec3	20	0	0	9'378	5	6	171	0	11	0	0	49	453	0	0	0	
	sec4	21	0	0	33	1'093	53	0	0	5	0	0	90	20	1	0	0	
	sec5	22	0	0	21	0	4'715	14	0	0	0	0	49	5	0	0	0	
	sec6	23	0	0	5	0	1	6'030	3	13	0	0	121	621	0	0	0	
	sec7	24	0	0	0	0	0	5	1'075	0	0	0	4	7	0	0	0	
	sec8	25	0	0	30	0	232	52	4	5'667	4	0	37	57	0	0	0	
	sec9	26	0	0	0	0	0	0	0	0	38'522	0	13	61	0	0	0	
	sec10	27	0	0	0	0	0	0	0	0	2'686	0	8	0	0	0	0	
	sec11	28	0	0	4	0	0	0	0	0	0	13'370	0	0	0	0	0	
	sec12	29	0	0	0	0	0	21	14	0	0	0	4'198	17	0	0	0	
	sec13	30	0	0	110	1	0	38	10	10	0	0	35	6'596	0	2	0	
	sec14	31	1	0	23	0	17	0	0	50	0	0	13	4	2'269	0	3	
	sec15	32	0	0	0	0	0	0	4	0	0	0	0	1	2	1'350	0	
	sec16	33	0	0	0	0	0	2	22	0	0	0	4	0	0	0	2'114	
	sec17	34	0	0	4	0	0	14	2	5	0	0	9	5	1	1	0	
Factors of production	Capital	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Labour	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Institutional sectors: current account	S11	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	S121	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	S12othe	39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	S13	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	S1M	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	S2	42	446	417	16'621	249	1	145	358	1'856	11'099	382	14'978	179	6'660	0	108	74

Appendix C: Disaggregated SAM with financial accounts for Luxembourg (2007) (in millions of euros) (continued)

			Commodities																
			com1	com2	com3	com4	com5	com6	com7	com8	com9	com10	com11	com12	com13	com14	com15	com16	com17
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
VAT on IC		43	2	0	127	11	53	3	2	19	5	16	4	22	451	0	1	1	3
VAT on final cons.		44	14	0	611	18	10	18	27	68	9	16	0	16	19	0	2	3	54
VAT on GCF		45	0	0	11	0	236	0	0	0	0	0	0	0	154	0	0	0	0
VAT on exports		46	0	0	199	0	0	157	0	49	147	0	0	0	83	0	0	0	0
Sub. on products		47	-2	0	0	-3	0	0	-1	-269	0	0	0	0	0	0	0	-4	-16
Taxes on capital		48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Taxes on labour		49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tariffs		50	0	0	1336	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Taxes on income		51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Taxes on int. rev. paid by res.		52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Taxes on int. rev. paid by non-res.		53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Taxes on production		54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sub. on production		55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TradeM on IC		56	22	4	507	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TradeM on HC		57	133	1	1911	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TradeM on GCF		58	1	0	205	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TradeM on exports		59	10	1	748	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TransM on IC		60	2	2	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TransM on HC		61	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TranM on GCF		62	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TransM on exports		63	1	1	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Institutional sectors: capital account	S11	64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	S121	65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	S12othe	66	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	S13	67	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	S1M	68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	S2	69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ch. in stocks		70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Monetary gold and SDRs		71	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Currency		72	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Deposits		73	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other deposits		74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Short-term debt securities		75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Long-term debt securities		76	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Derivatives		77	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Short-term loans		78	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Long-term loans		79	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Quoted shares		80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Unquoted equity		81	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other equity		82	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mutual fund shares		83	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net equity of househ. in life		84	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Prepay. of insurance prem		85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other ac.ccounts rec/pay		86	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total		87	907	498	31'976	1'373	5'327	6'671	1'531	7'485	49'787	3'100	28'366	4'897	15'152	2'272	1'464	2'192	1'596

Appendix C: Disaggregated SAM with financial accounts for Luxembourg (2007) (in millions of euros) (continued)

		Production activities																	
		sec1	sec2	sec3	sec4	sec5	sec6	sec7	sec8	sec9	sec10	sec11	sec12	sec13	sec14	sec15	sec16	sec17	
		18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	
Commodities	com1	1	46	0	280	1	1	0	58	0	0	0	0	0	1	0	1	0	
	com2	2	2	24	72	327	44	0	0	9	0	0	0	0	0	0	0	0	
	com3	3	87	10	4'953	86	897	301	326	938	147	5	134	24	211	51	49	280	72
	com4	4	5	2	353	298	10	53	20	21	94	0	4	6	9	42	8	19	13
	com5	5	5	0	37	28	81	78	7	94	75	9	16	36	23	219	37	53	24
	com6	6	0	2	175	0	3	332	1	18	0	0	0	26	18	10	1	2	11
	com7	7	0	0	15	1	10	39	4	31	21	4	25	2	35	13	3	30	4
	com8	8	0	0	56	5	21	102	5	951	226	10	155	8	633	33	2	10	17
	com9	9	2	1	63	6	28	172	12	53	5'278	390	8'091	46	72	49	2	18	11
	com10	10	4	0	15	3	20	25	3	46	40	517	9	39	21	6	0	2	3
	com11	11	0	0	0	0	0	0	0	0	24'475	973	1'275	0	0	0	0	0	0
	com12	12	2	1	133	10	421	362	89	225	179	25	188	153	282	73	17	15	41
	com13	13	3	4	812	63	1'368	2'126	25	801	2'178	73	493	320	2'010	213	33	155	117
	com14	14	0	0	0	0	0	0	0	0	15	1	9	0	0	2	0	0	0
	com15	15	0	0	5	0	2	4	1	7	0	0	1	0	24	4	10	5	5
	com16	16	6	0	0	0	0	0	0	1	0	0	0	0	7	1	16	0	0
	com17	17	4	0	20	1	14	41	13	8	28	1	21	0	69	1	1	7	208
Production activities	sec1	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	sec2	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	sec3	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	sec4	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	sec5	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	sec6	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	sec7	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	sec8	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	sec9	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	sec10	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	sec11	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	sec12	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	sec13	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	sec14	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	sec15	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	sec16	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	sec17	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Factors of production	Capital	35	74	15	815	187	421	1238	81	713	1858	370	1854	2120	903	1	6	264	66
	Labour	36	38	12	1312	96	989	1115	279	1048	1982	171	512	111	1643	879	759	736	450
Institutional sectors: current account	S11	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	S121	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	S12othe	39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	S13	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	S1M	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	S2	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Appendix C: Disaggregated SAM with financial accounts for Luxembourg (2007) (in millions of euros) (continued)

		Production sectors																	
		sec1	sec2	sec3	sec4	sec5	sec6	sec7	sec8	sec9	sec10	sec11	sec12	sec13	sec14	sec15	sec16	sec17	
		18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	
VAT on IC		43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
VAT on final cons.		44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
VAT on GCF		45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
VAT on exports		46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sub. on products		47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Taxes on capital		48	15	3	164	38	85	249	16	144	374	74	373	427	182	0	1	56	
Taxes on labour		49	11	3	392	29	296	333	83	313	593	51	153	33	491	403	348	337	
Tariffs		50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Taxes on income		51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Taxes on int. rev. paid by res.		52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Taxes on int. rev. paid by non-res.		53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Taxes on production		54	1	0	3	4	5	6	0	6	708	0	0	19	2	0	1	1	
Sub. on production		55	-81	0	-28	-1	-10	-13	-5	-29	0	0	0	-71	-16	0	-1	-10	
TradeM on IC		56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TradeM on HC		57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TradeM on GCF		58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TradeM on exports		59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TransM on IC		60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TransM on HC		61	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TransM on GCF		62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TransM on exports		63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Institutional sectors: capital account	S11	64	76	4	428	112	97	233	72	685	0	0	4	32	191	0	0	0	
	S121	65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	S12oth	66	0	0	0	0	0	0	0	0	0	326	20	58	0	0	0	0	
	S13	67	0	0	0	0	0	0	0	0	0	0	0	0	0	372	81	150	
	S1M	68	0	0	0	0	0	0	0	0	0	0	0	924	0	0	0	0	
S2	69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Ch. in stocks		70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Monetary gold and SDRs		71	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Currency		72	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Deposits		73	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Other deposits		74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Short-term debt securities		75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Long-term debt securities		76	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Derivatives		77	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Short-term loans		78	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Long-term loans		79	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Quoted shares		80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Unquoted equity		81	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Other equity		82	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Mutual fund shares		83	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Net equity of househ. in life		84	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Prepay. of insurance prem		85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Other accounts rec/pay		86	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total		87	302	82	10'074	1'294	4'803	6'796	1'092	6'083	38'596	2'694	13'374	4'255	6'805	2'381	1'358	2'146	1'308

Appendix C: Disaggregated SAM with financial accounts for Luxembourg (2007) (in millions of euros) (continued)

		Factors of production		Institutional sectors: current account							VAT on IC	VAT on final cons.	VAT on GCF	VAT on exports	Sub. on products	Taxes on capital	Taxes on labour	Tariffs	Taxes on income	Taxes on int. paid by res.	Taxes on int. paid by non-res.	Taxes on production	Sub. on production
		Capital	Labour	S11	S121	S12other	S13	S1M	S2														
		35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	
Commodities	com1	1	0	0	0	0	0	297	206	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com2	2	0	0	0	0	0	1	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com3	3	0	0	0	0	0	176	5012	15692	0	0	0	0	0	0	0	0	0	0	0	0	0
	com4	4	0	0	0	0	0	303	104	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com5	5	0	0	0	0	0	71	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com6	6	0	0	0	0	0	138	2390	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com7	7	0	0	0	0	0	867	426	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com8	8	0	0	0	0	87	577	4506	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com9	9	0	0	0	0	0	380	3514	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com10	10	0	0	0	0	0	339	2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com11	11	0	0	0	0	0	0	1643	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com12	12	0	0	0	0	0	2496	184	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com13	13	0	0	0	0	61	94	3385	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com14	14	0	0	0	0	2210	28	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com15	15	0	0	0	0	1207	174	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com16	16	0	0	0	0	1541	615	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com17	17	0	0	0	0	252	610	244	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Production sectors	sec1	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec2	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec3	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec4	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec5	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec6	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec7	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec8	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec9	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec10	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec11	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec12	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec13	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec14	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec15	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec16	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec17	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Factors of production	Capital	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Labour	36	0	0	0	0	0	0	1040	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Institutional sectors: current account	S11	37	4853	0	0	0	2087	149	89	7797	0	0	0	0	0	0	0	0	0	0	0	0	0
	S121	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	S12othe	39	3692	0	3938	0	241	84	965	132112	0	0	0	0	0	0	0	0	0	0	0	0	0
	S13	40	127	0	141	0	436	0	11	45	699	861	390	618	-294	2211	4006	1336	2567	60	51	758	-268
	S1M	41	2316	8123	172	0	1346	3'957	0	338	0	0	0	0	0	0	0	0	0	0	0	0	0
S2	42	0	5047	9206	0	134186	1626	539	3	20	25	11	18	0	0	0	0	0	0	0	0	-21	

Appendix C: Disaggregated SAM with financial accounts for Luxembourg (2007) (in millions of euros) (continued)

	Factors of production		Institutional sectors: current account								VAT on IC	VAT on final cons.	VAT on GCF	VAT on exports	Sub. on products	Taxes on capital	Taxes on labour	Tariffs	Taxes on income	Taxes on int. paid by res.	Taxes on int. paid by non-res.	Taxes on production	Sub. on production
	Capital	Labour	S11	S121	S12other	S13	S1M	S2															
	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55		
VAT on IC	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VAT on final cons.	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VAT on GCF	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VAT on exports	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sub. on products	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Taxes on capital	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Taxes on labour	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tariffs	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Taxes on income	51	0	0	0	0	0	0	2104	463	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Taxes on int. rev. paid by res.	52	0	0	0	0	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Taxes on int. rev. paid by non-res.	53	0	0	0	0	51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Taxes on production	54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sub. on production	55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TradeM on IC	56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TradeM on HC	57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TradeM on GCF	58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TradeM on exports	59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TransM on IC	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TransM on HC	61	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TransM on GCF	62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TransM on exports	63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Institutional sectors: capital account	S11	64	0	0	1519	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	S121	65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	S12other	66	0	0	0	0	2623	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	S13	67	0	0	0	0	0	2404	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	S1M	68	0	0	0	0	0	0	541	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S2	69	0	0	0	0	0	0	0	-3246	0	0	0	0	0	0	0	0	0	0	0	0	0	
Ch. in stocks	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Monetary gold and SDRs	71	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Currency	72	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Deposits	73	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other deposits	74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Short-term debt securities	75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Long-term debt securities	76	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Derivatives	77	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Short-term loans	78	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Long-term loans	79	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Quoted shares	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Unquoted equity	81	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other equity	82	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mutual fund shares	83	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net equity of househ. in life	84	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Prepay. of insurance prem	85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other accounts rec/pay	86	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	87	10987	13170	14976	0	141031	13755	16253	204508	719	886	401	635	-294	2211	4006	1336	2567	60	51	758	-288	

Appendix C: Disaggregated SAM with financial accounts for Luxembourg (2007) (in millions of euros) (continued)

		TradeM on IC	TradeM on HC	TradeM on GCF	TradeM on exports	TransM on IC	TransM on HC	TransM on GCF	TransM on exports	Institutional sectors: capital account						Ch. in stocks
										S11	S121	S12 other	S13	S1M	S2	
		56	57	58	59	60	61	62	63	64	65	66	67	68	69	70
Commodities	com1	1	0	0	0	0	0	0	0	0	0	0	0	7	0	8
	com2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	com3	3	0	0	0	0	0	0	0	2'290	0	73	112	79	0	-30
	com4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	8
	com5	5	0	0	0	0	0	0	0	1700	0	275	1'110	1294	0	47
	com6	6	534	2'044	206	759	0	0	0	0	0	0	0	0	0	0
	com7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com8	8	0	0	0	0	28	12	5	34	0	0	0	0	0	0
	com9	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com11	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com12	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com13	13	0	0	0	0	0	0	0	0	379	0	97	14	308	20
	com14	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com15	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com16	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	com17	17	0	0	0	0	0	0	0	0	36	0	0	1	1	14
Production sectors	sec1	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec2	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec3	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec4	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec5	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec6	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec7	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec8	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec9	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec10	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec11	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec12	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec13	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec14	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec15	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec16	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sec17	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Factors of production	Capital	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Labour	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Institutional sectors: current account	S11	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	S121	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	S12oth	39	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	S13	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	S1M	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S2	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Appendix C: Disaggregated SAM with financial accounts for Luxembourg (2007) (in millions of euros) (continued)

		TradeM on IC	TradeM on HC	TradeM on GCF	TradeM on exports	TransM on IC	TransM on HC	TransM on GCF	TransM on exports	Institutional sectors: capital account						Ch. in stocks	
		56	57	58	59	60	61	62	63	S11	S121	S12other	S13	S1M	S2	70	
VAT on IC		43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
VAT on final cons.		44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
VAT on GCF		45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
VAT on exports		46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sub. on products		47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Taxes on capital		48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Taxes on labour		49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Tariffs		50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Taxes on income		51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Taxes on int. rev. paid by res.		52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Taxes on int. rev. paid by non-res.		53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Taxes on production		54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sub. on production		55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TradeM on IC		56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TradeM on HC		57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TradeM on GCF		58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TradeM on exports		59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TransM on IC		60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TransM on HC		61	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TransM on GCF		62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TransM on exports		63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Institutional sectors: capital account	S11	64	0	0	0	0	0	0	0	0	0	0	265	0	0	0	
	S121	65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	S12other	66	0	0	0	0	0	0	0	0	0	0	9	0	0	0	
	S13	67	0	0	0	0	0	0	0	0	33	0	0	58	16	0	
	S1M	68	0	0	0	0	0	0	0	0	302	0	0	97	0	31	
S2	69	0	0	0	0	0	0	0	0	58	0	28	131	2	0		
Ch. in stocks		70	0	0	0	0	0	0	0	179	0	-113	2	1	0	0	
Monetary gold and SDRs		71	0	0	0	0	0	0	0	0	-12	0	0	0	12	0	
Currency		72	0	0	0	0	0	0	0	-19	0	10	0	154	0	0	
Deposits		73	0	0	0	0	0	0	0	4368	0	87885	48	2989	42618	0	
Other deposits		74	0	0	0	0	0	0	0	11407	6487	2237	-4482	387	20061	0	
Short-term debt securities		75	0	0	0	0	0	0	0	129	-42	35183	0	-9	953	0	
Long-term debt securities		76	0	0	0	0	0	0	0	13	74	15104	64	-1407	22963	0	
Derivatives		77	0	0	0	0	0	0	0	30	0	11458	0	0	10440	0	
Short-term loans		78	0	0	0	0	0	0	0	-1010	0	74568	2	12	33677	0	
Long-term loans		79	0	0	0	0	0	0	0	4449	0	67644	39	0	38929	0	
Quoted shares		80	0	0	0	0	0	0	0	18	0	20719	0	5	3545	0	
Unquoted equity		81	0	0	0	0	0	0	0	42860	7	149171	5	264	98734	0	
Other equity		82	0	0	0	0	0	0	0	0	0	4476	120	1	1	0	
Mutual fund shares		83	0	0	0	0	0	0	0	0	0	14494	5725	-245	147376	0	
Net equity of househ. in life		84	0	0	0	0	0	0	0	0	0	0	0	68	-265	0	
Prepay. of insurance prem		85	0	0	0	0	0	0	0	212	0	-204	0	0	1093	0	
Other accounts rec/pay		86	0	0	0	0	0	0	0	-53	149	-40856	230	0	-44461	0	
Total		87	534	2'044	206	759	28	12	5	34	67381	6663	442249	3491	3971	375721	69

Appendix C: Disaggregated SAM with financial accounts for Luxembourg (2007) (in millions of euros) (continued)

			Financial instruments																Total
			71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87
Commodities	com1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	907
	com2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	498
	com3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3'1976
	com4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1'373
	com5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5'327
	com6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6'671
	com7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1'531
	com8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7'485
	com9	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49'787
	com10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3'100
	com11	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28'366
	com12	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4'897
	com13	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15'152
	com14	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2'272
	com15	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1'464
	com16	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2'192
	com17	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1'596
Production sectors	sec1	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	302
	sec2	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	82
	sec3	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10'074
	sec4	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1'294
	sec5	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4'803
	sec6	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6'796
	sec7	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1'092
	sec8	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6'083
	sec9	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38'596
	sec10	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2'694
	sec11	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13'374
	sec12	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4'255
	sec13	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6'805
	sec14	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2'381
	sec15	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1'358
	sec16	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2'146
	sec17	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1'308
Factors of production	Capital	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10'987
	Labour	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13'170
Institutional sectors: current account	S11	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14976.3
	S121	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
	S12other	39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	141031.3
	S13	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13755
	S1M	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16253
	S2	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	204508

Appendix C: Disaggregated SAM with financial accounts for Luxembourg (2007) (in millions of euros) (continued)

		Financial instruments																Total	
		71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86		87
VAT on IC		43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	719
VAT on final cons.		44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	886
VAT on GCF		45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	401
VAT on exports		46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	635
Sub. on products		47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-294
Taxes on capital		48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2'211
Taxes on labour		49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4'006
Tariffs		50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1'336
Taxes on income		51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2'567
Taxes on int. rev. paid by res.		52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	60
Taxes on int. rev. paid by non-res.		53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	51
Taxes on production		54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	758
Sub. on production		55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-288
TradeM on IC		56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	534
TradeM on HC		57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2'044
TradeM on GCF		58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	206
TradeM on exports		59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	759
TransM on IC		60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28
TransM on HC		61	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
TransM on GCF		62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
TransM on exports		63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34
Institutional sectors: capital account	S11	64	0	0	-130	0	11	30	0	19055	42215	0	13306	31	0	-13	0	-10983	67381
	S121	65	0	145	6282	0	0	0	0	0	0	0	88	0	0	11	0	137	6663
	S12other	66	0	0	76730	10203	2912	24594	10440	24045	12787	724	140957	667	166968	-195	1306	-32923	442249
	S13	67	0	19	0	0	0	-95	0	10	298	0	0	0	0	0	0	146	3491
	S1M	68	0	0	0	0	0	0	0	-67	2143	0	0	0	0	0	0	1	3971
	S2	69	0	-17	55026	25893	33290	12282	11488	64205	53618	23563	136690	3900	384	0	-204	-41369	375721
Ch. in stocks		70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	69
Monetary gold and SDRs		71	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Currency		72	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	146
Deposits		73	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	137909
Other deposits		74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36096
Short-term debt securities		75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36214
Long-term debt securities		76	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36811
Derivatives		77	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21928
Short-term loans		78	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	107248
Long-term loans		79	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	111061
Quoted shares		80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24287
Unquoted equity		81	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	291041
Other equity		82	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4598
Mutual fund shares		83	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	167352
Net equity of househ. in life		84	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-197
Prepay. of insurance prem		85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1101
Other acc. rec/pay		86	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-84992
Total		87	0	146	137909	36096	36214	36811	21928	107248	111061	24287	291041	4598	167352	-197	1101	-84992	



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