The savings of households in the national accounts

Catherine Rigo[1]

Introduction

The system of national accounts provides a harmonised accounting framework for analysing the accounts of the various sectors of the economy, be it households, non-profit institutions serving households (NPISHs), corporations, general government or the rest of the world. At the European level, that framework is defined by the ESA 95 (European System of Accounts).[2] The household account will be the particular focus of our attention at this conference, which is concerned with the measurement of the financial position of households.

Numerous studies have been conducted on the subject of household wealth. Some of them refer to saving, a concept defined in the national accounts. The following questions may be addressed in this connection: how is saving measured in the national accounts, what does this concept involve, what are the different concepts of savings, do they come to measures of saving which are influenced by institutional features; in what way does saving represent an indicator of the financial position of households and what link can be established with the financial statistics?

1.   Household saving as defined in the national accounts

The ESA 95 defines the structure of the sector accounts. These accounts present for each institutional sector a systematic description of the different stages of the economic process: production; generation, distribution, redistribution and use of income; accumulation of financial and non-financial assets. The sector accounts also include balance sheets recording the stocks of assets and liabilities at the beginning and end of the accounting period.

The conceptual framework mentioned here can be tackled in two ways. The first would be to adopt a very formal approach, describing the strict framework of the national accounts: the non-financial sector accounts comprise a set of interlinked accounts. Each account corresponds to a stage of the production process, and shows the corresponding resources and uses. Since the resources and uses do not generally balance out, each account records a balance which has an economic significance (value added, operating surplus, primary incomes, disposable income, saving, net lending/borrowing), the balance of an account being carried forward to the start of the next account. The second way of tackling the subject - the approach adopted here - is more analytical. In that sense, shortcuts will be taken by omitting some details while remaining faithful to the philosophy of the accounts.

---

[1]   Financial and Economic Statistics, National Bank of Belgium. The views expressed in this paper are those of the author and do not necessarily reflect those of the National Bank of Belgium.

[2]   The ESA 95 is the European transcription of the System of National Accounts "SNA 1993" defined at world level and published jointly by the United Nations, the IMF, the EC, the OECD and the World Bank. ESA 95 is totally consistent with that system.

1.1 Standard measurement of household saving

Conceptually, saving is not a directly measurable macroeconomic variable. The national accounts define this aggregate as a balance. More precisely, saving is the balance item of the "Use of income account".

Saving is defined according to the basic equation: S = YD – C + adj. pension funds.

Leaving aside the adjustment for pension funds which will be considered later on, households receive current income (disposable income YD), which is consumed in varying degrees (private consumption C), the balance representing their saving (S). These three variables constitute flows: they relate to a given period of time (one quarter, one year).

To find out what the concept of household saving covers, it is therefore necessary to answer the following questions:

- what does the concept of disposable income cover?
- what is meant by private consumption?
- why make an adjustment in respect of pension funds?

1.1.1 Household disposable income

Household disposable income is composed of two main income categories: primary incomes and transfers.

Primary incomes

These are the incomes accruing to the economic agents as a consequence of their direct involvement in the production process. They also include the incomes received by the owners of financial assets or of tangible non-produced assets (such as land) in return for making those assets available to other sectors of the economy.

Primary incomes therefore include:

- incomes derived from an occupation, be it the incomes of paid employees (including salaries in kind) or those earned by self-employed persons. The latter are included in what is referred as "mixed income"; they implicitly comprise an element of remuneration for the work done by individuals, which cannot be distinguished from those persons' profits as entrepreneurs.

- incomes obtained from ownership of fixed assets (rents on buildings let out)
    - rents actually collected on residential property let out to third parties;
    - "imputed" rents in the case of owner-occupied housing (the owners are assumed to pay a notional rent to themselves).

- net property incomes: these are the incomes derived from the ownership of movable assets minus the cost of borrowings, ie the amount of the interest and dividends collected on the financial investments of households less the amount of interest paid by households on borrowings. Net property income also includes the rents on land.[3] Capital gains or losses are however never considered when assessing net property income.

---

[3] The ESA 95 also stipulates the recording of a notional flow relating to investment incomes earned by insurance companies and pension funds on the management of their technical reserves. These incomes are assumed to be paid to households in so far as the technical reserves are treated as assets belonging to the policyholders. That element is nevertheless neutralised to determine disposable income, since that income is in practice retained by the insurance companies and pension funds. It is therefore regarded as given back to them by households in the form of premium supplements and contributions additional to the premiums and contributions actually payable.

Current transfers

These transfers take place during the secondary redistribution of incomes. The redistribution operations are largely attributable to the government's intervention in the economy. But they may also be "private" in character, for example as a result of possible links between resident and non-resident households or also in consequence of transactions between households and non-life insurers.

The transfers in question here are flows which may be receivable or payable by households; ie, they may be positive or negative, increasing or reducing primary incomes.

The main items recorded as payable by households are current taxes on income and wealth, and social security contributions (to either public or private schemes). The main items recorded as receivable by households are social benefits under public or private schemes.

Table 1

Disposable income of households[1]

Data for the euro area in 2004

	Billions of euro	**Percentage of gross national income**
Primary income	5,762	74.4
Compensation of employees	3,747	
Operating surplus and mixed income[2]	1,253	
Net property income	762	
Current transfers	–633	–8.2
Current transfers received	1,765	
Current transfers paid	2,398	
Disposable income	5,129	66.2

[1] Including the non-profit institutions serving households (NPISHs). The data are "gross", ie before deducting the depreciation of capital from income (see point 2). [2] Rents on buildings and income from entrepreneurship activities.

Source: Eurostat.

1.1.2 Household consumption

Household consumption (commonly called private consumption) covers the final consumption of goods and services ie the expenditure incurred by households for the direct satisfaction of individual needs. That means both non-durable consumption goods and consumer durables such as domestic electrical appliances or cars.

The goods and services received by employees as wages in kind are recorded in consumption with no impact on saving as this is also considered as a wage item. The rents imputed to owner occupiers are also counted as household consumption. These imputed rents thus augment income and consumption by an equivalent amount so that, in the end, this element is also neutral for the measurement of saving.

Household consumption however excludes purchases of dwellings and land, and expenditure made by households owning unincorporated enterprises when incurred for business purposes.

1.1.3 Adjustment for pension funds reserves

The ESA 95 provides for an adjustment to take account of the change in the net equity of households in pension funds reserves. That adjustment is needed to make appear in the saving of household the change in the actuarial reserves on which households have a definite claim and which are fed by premiums and contributions recorded in the secondary distribution of income account as social contributions.

In the system's financial accounts and statements of assets and liabilities, households are regarded as the owners of the reserves of private funded schemes; it is therefore necessary to introduce an adjustment item in order to ensure that any excess or deficit of contributions over benefits (ie "transfers" payable over "transfers" receivable) does not affect household saving. In order to neutralise the effect of unbalanced contributions and benefits, an adjustment is made to the disposable income of the households to arrive at the amount of their saving.[4]

Thus, the household saving figure is the same as it would be if pension contributions and pension benefits were not recorded as current transfers in the secondary distribution of income account.

Table 2

Saving of households[1]

Data for the euro area in 2004

	Billions of euro	**Percentage of gross national income**
Disposable income	5,129	66.2
Adjustment pension funds reserves	61	0.8
Final consumption expenditure	4,428	57.1
Saving	762	9.8
Saving ratio	14.7%	

[1] Including the non-profit institutions serving households (NPISHs). The data are "gross", ie before deducting the depreciation of capital from income (see section 2).

Source: Eurostat.

---

[4] It is worth noting that the transactions (contributions and benefits) relating to individual life insurance funds never appear in the secondary distribution account of households.

1.2 Influence of institutional characteristics on the measurement of household saving

As it is difficult to gauge the absolute level of household saving, economic analyses in this field often deal with international comparisons which make possible to assess the relative position of a country. For purpose of international comparison, a common definition of household saving is needed. The national accounts, by providing a harmonized framework, are of great help.

However even with a single definition of saving, difficulties to compare and interpret data remain. Differences in institutional arrangements can interfere in the measure of saving, and even more with the measure of the savings ratio,[5] affecting their comparability across countries.

The first institutional feature, which relates to the size of individualised public services offered to households, has been managed in the ESA 95 by the introduction of the concepts of "actual final consumption" and "adjusted disposable income". It results in the definition of an adjusted saving ratio which is more suitable for international comparisons. The influence of other institutional features remains whatever the internationally agreed concept of saving is (standard or adjusted). Some studies have tried to bring accounting improvements but these must still be considered as tentative.[6] These attempts rely on simple and mechanical accounting adjustments and sometimes have to compose with the unavailability or some unreliability of data. They also often deal with numerous corrections.[7] Only a few of them, directly relating to the institutional environment, are briefly treated here.

1.2.1 Individually consumed public services

The extent to which individually consumed public services (such as health care, education) are provided to households differ according to countries. This is not without having an influence on the standard measure of household saving ratio.

In countries where many services are provided by the authorities and financed with tax revenue ("welfare states"), the disposable income of households will be relatively low as well as their personal expenditure as final consumption. If, in another country, households pay less taxes but have to buy these services on the market ("market-base countries"), their disposable income is higher as well as their final consumption. Compared to what happens in a welfare state, saving is the same (other things being equal) but the saving ratio is not. Welfare states tend to have relatively high saving ratio compared to market-base systems.

The introduction in the ESA 95 of both a concept of effective final consumption of households and a concept of adjusted disposable income helps to answer this question. The aim was to deal with a number of points: not only to ensure greater international comparability of the

---

[5] As the households saving ratio is the ratio of saving to disposable income (and the adjustment for change in pension funds reserves), it depends on the measure of saving (numerator), but also on the measure of disposable income (denominator). Some institutional features can be neutral on the measure of saving but not on the measure of disposable income so that the saving ratio is even more sensitive to cross-country institutional differences.

[6] OECD (2005) "Comparing household saving rates across oecd countries"; OECD (2002) "The various measures of the saving rate and their interpretation"; OFCE (2003) "Taux d'épargne, le paradoxe franco-britannique".

[7] For instance, some of them also propose corrections to incorporate capital gains or losses in the saving rate and to correct capital income for inflation. Corrections to the saving ratio can also aim at considering expenditure for durables as capital expenses.

data, but also to give a clearer picture of the role played by governments in the provision of services to households and to offer a more complete measure of household incomes.

While the concept of "final consumption expenditure", which is used in the standard definition of household saving, covers the consumption expenditure borne/financed directly by households, the concept of "actual final consumption" covers the goods and services at their disposal for individual consumption, whether the expenditure is ultimately borne by the households themselves or by the government.[8] It therefore includes, for example, expenditure on health care or education, paid for by the government but forming the subject of individual consumption by households.

However, the use of one consumption concept or the other is neutral as regards the estimate of the level of household saving: if one refers to the concept of effective final consumption, the additional consumption corresponding to the individual consumed public services is added to household resources in the form of transfers in kind. This gives a concept of adjusted disposable income, which in the case of households is higher than their disposable income.

While the level of saving is the same in both cases, the saving ratio - ie saving expressed as a percentage of disposable income - differs according to which definition of disposable income is used (standard ie unadjusted or adjusted). The "adjusted" saving ratio is lower than the standard one. Implicitly, this is linked to the fact that the "adjusted saving ratio" takes into account a revenue that is entirely consumed. The larger this revenue is, ie the most the government play a role in delivering individual public services in the economy, the greater the downwards adjustment of the saving ratio will be. The differences in standard saving ratios across countries will fade away when considering the adjusted saving ratio.

Schema 1

Definition of an adjusted saving ratio in the national accounts

Standard measurement of saving in the NA		Alternative measurement of saving in the NA
Disposable income		Disposable income + Social transfers in kind = Adjusted disposable income
Final consumption expenditure		Final consumption expenditure + Individually consumed public services = Actual final consumption
Saving	=	Saving
Saving ratio = saving / disposable income	>	Adjusted saving ratio = saving / adjusted disposable income

---

8 Consumption expenditure paid for by non-profit institutions serving households (NPISHs) but benefiting households is omitted in this paper.

1.2.2   Indirect versus direct taxation

Whether taxation relies mainly on direct taxes or on indirect taxes can also affect the comparability of saving ratios because the denominator, disposable income, is affected. The absolute level of saving however is unchanged as it is neutral for household, as far as their saving is concerned, to pay taxes on revenue or on final consumption.

The more the taxation system relies on direct taxes (respectively indirect taxes), the higher (respectively the lower) the saving ratio is, the disposable income being relatively low (respectively high). This distortion can be offset by treating indirect taxes in the same way as direct taxes: they are deducted from both disposable income and consumption, leaving saving unchanged. The saving ratio is then revised upwards, all the more as indirect taxes are large. This correction needs to know the amount of indirect taxes which are paid by the only households on the only private consumption.

1.2.3   Pension schemes[9]

Both the absolute measure of saving and the measure of saving ratio are affected by the choice made by countries as regard pension system. Whether pension schemes are organised by the government through an unfunded pension system or whether households are encouraged to subscribe to funded private pension schemes is not neutral on the measurement of household saving.

In unfunded social security pension schemes, the excess (or deficit) of pension contributions over pension benefits has a negative (or positive) impact on the household disposable income and hence on the level of the saving and on the saving ratio. If the unfunded scheme runs a surplus, this will benefit the government and not the households.

In the case of funded private pensions schemes, imbalances between contribution and benefits have no impact on household saving as the latter is corrected by an adjustment made to disposable income to take into account the change in net equity of households in pension funds reserves (cf. 1.1.3). Moreover, as households are deemed to hold the assets of the funds, property income earned by investing the reserves comes to households and is added to their resources. That is not the case with unfunded public pension schemes.

Countries with widespread funded private pension schemes will tend to have higher saving ratios when those schemes are running a surplus. The increasing claim by households on the funds is considered to be part of their saving.

The different treatment of pension schemes in the national accounts reflects the fundamental specificity of each system. In the case of private funded pension scheme, households have a legal claim which is considered as part of their financial wealth. In social security schemes, they don't. In this view, the core question is the appropriateness of a common treatment to the two systems. Relating questions are: while the systems are different in their legal foundations, do households have a different perception of their future resources?; what would be the consequences of a change in the accounting of pension schemes for other institutional sectors such as government?; does a common treatment have to be applied to life-insurance which in some countries are more important than pension funds?

An assessment of the influence of the three institutional features described above, according to a recent study made by the OECD, is provided in annex.

---

[9]   The treatment of pension schemes in the national accounts is complex. This short paper does not aim at proposing a complete view in this matter. It will focus on the philosophy behind the treatment of the two main different systems : social security unfunded schemes and private funded schemes.

2.   Gross/net saving

The level of saving can be defined in two ways, depending on whether or not allowance is made for the consumption of fixed capital by households. This concept refers to the depreciation of the capital stock of households, ie the writing down of the value of both housing and the equipment used by households for business purposes.

Net saving is defined by deducting depreciation from income.[10] This then constitutes saving after taking account of the depreciation of immovable assets. In economic terms, as net saving represents the flow of resources available for financing net additions to the stock of capital, it may be preferable to measuring gross saving, which does not incorporate any reduction to allow for depreciation.

On the other hand, since depreciation is not a real cash expenditure for households, gross saving offers a better definition of cash saving, closer to the ordinary perception of saving and closer to the concept of saving measured in budget inquiries. Moreover, in view of the problems of measuring depreciation, it may be preferable to refer to a gross saving concept in certain cases, particularly for the purpose of international comparison that could suffer from cross-countries inconsistent measures of depreciation.

Table 3

Range of households saving measurement[1]

Data for the euro area in 2004

	Gross	**Net (of capital depreciation)**
Relative to standard (unadjusted) disposable income	14.7%	9.6%
Relative to adjusted disposable income	12.4%	8.1%

[1] Including the non-profit institutions serving households (NPISHs).

Source: Eurostat, own calculations.

3.   Allocation of savings

Savings, in so far as they consist of households' current financial resources remaining after consumption, will be used to build up either financial or non-financial assets.

Savings increased or reduced by net capital transfers[11], will be used to finance investment (acquisition of immovable property): housing and investments by unincorporated enterprises. Savings can therefore be used, over the years, to constitute non-financial assets.

---

[10] Primary incomes are reduced by an amount equivalent to fixed capital consumption, leaving "net primary incomes".

[11] These capital transfers received and paid by households are generally small. For the sake of simplicity, we prefer not to expand on them here.
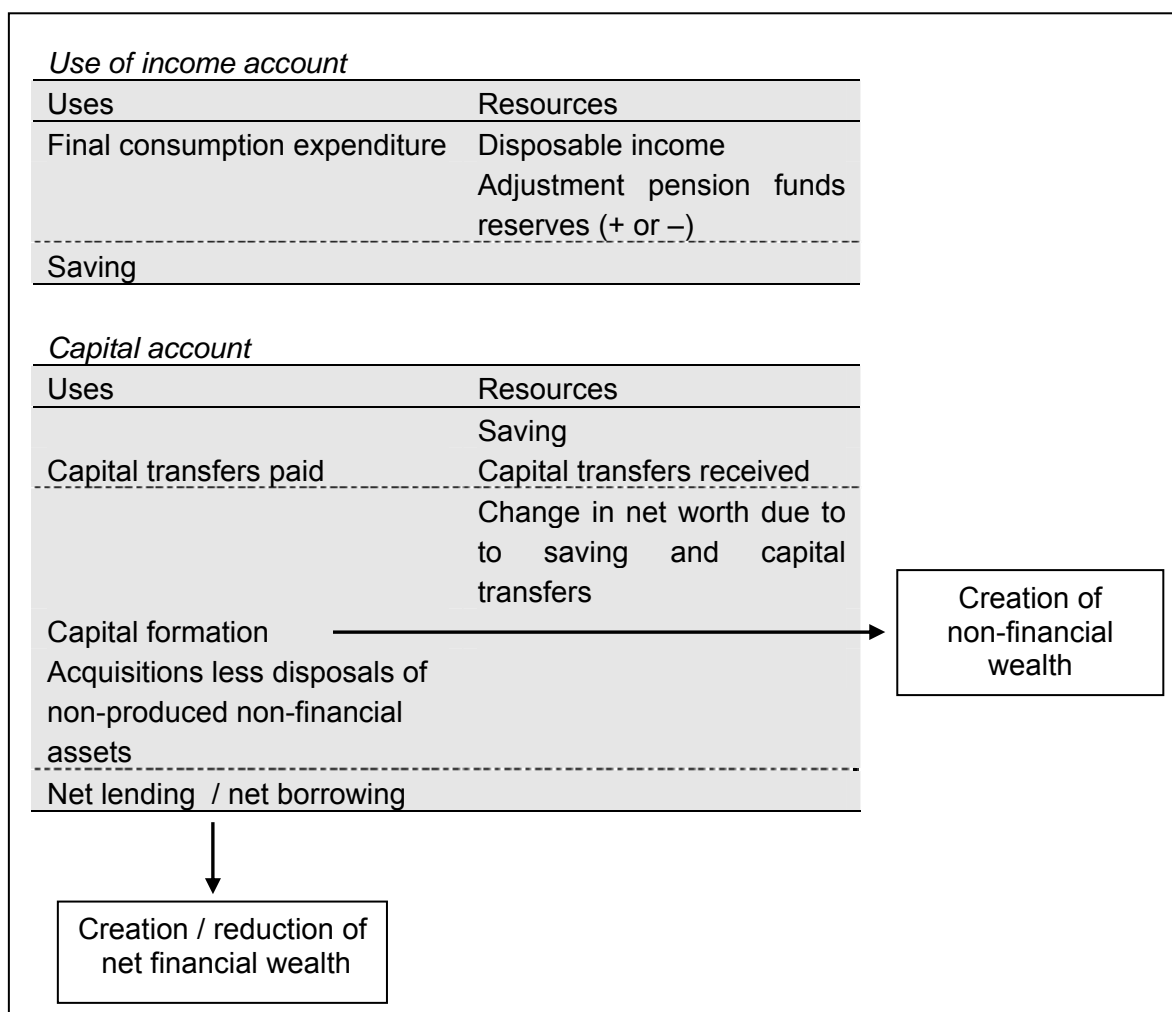
If the savings built up exceed capital formation, the surplus financial resources will be used to acquire financial assets and/or to pay off debts. There is then net financial wealth creation.

Conversely, if savings are insufficient to finance capital formation, that will have to be funded by selling financial assets or incurring debts. There is then a reduction in net financial wealth due to saving and capital transfers.

S + net capital transfers = Investments + Δnet financial assets

Schema 2

Allocation of savings and creation of non-financial and financial wealth

Use of income account

Uses	Resources
Final consumption expenditure	Disposable income
	Adjustment pension funds reserves (+ or –)
Saving	

Capital account

Uses	Resources
	Saving
Capital transfers paid	Capital transfers received
	Change in net worth due to to saving and capital transfers
Capital formation	
Acquisitions less disposals of non-produced non-financial assets	
Net lending / net borrowing	

Creation of non-financial wealth

Creation / reduction of net financial wealth

4.   Saving: only one component of the formation of households' wealth

Households build up their financial wealth and immovable assets by accumulating savings. However, saving is only one component in the formation of wealth by households. Apart from the accumulation of savings year after year (cumulative financial flows), wealth may also increase or diminish as a result of changes in the price of the constituent assets, changes which are not recorded in the current resources of households. Capital gains or losses on the dwelling of households or on the financial assets which they hold (it is mainly shares that are

affected by price fluctuations) also influence the value of their assets, and this is not taken into account in household saving.

Households' wealth can also be influenced by other operations such as destruction of assets which are not taken into account in saving.

5.   Link between saving and financial national accounts

In the national accounts, saving is therefore defined from the point of view of the non-financial accounts. Incomes, consumption, investments and other capital expenditure are assessed on the basis of a set of the most appropriate statistical sources to give an estimate of the financial position of households.

Using the financial statistics, it is possible to estimate a financial position on the basis of a set of other statistical sources that are used to assess financial assets and liabilities. The household financial balance is then defined as the difference between the change in the assets and the change in the liabilities.

Ideally, the two angles should be consistent: saving minus capital formation, after taking account of other capital transactions, should correspond to the change in the net assets of households.

In reality, however, since the two approaches are based on different statistical materials, statistical divergences are unavoidable.

Schema 3

Collect of data in the non-financial and in the financial accounts
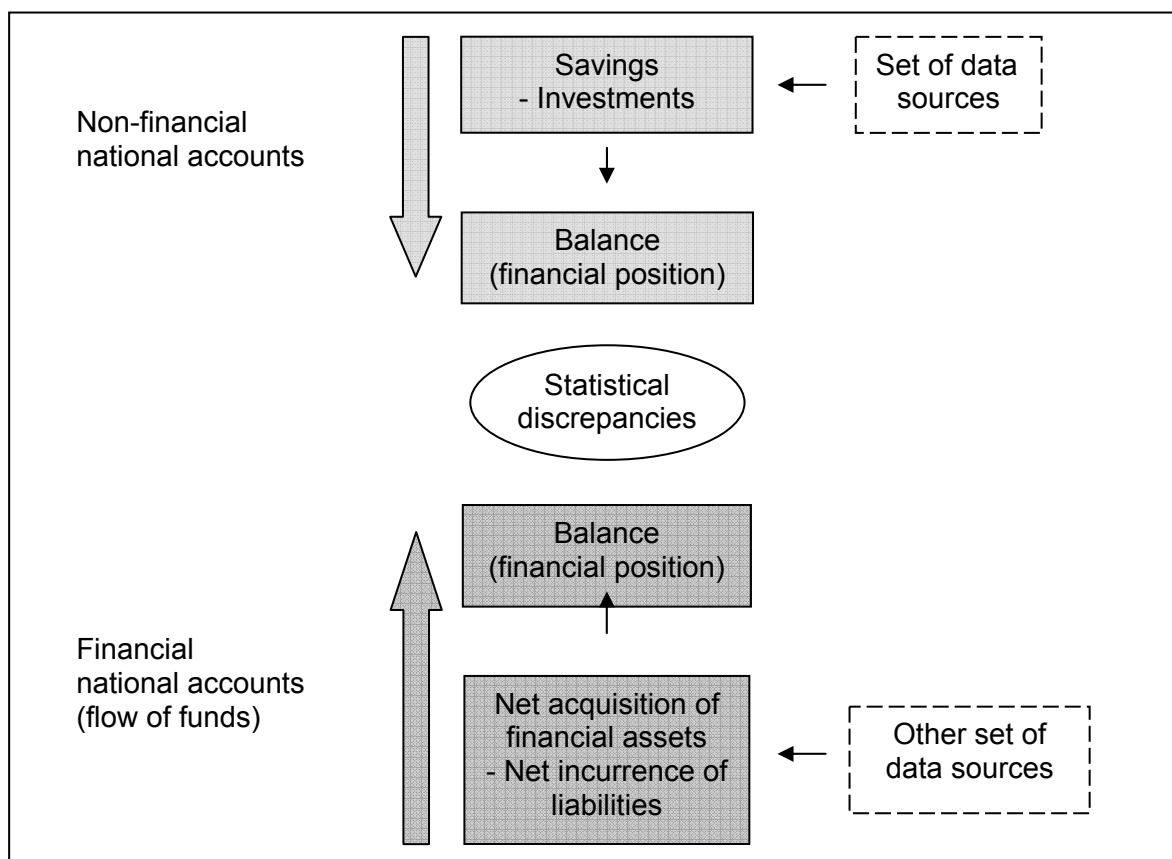
Whether to use the non-financial accounts angle or the financial accounts approach is debatable, in the light of their respective strengths and weaknesses. The weakness of the measure of saving in the non-financial national accounts is that it is calculated as a balance. The measure of saving is therefore automatically affected by errors in the estimation of incomes and consumption. Besides, saving cannot take account of capital gains or losses resulting from the change in the price of assets. These gains or losses are not regarded as income, whereas households may view them as such, particularly when deciding on their consumption behaviour (wealth effect which varies from country to country).

Nevertheless, the non-financial national accounts are useful in that they can answer questions relating to the origin of the savings: where does saving come from?; do fluctuations in saving result from an increase or decrease in incomes (and which ones), or from an increase or decrease in consumption?

Furthermore, the level of saving can be assessed by looking at disposable income, giving a definition of a saving ratio, a variable often listed by analysts, despite the occasional question mark over the comparability of the saving ratio between countries.

The financial statistics offer a more comprehensive picture of the financial wealth of households. They give details of the composition of wealth in terms of assets and liabilities (and their components) while also taking account of capital gains and losses.

However, the financial statistics are not perfect. Many countries still have difficulties in measuring household wealth, such as problems concerning the valuation of unlisted shares or compilation of information about foreign assets. In addition, the assets and liabilities of households are estimated as a balance in certain cases, with households making up a residual sector in the compilation of the information (an asset or liability is attributed to households if it cannot be attributed to any other sector).

6.   Conclusions

The non-financial national accounts and the financial national accounts complement one another. They are part of a whole for which the ESA 95 has constructed a coherent analysis framework.

The efforts to achieve convergence in the non-financial and financial statistics should most definitely be continued in order to attain the maximum possible consistency. This is an objective which the producers of statistics should pursue in the coming years. For the users, the decision on which of the two approaches to use depends on their own requirements.

The use of the statistics requires an investment on the part of analysts, who have to know the content of the aggregates and understand exactly what they include. Various definitions of the level of saving or the saving ratio are possible. Moreover, while the ESA 95 has resolved certain problems in order to facilitate the comparability of statistics between countries, it should be remembered that some institutional characteristics of the countries do have an influence on their statistics. Interpreting the data requires to know the statistical material and international comparisons must always be treated with caution.

Annex 1:
Publication of sector accounts by Eurostat

Eurostat has published for the first time in May 2006 a set of annual European accounts for institutional sectors covering the period 1999-2004. Non-financial accounts for the euro area, the EU25 and the individual Member States are now released.

The accounts for the institutional sectors follow the methodology of the European System of Accounts 1995 (ESA 95). They provide a comprehensive overview of the euro area and EU25 as single economies and allow for a wide-ranging analysis of the interactions among households, non-financial corporations, financial corporations and the government. The accounts also show interactions between these sectors in the euro area and EU25 and the rest of the world. The euro area and EU25 accounts are based on, but are not the simple sum of, the national accounts of the Member States.

The availability of annual euro area and EU25 accounts is in itself a milestone in the development of European statistics. These accounts will be followed by the regular publication of quarterly euro area and EU25 accounts from spring 2007, which will provide structural information on the European economy and give a better insight into the business cycle.

The table below show, for the year 2004, the main determinants of household saving according to the compilation of statistics made by Eurostat for the euro area.

Table
Saving of households[1] in the euro area - 2004

	Billions of euro	Percentage of gross national income
Gross primary income	5,762	74.4
Current transfers	−633	−8.2
Gross disposable income	5,129	66.2
Adjustment pension funds reserve	61	0.8
Final consumption expenditure	4,428	57.1
Gross savings	762	9.8
Gross saving ratio	**14.7%**	
Consumption of fixed capital	292	
Net savings	470	6.1
Net saving ratio	**9.6%**	

[1] Including the non-profit institutions serving households (NPISHs).

Source: Eurostat.

Annex 2

Adjustments to the standard saving ratio for institutional factors

Average 1998-2003

	AUS	AUT	BEL	CAN	CZE	DNK	FIN	FRA	DEU	GRC	ITA	JPN	KOR	MEX	NLD	NZL	NOR	PRT	SVK	ESP	SWE	CHE	GBR	USA
Gross saving ratio	9.0	12.7	15.9	8.6	9.5	4.9	7.9	15.8	16.0	10.3	15.9	15.3	16.2	10.6	15.9	-1.2	11.9	10.8	8.8	10.9	9.0	17.1	5.7	6.6
Consumption of fixed capital (in percent of gross disposable income)	8.8	4.8	5.5	4.8	5.3	8.0	7.4	5.1	6.3	6.3	6.1	7.0	5.9	2.5	5.9	3.1	5.6	6.8	4.5	6.0	3.3	6.2	4.6	4.2
Net saving ratio	0.3	8.3	11.0	4.0	4.5	-3.4	0.6	11.2	10.3	4.3	10.4	8.9	10.9	8.3	10.7	-4.4	6.7	4.2	4.5	5.3	5.9	11.6	1.1	2.5
Adjustment for individual public services	-0.1	-1.3	-2.1	-0.7	-0.8	1.0	-0.1	-2.3	-1.5	-0.4	-1.6	-1.2	-0.9	-0.7	-2.2	0.7	-1.6	-0.7	-0.6	-0.8	-1.7	-1.2	-0.2	-0.2
Adjustment for indirect taxes	0.1	2.0	2.7	0.7	1.1	-1.9	0.2	2.7	2.0	1.1	2.2	0.7	na	1.2	3.3	-1.0	2.7	1.2	1.1	na	2.1	na	0.3	0.2
Adjustment for net equity in pension funds	-10.9	-0.5	-0.1	} -3.8	-0.7	-2.5	-0.6	0.0	-0.9	0.0	-0.8	-1.8	-0.1	0.0	-7.1	-1.8	-3.5	-1.3	-0.2	-1.6	-4.1	-10.5	-1.5	-2.3
p.m. adjustment for net equity in life insurance	*1.5*	*-2.0*	*-7.3*	}	*-0.8*	*-7.6*	*-3.1*	*-6.3*	*-3.0*	*na*	*-3.9*	*0.0*	*-3.8*	*-0.5*	*-6.3*	*na*	*-0.6*	*-3.6*	*-0.7*	*-2.4*	*-4.6*	*na*	*-4.1*	*-0.8*

Source : OECD "Comparing household saving rates across oecd countries" (2005)