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Building a "household-subcategories accounting system" using French Micro and Macro statistics

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Summary

In France, there are several types of household survey, each one focusing on different aspects of household behaviours. They provide a large variety of information on wages, dwellings, property income or consumption expenditure.

At a macro-level, the National Accounts System allows economists to understand relationships between income, consumption and saving within a consistent and integrated framework. Nevertheless, information is very aggregated and National Accounts estimates may be different from surveys' results (because of the use of different definitions, for example).

In the past few years, there has been an increasing demand for better consistency between micro and macro statistics in France like in many other countries. Some information taken from household surveys is already used in National Accounts but further work can be done through a more thorough use of surveys' results by subcategories of household.

As a matter of fact, the European System of Accounts already considers the possibility of establishing national accounts by household categories. This should allow a better understanding of households' economic behaviour and a better description of social inequalities.

In this paper, a "household-subcategories accounting system" is presented using French data for 2003, focusing on income and consumption expenditure. It is based on National Accounts' framework and figures and uses different surveys to distinguish household categories (depending on the level of income, on the social status, on the age of the family's head, on the type of family).

Estimates of household-subcategories disposable income and saving rate will be produced. The paper includes discussion on the methodologies used to link various surveys and to ensure consistency between social statistics and National Accounts (how to get homogeneous definitions and fields).

This paper reflects only the views of its authors but not necessarily the ones of their Institute

1 Object of the study

This paper presents a detailed analysis of household account as defined in NA, breaking it down by household categories through the use of household surveys

1.1 Disposable income and consumption expenditure by household categories in 2003

A household subcategories accounting system is built for 2003[1], from production to saving.

Disposable income and consumption expenditure will be examined for different categories of households :

- Disposable income is what is left from the households income to be consumed or saved, once taxes and social contributions have been deducted. It includes the compensation of employees (wages and salaries, social contributions), the income of self-employed workers, property income other than capital gains (dividends, interests and rents), and other social transfers (of which unemployment benefits, old-age pensions, family allowances).
  Four main taxes are taken into consideration : the income tax, the housing tax, "CSG" (generalized social contribution) and "CRDS" (contribution to the reduction of social debt).

The different lines of the household account concerned by this study are :

Table 1.1 - lines of household national account studied

Lines of household account	**Code**
Primary income for own-account workers	B5 (S14A)
Operating surplus and mixed income for households (other than own-account workers)	B2+B3 (S14B)
Wages and salaries (in cash and in kind)	D11-R (resources)
Employers' social contributions	D12-R
Interest (resources)	D41-R (resources)
Interest (uses)	D41-U (uses)
Distributed income of corporations	D42
Property income distributed to insurance policy holders	D44
Rents on land and sub-soil assets	D45-S (balance=R-U=resources-uses)
Primary income	**B5**
Taxes on income and other current taxes	D5
Social contributions	D61
Social benefits other than social transfers in kind	D62
Net non-life insurance premiums	D71
Non-life insurance claims	D72
Miscellaneous current transfers	D75-S
Gross disposable income	**B6**

- Final consumption expenditure is what households are directly paying for. It includes for instance the part of health, education and housing expenditures that is still incurred by households once public social expenditure have been taken into account. What the welfare system takes care of (housing benefits, national insurance refunds) is not included in households' final consumption expenditure. Some specific elements are added to the effective payments made by the households in order to record what they

[1] 2003 has been chosen as a reference because most of the household surveys which were necessary to the project had been held during that year.

consume from their own production. For instance, it is assumed that owner-occupiers produce a housing service for themselves, which will be taken into account both as part of their production with imputed rents and of their consumption.

Twelve types of consumption expenditures will be studied (using two-digits classification):

Table 1.2 - Types of consumption expenditure studied

Type of expenditure	**Code**
Alimentary goods and non-alcoholic beverages	01
Alcoholic beverages and tobacoo	02
Clothes and shoes	03
Housing, water, gas, electricity and other combustibles	04
Furniture, usual care of the housing	05
Health	06
Transportation	07
Communication	08
Leisure and culture	09
Education	10
Hotels, bars and restaurants	11
Other goods and services	12
Final consumption expenditure	**P31**

Once disposable incomes and consumption expenditures are measured for each households subcategory, it is possible to make an estimation of saving rates by households subcategories. Saving rates will be calculated as the ratio between the whole households' savings (the difference between disposable income and final consumption expenditure) and the total disposable income.

The households are classified into subcategories according to four criteria: income level, social status, age and family structure .

One objective of the project is to analyse disposable income, consumption expenditures and saving rates of the households according to their level of income. Households will be divided into five equal groups of income per head, each one representing 20 % of the whole population, on an increasing scale. The resources taken into account so as to estimate the level of income rely on the definition of disposable income used in national accounts. An equivalent income per head is calculated with this disposable income by using an equivalence scale. In fact, the needs of a household grow with each additional member but not proportionally considering the economies of scale due to shared forms of consumption –. For instance, the need for housing space, electricity, etc. will not be twice as high for a couple as for a single person. With the help of an equivalence scale each household is assigned a value in proportion to its structural needs. The factors taken into account to assign these values are the size of the household and the age of its members (whether they are adults or children)[2].

Disposable income, consumption expenditures and saving rates will also be studied according to the social category of the head of the households, using the French socio-economic classification[3]. Thirteen status categories are defined, including active people (farmers, other self-employed workers, middle and upper executive workers, white or blue collar workers) and pensioners (former farmers, former self-employed workers and so on), plus other inactive persons. A fourteen positions typology can also be employed, which splits self-employed workers other than farmers into two groups with different income levels: shop owners and craftsmen on one hand, and entrepreneurs or professional people on the other hand.

Households will also be classified according to the head of the household's age: under 30, between 30 and 39, between 40 and 49, between 50 and 59, between 60 and 69 and 70 or more.

[2] The equivalence scale used here is the "OECD-modified equivalence scale". This scale assigns a value of 1 to the household head, of 0.5 to each additional adult member (aged 14 or more) and of 0.3 to each child (under 14).

[3] The French socio-economic classification is an occupationally based classification which covers the whole adult population. The information used is the occupation (or former occupation for pensioners), the position in the hierarchy scale and details of employment status (e.g whether employee or self-employed).

Disposable income, consumption expenditures and saving rates will also be analysed according to the structure of the households: single persons, one-head families, couples without children, couples with one child, couples with two children, couples with three children or more[4].

1.2 Three main households surveys are used

Households surveys are based on samples of the population. They enable researchers to study situation or behaviour discrepancies between different categories of households.

In order to build an household subcategories accounting system for 2003, two kinds of elements are needed: information on income distribution among the households on one hand and information on their consumption expenditures on the other hand.

Two surveys on households'incomes can be used :

- Tax Income survey (*enquête Revenus fiscaux* or ERF) for 2003, which is based on the Labour force survey data (sample of last quarter of 2003), completed with administrative data on tax income (which are based on incomes received in 2003). This is the reference survey with which individual incomes are measured in France ;
- Statistics on income and living conditions (SILC) for 2004 (which are based on incomes received in 2003), a European project. As far as French data are concerned, incomes are currently collected through households' statements[5].

The French national institute of statistics' (Insee) survey on households' budget (SHB) for 2006 can be used, which describes very precisely the households' expenditures, their amount and their nature.

Thus several surveys are to be used to get the whole household account broken down into subcategories[6]. In order to keep on working in a coherent framework, all these surveys should contain the data which are necessary to create households' subcategories. Besides, households should be classified the same way in every one of them. An identical household who would be part of the samples of all the surveys should be classified in the same subcategories in all of them.

Age, social category and family structure are part of the basic information asked in every survey. Moreover, the way they are gathered and created is identical in all the surveys of Insee.

Incomes raise more questions. In SILC or in the SHB, amounts of income are given by the households themselves. Questions on incomes are more detailed in SILC than in the SHB. In the Tax income survey, figures for income originate from tax returns, which provide an "administrative" assessment of income. This measurement method has both pros and cons. It does not depend on people's statements but on a controlled external source. Nevertheless, using tax data implies that tax laws intermingle with the measurement of income. Some components of income, taken into account in the National accounts, cannot be measured with the survey because they are free of tax.
The distribution of the main components of income (wages, pensions) from SILC data are usually compared to the Tax income survey data, used as a benchmark.

As a conclusion, there is not a common measure of income in the considered surveys. Besides, it is not easy to find suitable data in every one of them so as to work with a concept of income as close as possible to the disposable income definition in the National accounts.

[4] Other cases (known as "complex households", representing approximately 700 000 households i. e. 2.9% of the population) have been scattered within the other categories according to the total number of persons into the household and to the number of children.

[5] Incomes will in next survey be collected from tax returns, starting from the 2008 survey.

[6] In France, several types of household survey exist, each focusing on different aspects of household behaviours. In addition to SILC, ERF and BDF, two more surveys will be used later as variants: the Housing survey and the Health survey, in order to estimate more precisely the households' housing production and consumption, as well as their health expenditures.

A two-steps process has been implemented in order to obtain a homogeneous typology of households based on income level in all the surveys. First, a reference survey has been chosen, with which we create a "national accounts-like disposable income". Then this specific measure of income is implanted in the other surveys (see the box below for further details).

Box 1.1 - How to create a homogeneous equivalent disposable income per head typology in all the surveys ?

SILC data provide most information needed to get an approximate disposable income based on the concepts of the National accounts. This survey has thus been chosen as a reference. A "national accounts-like disposable income" has been created using SILC data.
To do so, some elements have been added to those commonly taken into account to study income inequalities and poverty rates with this source, i.e. wages, pensions and social transfers. Salaries in kind, for instance, can be found in SILC data but are not usually used to estimate individual income, as long as consumption of one's own production. Those elements have been included in the "national accounts-like disposable income" measure.
Other components of gross disposable income are either not well collected, like dividends and interests, or not collected at all, like interests payed for consumer credits, tax evasion, illegal work. Assumptions made to estimate the amount of those components are described in part 2.2.
All the components of this "national accounts-like disposable income" have been readjusted in order to reach the amounts given by National accounts in 2003. This readjustment should help having the households classified homogeneously, regardless of the quality of income data in the different surveys[7].

In order to get similar "national accounts-like disposable incomes" in every survey, an econometric equation has been estimated using SILC data. Let *RDB* be the national accounts-like income, the model is: $\log(RDB) = X\beta + \varepsilon$, where ε cumulative function is $N(0,\sigma^2)$ and *X* are the explanatory variables, i.e. the household's position on the income scale, the family structure, the housing status (tenant, homeowner) and the head of the household's social category. Those variables are available in all the surveys. The position on the income scale is based upon an estimation of income drawn from survey's data only. It sums up wages, self-employed incomes, unemployment benefits, health benefits, old-age pensions, pensions for disabled, social transfers (family allowances, housing and other social benefits) and wealth incomes (dividends, interests and rents).

This equation explains a great deal of log(*RDB*) variance: R^2=83%, owing to the presence of the household's position on the income scale among the explanatory variables. So that identical households (that is to say with the same social category, housing status, position on the income scale an family structure) may have the same disposable income[8], the so-called predictable value of the model is used to estimate "national accounts-like disposable incomes". This value can be calculated as E(*RDB*)= $e^{X\beta}.e^{\frac{\sigma^2}{2}}$, where σ is the standard deviation of the residuals of the model. This formula gives the same value for identical sets of explanatory variables *X*.

That estimated "national accounts-like disposable income" is then turned into an equivalent disposable income per head using the OECD-modified equivalence scale. Five groups of increasing income per head households are created, each one standing for 20% of the population.
Besides, even if similar households (same characteristics) have approximately the same equivalent disposable income per head in every survey, they may not eventually belong to the same income group. Each survey relies on a different sample and different sets of weights are calculated in each one to produce a representative image of the whole population. Once equivalent disposable incomes per head are estimated, percentiles are calculated in each survey so as to always obtain five equal groups of households. This calculation depends on the kind of sample on which the survey relies.
In fact, the structure of the five final income groups according to the social category, the age or the family structure of households differ from one survey to another.

[7] Assume that wages data quality is good in all the surveys, and wages amount is close to national accounts, whereas wealth incomes are particularly underestimated. Wages will have a greater impact on the level of income and therefore on how people are classified. Once all types of income are readjusted, wealth incomes can have an impact on households'position as well as wages.

[8] Some minor adjustments of the model have been made for some surveys, in order to match the data (change in some modalities of the explanatory variables for Tax Income survey - ERF - and Health survey).

1.3 A restricted field: ordinary households living in mainland France

National accounts gather data for the whole French population, including people living in overseas "*départements*" and non-ordinary households.
On the contrary, most households surveys held by the French national institute of statistics take place in mainland France. Besides, their target is the sole ordinary households, i.e. people living in their own dwelling, whether it belongs to them or not, *instead of* people living in a collective housing. Thus, people living in rest-homes, boarding schools, dormitories, religious communities or prisons do not take part in the surveys.

The household sub-categories accounting system has therefore to be limited to ordinary households living in mainland France.
In 2003, there were approximately 25 millions of households in France (600 000 in overseas *départements*) and 1.4 million people who are not part of ordinary households.

A preliminary work consists in identifying the amounts of income and consumption expenditures due to people living in overseas *départements* on the one hand and due to non-ordinary households on the other hand, among the total amounts of national accounts.

Concerning overseas *départements*, specific household accounts exist for each four of them, which enable us to substract those amounts from the global household account. Nevertheless, two main difficulties have been encountered:

- overseas *départements* accounts rely on the 1980 benchmark-year[9], whereas the global account relies on the 2000 benchmark-year. Some adjustments have been made for overseas *départements* accounts to take hold of the methodological changes implemented in the 2000 base (concerning tax evasion, for instance);
- the detailed classification of consumption expenditures is not exactly the same for each overseas *département* account, none of which being identical to the one employed for the global national account.

Concerning non-ordinary households, due to lack of information, it has been assumed that their behaviour and situation are similar to ordinary households' ones. Average incomes and average consumption expenditures, based on the surveys' data, have thus been assigned to them according to their characteristics (age, gender, social category).

[9] Within the national accounts framework, a "benchmark" is a set of concepts, classifications and methods. Each time a new benchmark is produced, statistical investigations are held. Those investigations have huge costs and cannot possibly take place every year. Levels, rates or repartitions are hence modified, as well as definitions and classifications. That new framework is then in use until a new base is produced.

The household account[10] has thus been divided into three parts.

Table 1.3 - Breakdown of household NA in three parts

		Ordinary households - mainland	**Non-ordinary households - mainland**	**4 overseas *départements***	**Whole population**
Primary income for own-account workers	B5 (S14A)	99 001	965	3 132	103 098
Operating surplus and mixed income for households (other than own-account workers)	B2+B3 (S14B)	130 854	608	2 543	134 005
Wages and salaries (in cash and in kind)	D11-R	602 864	6 090	10 971	619 925
Employers' social contributions	D12-R	220 136	1 798	3 287	225 221
Interest (resources)	D41-R	27 736	971	229	28 936
Interest (uses)	D41-E	-23 868		-396	-24 264
Distributed income of corporations	D42	47 711	764	478	48 953
Property income distributed to insurance policy holders	D44	34 043	1 188	100	35 331
Rents on land and sub-soil assets	D45-S	1 796	54	9	1 859
Primary income	**B5**	**1 140 273**	**12 438**	**20 353**	**1 173 064**
Taxes on income and other current taxes	D5	-137 717	-1 403	-1 282	-140 402
Social contributions	D61	-320 676	-2 755	-4 011	-327 442
Social benefits other than social transfers in kind	D62	295 528	11 103	4 937	311 568
Net non-life insurance premiums	D71	-21 301		-323	-21 624
Non-life insurance claims	D72	24 304		310	24 614
Miscellaneous current transfers	D75-S	13 082		-48	13 034
Gross disposable income	**B6**	**993 493**	**19 383**	**19 936**	**1 032 812**
Final Consumption expenditure	**P31**	**821 247**	**30 696**	**16 305**	**868 249**

Only the first column of the table (ordinary households living in mainland France) will form the household subcategories accounting system.

Note that the household account is in the whole paper considered without taking into account FISIM (financial intermediation services indirectly measured) consumption.

[10] Most FISIM appear in the households' final consumption expenditure (FISIM associated to deposits and to consumer credits). Other FISIM are incorporated into households' intermediate consumption because they contribute to the households'production of housing services (as regards the FISIM associated to housing loans). FISIM add 10 billions to the households' gross disposable income and consumption expenditure in 2003.

2 Disposable income by subcategories

2.1 How to get incomes by subcategories: general methodology

Surveys provide for each kind of income (each line of the household account) a global amount and its repartition among the different categories of households. Nevertheless, the total number of households and the size of each category are not exactly the same in all of them, owing to differences in samples and associated weights.
Now each category must have the same exact size for every line of the household account so as to work in a coherent framework. A unique source is then used to establish the number of households in each category : the 2003 Labour force survey, the total number of households being drawn from the 2003 housing satellite account. The methodology is described below.

Let
- R be a component of disposable income (wages, *eg*)
- $i \in [1, n]$ be the different subcategories of one particular typology (social categories or age groups *eg*)
- M_i^R be the total amount of the income R observed in the survey (SILC or ERF) for subcategory i
- $\overline{R}_i$ be the annual average R income observed in the survey (SILC or ERF) for subcategory i
- N_i^{survey} be the number of households in the subcategory i for the considered survey
- N_i be the number of households in the subcategory i in the whole population (source : 2003 Labour force survey and 2003 housing satellite account)
- M_{Cnat}^R be the total amount of the income R in national accounts, for the whole population (restrained to ordinary households living in mainland France).

The estimation has two steps:

- calculation of an approximate amount of the income R for each subcategory: $\tilde{M}_i^R = M_i^R * \frac{N_i}{N_i^{survey}} = \overline{R}_i * N_i$

- readjustment of those approximate amounts according to the total amount of the income R in national accounts: $\tilde{M}_i^{Radjusted} = \tilde{M}_i^R * \frac{M_{Cnat}^R}{\sum_{k=1}^{n} \tilde{M}_k^R}$

Given that methodology, remaining problems are linked to discrepancies between the definitions of the different components of gross disposable income in the national accounts and surveys data.
The following parts, 2.2 and 2.3, try to identify the source of those discrepancies, as regards income data. Assumptions and calculations made to fill the gaps are also detailed.
Once we get a proxy for a specific line of the account (i.e. for a specific type of income, as it is defined in the national accounts), the methodology previously described is applied : the average income in the survey is calculated for each subcategory $\overline{R}_i$, so as to obtain total amounts of income for each subcategory which are consistent with the total amounts of the national accounts (see part 2.5 for details).

2.2 Comparison of definitions for each component of disposable income

SILC provide good-quality data to approach NA definitions for mostly components of disposable income. However ERF is closer to the NA content for some lines. Table 2.1 compare NA definitions and information available in the survey which is more closer to NA. Gray lines correspond to those for which ERF is the better one.

Table 2.1 - comparison between national account and surveys for each component of disposable income

Lines	National account (NA)	Surveys (SILC or ERF)	Discrepancies between the survey chosen and NA
Own-account workers			
Primary income for farmers (B5)	Farmers net incomes ; after deducting any costs of production (intermediate consumption, taxes on production, social contributions, investments, …)	Amount declared by households - "amount taken from enterprise benefits for the household to consume and save money"	Costs of production are estimated by households No adjustements to survey's basic data to take tax evasion, VAT fraud or the underground economy into account
Primary income for other self-employed workers (B5)	Net incomes for self-employed workers (excepted farmers) ; after deducting any costs (intermediate consumption, taxes on production, social contributions, investments, …) Adjustements are made for VAT fraud, tax evasion, mis reporting of gross output and to take non-observed economy into account		
Households (other than own-account workers)			
Mixed income for households (other than own-account workers) (B3)	Output for own final use, basically in agriculture and construction	Own consumption ("gardening,stockbreeding gathering, hunting")	No information on ouput for own final use, except for agriculture field
Operating surplus For households (other than own-account workers) (B2) + Rents on land and sub-soil assets (D45-S)	Output for own final use : imputed dwellings (for homeowners, people free roomed by other households) Rents received after deducting taxes and other costs) Rents received (minus rents paid) inexchange of location of lands or sub-soil assets	Imputed dwellings only for main residence and people free roomed Net income : amount received after deducting costs of maintenance and repair, payback for loan and property taxes	No imputed dwellings for hollyday homes Costs are estimated by households No information on rents payed for lands or sub-soil assets No distinction between operating surplus and rents on land and sub-soil assets
Wages and salaries (D11)	Wages and salaries in cash include the values of any employees' social contributions, income taxes, etc….; Wages and salaries in kind consist of goods and services, or other benefits, provided free or at reduced prices by employers	Wages include the value of social contributions, CSG and CRDS Wages and salaries in kind (cars, rents, food subsidies, goods and services provided free or at reduced prices)	All employees' social contributions are not calculated ; private social insurance schemes contributions and a part of voluntary employees' social contributions are missing Wages and salaries in kind are estimated by households

Lines	National account (NA)	Surveys (SILC or ERF)	Discrepancies between the survey chosen and NA
All households			
Interest (uses) (D41-E)	Amount that the debtor becomes liable to pay to the creditor over a given period of time without reducing the amount of principal outstanding (on housing or consumption loans)	Interest paid for main housing loans	
Interest paid for main housing loans			
Interest paid for other loans		Costs of loans (interests and principal outstanding)	No distinction between interest paid and the amount of principal outstanding cut-off
Interest (resources) (D41-R)	Interest receivable on financial assets	Interest on saving accounts Imputed data	Under-estimation
Distributed income of corporations (D42)	Property income received by owners of shares Withdrawals from the income of quasi-corporations ; consist of the amounts which entrepreneurs actually withdraw for their own use from the profits earned by the quasi-corporations which belong to them	Incomes declared to the administration Annual income imputed for saving accounts constituted of shares	No information on dividends which are free of tax (they are not mentioned on the adminstrative form) Under-estimation
Property income distributed to insurance policy holders (D44)	Property income attributed to insurance policy holders corresponds to total primary incomes received from the investment of insurance technical reserves. Insurance technical reserves are invested by insurance enterprises and pension funds in financial assets or land or in buildings.	Incomes received from life insurance contracts - imputed data	Under-estimation
Taxes on income (D51)	Curent taxes on incomes (on wages, property incomes,..), CRDS, CSG,….	Income Taxes , CSG, CRDS. Taxes on property income are calculated with information reportedon the administrative form	Calculation of property incomes can be biased because some taxes are directly paid by banks so they can't be calculated with the adminstrative form The whole current taxes are not covered, especially for specific funds
Other current taxes (D59)	Taxes which are payable on the ownership of land or buildings ; special tax on fortunate people	Taxes on the ownership of main housing and special tax on fortunate people	No information on taxes payable on ownership of land or hollyday homes

Lines	National account (NA)	Surveys (SILC or ERF)	Discrepancies between the survey choosen and NA
Social contributions (D61)	Employers' actual social contributions are paid by employers to social security funds, insurance enterprises or other private funded schemes These includes contributions imputed for civil servant in exchange of wages in kind	Social contributions to social security funds, calculated	The calculation of social contributions doesn't take exemptions from contributions on low wages into account No information on social contributions to private funded schemes No contributions imputed for civil servant in exchange of wages in kind
Employers' social contributions			
Employees' social contributions	These are social contributions payable by employees to social security, private schemes		
Social contributions by self and non employed persons	These are social contributions payable for their own benefit by persons who are not employees – namely, self-employed persons (own-account workers), or non-employed persons.		
Social benefits (D62)	Unemployment benefits, old-age pensions, family allowances, … Include benefits payable to households by social security funds, insurance enterprises or other private funded schemes	Old-age pensions paid by social security funds or insurance enterprises ; family allowance, assistance for needy families, sick pay, study grant,…	No information on benefits payable to households by private funded schemes A very few part of benefits payable to households by employers is take into account
Net non-life insurance premiums (D71)	Premiums payable under policies taken out on their own initiative and for their own benefit by individual households, independently of their employers or government. Net non-life insurance premiums comprise both the actual premiums payable by policy holders to obtain insurance cover during the accounting period (premiums earned) and the premium supplements payable out of the property income attributed to insurance policy holders, after deducting the service charges of insurance enterprises arranging the insurance.	-	No information available on the survey
Non-life insurance claims (D72)	Claims due under contracts in respect of non-life insurance ; that is, the amounts which insurance enterprises are obliged to pay in settlement of injuries or damage suffered by persons or goods (including fixed capital goods).	-	No information available on the survey
Miscellaneous current transfers (D75-S)	Voluntary contributions, membership subscriptions which NPISHs receive from households ; remittances by emigrants or workers permanently settled abroad ; Fines and penalties imposed by courts of law ; Adjustements for VAT fraud, tax evasion, and mis reporting of gross output of non financial corporations	-	No information available on the survey

On household surveys, some results are based on households estimates (costs of production for own-account workers, output for own final use, wages in kind for paid workers, …). Those estimations are likely to be different from macro statistics.

Moreover, for some lines of the household accounting system we can only found an approximate correspondence :

- For example, primary incomes for self-employed workers (excepted farmers) are not adjusted for VAT fraud, tax evasion, mis reporting of gross output or non-observed economy.
- Information available on payments for consumption loans provide no distinction between the amount of interests and the amount of principal outstanding.
- Imputed dwellings exist on households surveys but not for all types of housings (no information for holidays home).

For property incomes, imputations on surveys under-estimate macro statistics so that we have to make others imputations, in a different way in order to be closer to NA figures (see § 2.3).

At last, in some cases, no information at all are available : net non-life insurance premiums, non-life insurance claims or mmiscellaneous current transfers.

Table 2.2 shows comparison for each component of disposable income.

Table 2.2 - Survey's coverage rate for each component of disposable income

Lines of household account	**National account 2003 *** (1)	**Surveys** (SILC2004 / ERF2003) (2)	**Coverage rate** (2)/(1) (%)
Primary income for own-account workers (included adjustements for fraud)	76 739	46 140	60%
Adjustement for underground economy	22 262		0%
Operating surplus and mixed income for households (other than own-account workers) + rents on land and sub-soil assets	132 650	92 364	70%
Wages and salaries (in cash and in kind)	602 864	541 992	90%
Employers' social contributions	220 136	187 029	85%
Property income**	85 622	15 869	19%
Taxes on income and other current taxes	-137 717	-113 482	82%
Social contributions	-320 676	-257 145	80%
Social benefits other than social transfers in kind	295 528	234 108	79%
Current transfers***	16 085		0%
Disposable income	**993 493**	**746 875**	75%

** : national account, ordinary households, mainland France, except FISIM*

*** : Interests, distributed income of corporations, property income distributed to insurance policy holders and rents on land and sub-soil assets constitute "property incomes"*

**** Non-life insurance (premiums and claims) and miscellaneous current transfers constitute "current transfers"*

2.3 Imputations and assumptions made to fill gaps

Because of a lack of information for some lines of the household NA (no information at all or only partial one), imputations and assumptions had to be made.

Imputations based on partial information available in surveys

- ➔ Imputed rents of owner-occupied dwellings are available in SILC only for main residence. In the NA framework, holidays home-owners also produce a housing service for themselves (for 14.4 billions of € in 2003). Taxes on those houses cost 1.2 billion of € to households according to NA figures.
  So imputed rents have been calculated for households who belong to the SILC sample for 13.2 billions of €. This amount is scattered in favour of households which own one holidays home at least. It represents 3.6 millions of households.
- ➔ No distinction between the amount of interest and the amount of principal outstanding is available in SILC for consumption loans. In order to split the amount declared by households in two parts we estimate a ratio with the total cost of loans declared in SILC (39.3 billions of € for the whole population) and the amount of interests paid by households available in NA (9.9 billions of €). Then we applied the ratio (25.2 %) to households who declared payments for consumption loans in SILC.

Imputations based on behaviour pattern

Property incomes received (interests, distributed incomes of corporations, property incomes distributed to insurance policy holders) are not directly collected in SILC. Households only declare which financial wealth group they belong to, for different types of financial assets (life-insurance contracts, bank books, shares, bonds,...). Moreover, the proportion of households who held financial assets noticed in SILC seems very low in comparison with another Insee survey witch focuses on wealth (Survey on Wealth - SW). For those two reasons we have decided to impute property incomes in SILC.

First, we observed in the SW the features of households who held financial assets (type of family, age, diploma, position in income scale, …). Then, we decided to assign (or not) an amount of financial wealth for each household of the SILC sample, in regards with his features. This methodology is applied separatly for differents types of assets (excepted for life-insurance contracts for whitch imputations didn't improve the proportion of holders).
The global amount of financial wealth obtained is lower than the one published in household wealth national account. So, we rose all imputed financial wealth amounts in the same proportion, in order to reach for the whole population the NA figure. Then we applied average return rates, which are calculated with Bank of France data, in order to simulate property incomes.

Imputations based on conventions

Adjustments are made in households accounts of NA for VAT fraud, tax evasion, defective reporting on output or to take non-observed economy into account. Conventions had been chosen to assign the global amount of those adjustments to households of the SILC sample.

For VAT fraud and defective reporting : it concerns non financial enterprises (others than farmers[11]) which deliberately under-estimate their output :

- self-employed workers (other than farmers) : operating surplus (primary incomes in consequence) is risen by 13.7 billions of € in 2003 due to adjustments ;
  This amount has been assigned in SILC sample to households in which one member at least is a self-employed workers (other than farmers) ; 1.6 million of households are concerned ;
- non financial corporations adjustments reach 19.8 billion € in 2003 (an amount include in the line D75 "Miscellaneous current transfers" in the household account). It represent money that heads of non financial corporations take from the corporation's benefits for their own use whithout declaring it to the administration.
  This amount has been assigned in SILC sample to households in which one member at least is a self-employed workers (other than farmers) and to households in which one member at least is an executive who belong to the top of the income scale.

Amounts are imputed in proportion of primary income of those households.

An adjustment is also estimated to take the non-observed economy into account. In NA, non-observed workers are assimilated to self-employed workers so the adjustment (22.8 billions of € in 2003) is included in primary income of own-account workers.
The basic part of the amount (22.3 billions of €) is assigned to paid workers who are in the lower half part of the income scale and to students in SILC sample (7.7 millions of households are concerned). The 500 millions of € left are assigned to students living in non ordinary households (about 300 000 persons).

The main consequence of those conventions is the rise of primary income for a specific category of households, the self-employed workers (except farmers). Theses conventions can be questionable (especially for non financial corporations adjustments and illegal work). Because of that, a second option had been simulated which consist on scattering the whole amount of adjustment (55.8 billions of €) on the whole population, in proportion of their primary income.

All those imputations complete the information available in SILC survey. They have been also used to build the equivalent disposable income per head typology (see box 2.1).

[11] Farmers are not concerned by those adjustments because their incomes are estimated thanks to ouptut data and not information given by farmers. Thus there is no problem of misreporting witch imply adjustment.

At this step we can compare for a second time NA figures with the modified data SILC survey and ERF.

Table 2.3 - Survey's coverage rate for each component of disposable income, after imputations

Lines of household account	National account 2003 *	Coverage rate before imputations (%)	Surveys after imputations (SILC2004 / ERF2003)	Coverage rate after imputations (%)
Primary income for own-account workers (included adjustements for fraud)	76 739	60%	59 819	78%
Adjustement for underground economy**	22 262	0%	22 258	100%
Operating surplus and mixed income for households (other than own-account workers) + rents on land and sub-soil assets	132 650	70%	105 589	81%
Wages and salaries (in cash and in kind)	602 864	90%	541 992	90%
Employers' social contributions	220 136	85%	187 029	85%
Property income	85 622	19%	51 030	60%
Taxes on income and other current taxes	-137 717	82%	-113 482	82%
Social contributions	-320 676	80%	-257 145	80%
Social benefits other than social transfers in kind	295 528	79%	234 108	79%
Current transfers	16 085	0%	22 817	142%
Revenu disponible	**993 493**	**75%**	**854 014**	**86%**

** : national account, ordinary households, mainland France, except FISIM*
*** : incomes for non-observed jobs had not been assigned to own-account workers in SILC*

Box 2.1 : How to create a homogeneous equivalent disposable income per head typology in all the surveys ? (follow)

The composition of disposable income obtained in SILC after imputations is close to the NA structure.

Table 2.4 - composition of disposable income in NA and in SILC

	National account 2003 *	*Composition of disposable income*	SILC2004 after imputations	*Composition of disposable income*
Primary income for own-account workers (included adjustements for fraud)	76 739	*7,7%*	59 819	*7,0%*
Adjustement for underground economy	22 262	*2,2%*	22 258	*2,6%*
Operating surplus and mixed income for households (other than own-account workers) + rents on land and sub-soil assets	132 650	*13,4%*	105 589	*12,3%*
Wages and salaries (in cash and in kind)	602 864	*60,7%*	541 992	*63,0%*
Employers' social contributions	220 136	*22,2%*	187 029	*21,7%*
Property income**	85 622	*8,6%*	65 103	*7,6%*
Taxes on income and other current taxes	-137 717	*-13,9%*	-121 284	*-14,1%*
Social contributions	-320 676	*-32,3%*	-257 145	*-29,9%*
Social benefits other than social transfers in kind	295 528	*29,7%*	234 108	*27,2%*
Current transfers***	16 085	*1,6%*	22 817	*2,7%*
Revenu disponible (RD)	**993 493**	*100,0%*	**860 286**	*100,0%*

** : national account, ordinary households, mainland France, except FISIM*
** Interests, distributed income of corporations, property income distributed to insurance policy holders and rents on land and sub-soil assets constitute "property incomes"*
*** Non-life insurance (premiums and claims) and miscellaneous current transfers constitute "current transfers"*

However, discrepancies still exist. So, to create the equivalent disposable income per head typology, all components have been readjusted in order to reach the amounts given by NA in 2003. For each component, all households are affected by the readjustment in the same proportion.
This readjustment improve the individual structure of disposable income for households in SILC survey.

2.4 A new line in the household national account : financial transfers between resident households

In national account, financial transfers[12] between resident households are globally neutral regarding households in its entirety. But these transfers appear if households are broken down by category.
Indeed, financials transfers are not received or paid by the same category of resident households : the disposable income is reduced for some categories and risen for others. Gifts of money mainly benefit to young people (students, young people leading off a job). Taking in account these transfers change the standard of living according to age.

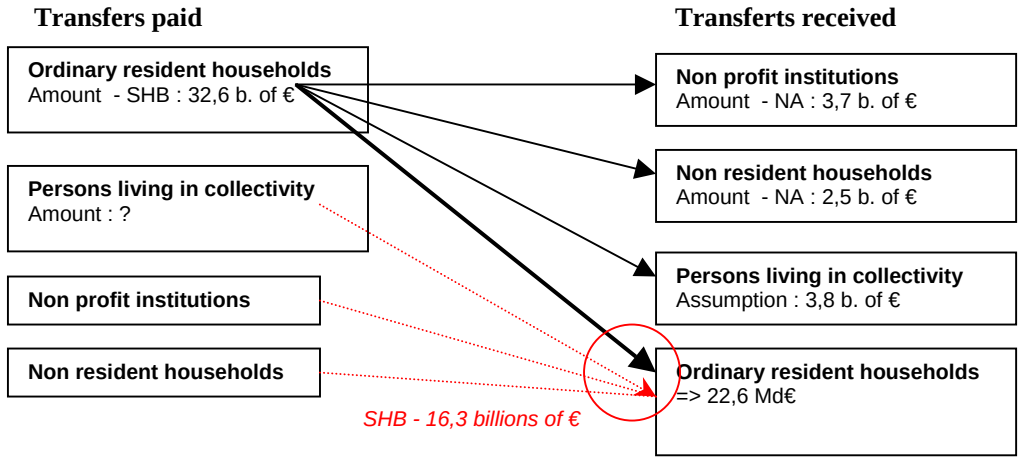
Furthermore, financial transfers are not balanced according to the different household surveys, the whole monetary gift paid by ordinary households are more important than the whole monetary gift received by them.

The French survey on household budget (SHB) allows to value transfers received or paid by category of ordinary households for 2003 ; thus, 32.6 billions of € are paid by ordinary households in favor of others ordinary households, non-ordinary households, non residents or non profit institutions.
For the two latest, national accounts assess 6,2 billions of €.
If we suppose that persons living in collectivity don't incurre financial transfers to non profit institutions or non resident households, the balance should be 26.4 billions of € received by collective households or other ordinary households. Those 6.2 billions of € are included yet in the household NA, in the line D75 "Miscellaneous current transfers". So, they must be exclude of the new line "transfers between resident households".

Among person living in collectivity, a priori only students living in university residence, young in worker house or aged people in rest-home would be liable to receive monetary gift, so about 758 000 persons (57 % of the collective household population).
We decided to limit the amount for monetary gift to 5 000 € by person living in a collective household (e.g a whole amount of 3.8 billions of €). We distributed the rest of the amount to the ordinary household (22.6 billions of €).

Therefore monetary gift between resident households decrease the disposable income of ordinary households to 4 billions of €.

Figure 2.1 – Assesment of financial transfers between resident households



[12] Gifts in kind are exclude. For example, if parents give money to their student child to pay the rent, this is a financial transfer, if the parents pay directly the rent to the owner, this is not take into account.

We considered that :

- ordinary households paid 26.4 billions of € to residents and received 22.6 billions of € ;
- persons living in collectivity received 3.8 billions of € from ordinary households and paid nothing.

The SHB distribution of financial transfers among resident households was applied to those amounts.

Table 2.5 illustrates average transfers received or paid by ordinary households according to the age of the head family.

Table 2.5 - Transfers by age

Age in years	Transfers received (€)	Transfers paid (€)	Balance (received - paid, €)
Under 30	2 605	422	2 183
30-39	1 349	521	827
40-49	921	773	148
50-59	803	1 344	-541
60-69	254	1 832	-1 578
70 or more	57	1 331	-1 273
Total	**896**	**1 046**	**-150**

3 Breaking down of households final consumption expenditures

The same methodology is used for breaking down the households final consumption expenditures as breaking down of disposable income (cf. § 2.1).

The main source of information is the 2006 survey on household budget (SHB) but for some reasons (conceptual, misunderstanding of questions by household, or under declaration) differences appear between results of survey and national accounts.

3.1 A preliminary work on national account data

The type of expenditure used in SHB is sometimes different of the one which is used for national account. For example, camper-vans are classified with transport in national accounts but with recreation activities for SHB. A first step consist to present NA consumption expenditures data in SHB classification.

The second step consist to limit the data field to the resident households, product by product. In NA, all the final consumption is accounted for residents and non residents and a global correction is made through the territorial correction to keep only the resident consumption. For that purpose, the tourism account data is used.

At least, as mentioned before corrections are made to restrain the data to mainland France i.e. without overseas *départements* and people living in collective households (cf. § 1.3).

Table 3.1 - Revisions on households' consumption expenditures (except FISIM)

Type of expenditure SHB

Amount in B€

	Type of expenditure	France mainland	Territorial balance France	Overseas Départements (revised TB)	Collective household	TOTAL revised	Part of revisions made
01	Alimentary goods and non-alcoholic beverages	128 259	-606	2 859	3 332	121 463	5,3%
02	Alcoholic beverages and tobacoo	29 378	-285	670	804	27 618	6,0%
03	Clothes and shoes	43 562	-132	767	2 105	40 559	6,9%
04	Housing, water, gas, electricity and other combustibles	208 995	-508	3 954	1 838	202 696	3,0%
05	Furniture, usual care of the housing	51 089	0	1 010	1 254	48 825	4,4%
06	Health	29 200	-132	674	1 382	27 012	7,5%
07	Transportation	128 301	-3 237	2 465	3 071	119 528	6,8%
08	Communication	24 380	0	511	848	23 021	5,6%
09	Leisure and culture	82 031	-980	1 394	2 319	77 338	5,7%
10	Education	5 730	0	72	165	5 493	4,1%
11	Hotels, bars and restaurants	56 086	-5 424	761	1 414	48 487	13,5%
12	Other goods and services	92 870	-330	1 168	12 165	79 207	14,7%
	Territorial balance (TB)	*-11 634*					
	Final consumption expenditure	**868 249**		**16 305**	**30 696**	**821 247**	**5,4%**

3.2 Changes in SHB data

In SHB, some consumption expenditures can be still different from those of NA after the correction mentioned above.

Table 3.2 - Comparison between NA and SHB

Amount, in B€		**National Accounts 2003***	*Budget ratios***	**SHB 2006**	*Budget ratios***	**Coverage rate (en %)**
01	Alimentary goods and non-alcoholic beverages	121 463	*14,8%*	103 748	*15,1%*	85%
02	Alcoholic beverages and tobacoo	27 618	*3,4%*	17 527	*2,5%*	63%
03	Clothes and shoes	40 559	*4,9%*	52 922	*7,7%*	130%
04	Housing, water, gas, electricity and other combustibles	202 696	*24,7%*	107 112	*15,6%*	53%
05	Furniture, usual care of the housing	48 825	*5,9%*	49 053	*7,1%*	100%
06	Health	27 012	*3,3%*	24 451	*3,6%*	91%
07	Transportation	119 528	*14,6%*	105 713	*15,4%*	88%
08	Communication	23 021	*2,8%*	24 672	*3,6%*	107%
09	Leisure and culture	77 338	*9,4%*	77 754	*11,3%*	101%
10	Education	5 493	*0,7%*	4 699	*0,7%*	86%
11	Hotels, bars and restaurants	48 487	*5,9%*	36 639	*5,3%*	76%
12	Other goods and services	79 207	*9,6%*	83 237	*12,1%*	105%
	Final consumption expenditure	**821 247**	***100,0%***	**687 527**	***100,0%***	**84%**

** : national accounts, ordinary households, mainland France, except FISIM*

*** : in the final consumption expenditure (in %)*

These discrepancies could be explained by time lag or conceptual differences which will be corrected. With an adjusted margin procedure, the SHB data were fitted on the socio demographic data of 2003 in case that changes in demographic structure involve changes in consumption. But, the assessment is that for a same category of household, consumption expenditures are remained quite stable between 2003 and 2006.

The adjusted margin procedure has been done with the number of household of the Housing Satellite account and with social characteristics (head of household's socio-economic and age groups, occupancy status for dwelling - owner or tenant -, family status - single persons, one-head families, couples without children, couples with one child, couples with two children, couples with three children or more -, geographic area residence). The 2003 Labor Force survey is used for the distribution of households according to these criterions.

Furthermore, concepts could be more linked between surveys and national accounts' data and some examples could illustrate :

- Some consumption expenditures in NA are not considered as expenditures in SHB

Imputed rents of owner-occupied dwellings are consumption for NA. So imputed rents have been calculated for holiday homes (which are not calculated in SHB) and imputed rents available in the survey for main residence are included in the consumption expenditure.

- Some types of expenditures do not have the same definition in SHB and NA

Purchases of motorcars between households are not taken into accounts in NA but are mentioned in SHB. Moreover, only the trade margin is accounted when the sailor is a car dealer (35 % of the total amount)whereas the whole amount is considered as expenditure in SHB

Dwellings rent is the real expense of the tenant in SHB. Dwelling allowances are not taking into account; they are deducted in NA final consumption expenditure

For the usual care of housing, the total amount in NA is higher than in SHB. The division between usual care and GFCF is difficult to determine in SHB. The Housing survey is more detailled on these questions and is used for that purpose.

Package travel are divided in NA between transport, accommodation, food…In SHB the amount of the whole package is mentionned by households ;

- Some items of SHB do not exist in NA and are imputed in the nearest category

For example, "Others nourishment's expenditures" are divided between "food" (92 %) and "non alcoholic beverage".

Table 3.3 shows the remaining discrepancies after those corrections :

Table 3.3 - Comparison between NA and SHB, after SHB's revisions

Type of expenditure SHB

Amount, in B€		**National Accounts***	**SHB after revisions**	**Coverage rate** (en %)	**Discrepancy** (pts)
01	Alimentary goods and non-alcoholic beverages	121 463	110 296	91%	-1,4
02	Alcoholic beverages and tobacoo	27 618	17 873	65%	-1,2
03	Clothes and shoes	40 559	52 961	131%	1,5
04	Housing, water, gas, electricity and other combustibles	202 696	213 268	105%	1,3
05	Furniture, usual care of the housing	48 825	48 406	99%	-0,1
06	Health	27 012	23 866	88%	-0,4
07	Transportation	119 528	92 982	78%	-3,2
08	Communication	23 021	24 789	108%	0,2
09	Leisure and culture	77 338	51 998	67%	-3,1
10	Education	5 493	4 733	86%	-0,1
11	Hotels, bars and restaurants	48 487	53 414	110%	0,6
12	Other goods and services	79 207	80 969	102%	0,2
	Final consumption expenditure	**821 247**	**775 555**	**94%**	**-5,6**

** : national accounts, ordinary households, mainland France, except FISIM*

The total consumption expenditure remains under-estimate in the survey by 5,6 % : some items like alcoholic beverages, tobacco, leisure and culture are still under-estimate ; clothes and shoes are over-estimate.

Thereafter, the assessment is made that this gap is quite insignificant for the study of distribution of expenditures by household subgroups.

APPENDIX 1 - survey's sample size

Sample size

	SRCV2004	ERF2003	BDF'2003'
Number of households	**10 273**	**35 260**	**10 198**

Structure of household

	SRCV2004	ERF2003	BDF'2003'
Single person	3 040	10 586	2696
One-head family	806	2 868	907
Couple without children	2 897	10 634	3035
Couple with one child	1 284	4 475	1341
Couple with two children	1 470	4 374	1463
Couple with three children or more	776	2 323	756

Head of the household's age

	SRCV2004	ERF2003	BDF'2003'
Under 30	1 124	3 478	1184
From 30 to 39	1 980	6 261	2040
From 40 to 49	2 073	6 679	2094
From 50 to 59	1 969	6 655	2019
From 60 to 69	1 308	4 665	1272
70 or more	1 819	7 522	1589

Social category of the head of household

	SRCV2004	ERF2003	BDF'2003'
Farmers	169	519	186
Shop owners, craftsmen	308	1286	353
Entrepreneurs or professionnal people	176	538	121
Upper executive workers	1 148	3175	1254
Middle executive workers	1 594	4882	1713
White collar	1 425	3662	1478
Blue collar	1746	6282	1698
Former farmers	269	910	225
Former "other self-employed persons"	312	1220	294
Former upper executive workers	403	1240	432
Former middle executive workers	609	2033	568
Former white collar	678	2439	665
Former blue collar	887	3554	753
Other inactive persons	509	3507	458
Unknown	*40*	*13*	

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