

# SATELLITE ACCOUNTS: A RELEVANT FRAMEWORK FOR ANALYSIS IN SOCIAL FIELDS

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Social fields are areas of analysis in which one finds both market and non-market production and situations where indirect means of financing are used, in that expenditure is made by a third party rather than by the consumer.

The borderline between these two spheres changes with time and from one country to another, but often when a system of third party paying is in practice, the difference is hardly noticeable for the beneficiary. On the other hand, the central framework of national accounts introduces a complete dichotomy of these two situations.

In order to obviate this drawback, the national accounts have proposed two solutions. The first leads to having appear on the accounts of households only the expenditure made by them and not the figure of their consumption. Contrary to this is a second solution whereby the consumption account of households is extended to include the non-market services received directly, and a corresponding imputed income appears.

This second solution makes possible a richer analysis. However, it calls for the use of fictitious circuits and this often creates problems in the choice of a recording time. Furthermore, the number of circuits chosen has to be limited if they are to be the object of international agreement.

The French system of satellite accounts seems particularly well suited to a truly thorough description of these phenomena. In fact, the analysis is carried out from a tripartite point of view of the producer, the beneficiary and the financer (i.e. the third party who takes on the expenditure). In this system, the functional perspective based on the study of the beneficiary of the expenditure can be analysed in greater depth than in the central framework of national accounts.

Thus satellite accounts represent a complementary solution for the processing of problems inherent to these fields.

## I. THE CONTEXT OF SATELLITE ACCOUNTS

### I.1. *The General Framework*

Since the 1970s, INSEE has been developing an accounting system called satellite accounts, adapted to analysis in fields as varied as education, health, tourism, environmental management, data processing, and other fields of social concern.

The approach used is purpose-based; one looks inside all institutional units for the expenditures they make for the purpose under study. For example, one takes inventory of all expenditures undertaken as well as by government administrations or households.

The accounts are drawn up in the form of tables which measure the contributions made by all the agents in a given field, so as to determine who is responsible for the financial burden and who benefits from the contributions. Each field is analyzed not only from the perspective of the producers, but also from the viewpoint of financers and beneficiaries.

These three axes of analysis are taken into consideration in all satellite accounts. The classifications of transactions, of activities and of agents are specific and adapted to each of the fields, but at the same time they remain coherent with

each other, and may be connected to the classification of the government accounts. This coherence of definitions and classifications ensures comparability of the statistics of the field with other statistics and enables one to relate monetary flows brought into play to the economic evaluations of the whole economy.

More or less detailed and specific classifications of transactions or agents are used in order to expose the flows which interest managers, decision-makers and economists in the field. The result is that all sorts of non-monetary statistics (physical or demographic) relative to the units of observation employed in the tables already exist or will be dovetailed into the other figures little by little as the work progresses on the satellite account. They concern production factors (stocks of equipment, jobs and qualifications) as well as beneficiaries (numbers of persons and distributions according to relevant criteria). The total expenditures may be connected to diverse non-monetary indicators of results (level of education, health of the population, etc.).

Nevertheless our experiment in integrating non-monetary data remains modest. It has been limited up to now to relevant connections between monetary and non-monetary data, leading to the development of new variables, such as unit costs (cost of a student, of education, of an ill person, etc.). We may also measure the participation of all agents together for a beneficiary. But a real analysis of the beneficiaries requires examination of their distribution according to relevant criteria (socio-professional categories, age, sex, etc.). It is while carrying out this step that one may truly integrate social statistics derived from surveys of households.

The general structure of these accounts is especially well suited for analysis in social fields, since it is intended to supply an answer to the following three questions:

- Who is financing whom?
- Who is producing what?
- Who is benefiting from what?

The principal aggregate of the account is expenditures for the field or expenditures of the financers. The expenditures of the financers constitute the total resources of the producers<sup>1</sup> and the analysis of output therefore is perfectly connected to the analysis of the financing. The contribution to the field measured by the aggregate of expenditures for the field is then broken down by beneficiary to constitute the third pole of analysis of the satellite accounts program. In the case of multiple financing, one must distinguish between the final financer and the initial financer in order to pinpoint transfers between financers. The final financer is the one who sends payments to the producers. The initial financer is the one who bears the charges.

## *1.2. The Example of the Education Accounts*

These tables have been systematically established for the Education Satellite Account. They may be examined in Tables I-IV. Table I shows expenditures for the field according to the financer; that is, the financing of the producers, while Table IV breaks these expenditures down by activity.

<sup>1</sup>To simplify this explanation we will introduce the secondary concept of allied goods and services later on.

**TABLE I**  
**EXPENDITURES FOR THE FIELD FINANCING OF THE SECTOR OF PRODUCTION**  
**Total Expenditures (current and in capital) of Final Financers**

Metropolitan France

Millions of Francs, 1980

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Final Financers	Producers					Public Teaching Establishments					Private Establishments Financed Mainly by the Government								
	First Degree	Second Degree	Higher	Other Educational Establishments	Other Establishments	Total	First Degree	Second Degree	Other Educational Establishments	Other Establishments	Total	Establishments Managed by Consular Agencies	Training Centers Inside Public or Private Administrations	Training Centers Inside Enterprises	Other Private Producers	Total Teaching Producers	Government Administrations (Local and Central)	Miscellaneous Non-Teaching Public Establishments	Total General
Ministry of Education	18,716	39,032	10,086	462	316	68,612	3,170	6,695	138	32	10,035	259	49	422	—	79,377	2,385	1,562	83,324
Budget of the Ministry	3,477	4,974	1,218	46	33	9,748	—	—	—	—	—	—	3	32	—	9,783	288	57	10,128
Social Costs Attached	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	22,193	44,006	11,304	508	349	78,360	3,170	6,695	138	32	10,035	259	52	454	—	89,160	2,673	1,619	93,452
Other Ministries	54	3,154	1,448	615	45	5,316	—	421	132	1,807	2,360	117	5,836	450	562	14,641	754	8	15,403
Total Central Government	22,247	47,160	12,752	1,123	394	83,676	3,170	7,116	270	1,839	12,395	376	5,888	904	562	103,801	3,427	1,627	108,855
Local Authorities	19,078	3,244	281	1,175	99	23,877	941	100	—	—	1,041	9	—	4	—	24,931	395	16	25,342
Other Public Institutions	—	—	12	2	—	14	—	104	—	—	104	498	—	—	—	616	17	51	684
Total Public Institutions	41,315	50,404	13,045	2,300	493	107,567	4,111	7,320	270	1,839	13,540	883	5,888	908	562	129,348	3,839	1,694	134,881
Enterprises	66	932	599	56	41	1,694	—	457	256	71	784	555	—	3,250	2,508	8,791	—	77	8,868
Households	1,522	3,889	561	81	54	6,107	1,240	2,304	104	6	3,654	170	—	20	4,260	14,211	—	723	14,934
Total	42,913	55,225	14,205	2,437	588	115,368	5,351	10,081	630	1,916	17,978	1,608	5,888	4,178	7,330	152,350	3,839	2,494	158,683

In Table I we see, for example, the financing of “secondary schools” (junior and senior high schools up to eleventh grade). Most of these establishments are public, or private establishments having signed a contract of association with the Ministry of Education (same school programs, etc.). The Ministry of Education pays the salaries of the teaching staffs of both types of establishments, while the establishments themselves pay their operating expenses. The resources of these establishments come from local authorities, companies (obligatory payments in the name of apprenticeship taxes), and from households. The contributions from these latter two sources are proportionally much greater for private establishments than for public ones. The central framework divides the analysis of this production into two units (government, establishments) belonging to two distinct institutional sub-sectors, while the satellite accounts bring together all the flows pertaining to “second degree” establishments and enables us (Table II) to have the complete cost of the activities carried out by these establishments, distinguishing public establishments from private ones, although both are predominantly financed by the government. Then by combining the evaluations of non-monetary statistics, one may obtain the cost of a single class, or of a student’s education, by developing the analysis by activity. We may indicate flows between financers and beneficiaries as follows:

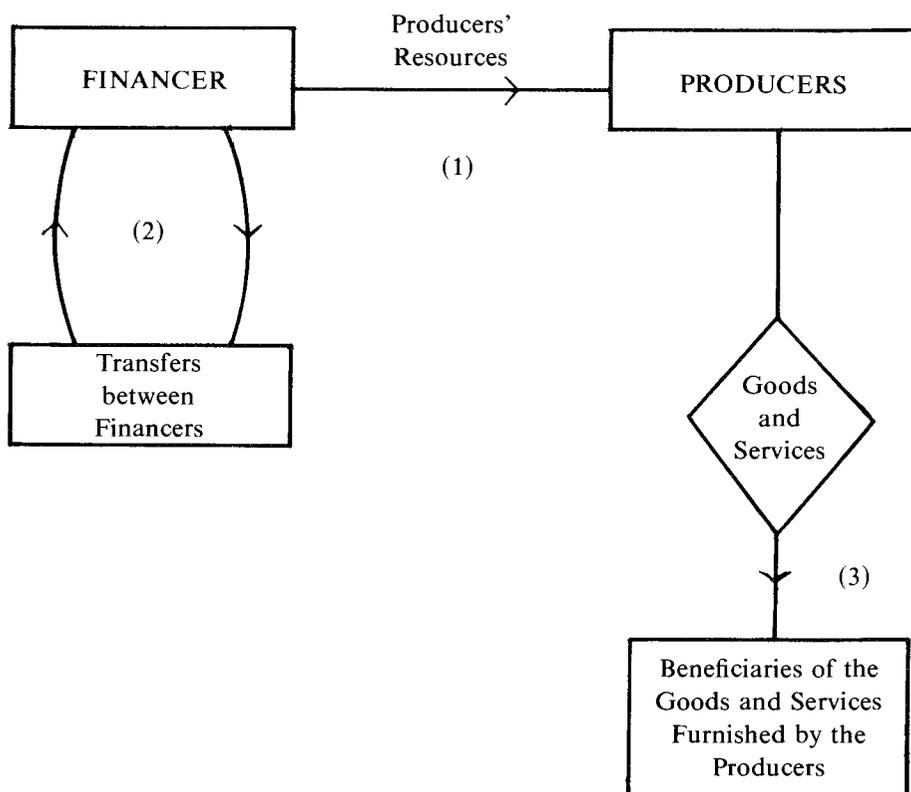


TABLE II  
TRANSFERS BETWEEN FINANCERS  
Total Expenditure (Current and Capital)

	Expenditures or Direct Subsidies (Final Financer)	Transfers Between Financers			Expenditures Remaining Undertaken by the Financer (Initial Financing)	
		Grants Paid to Households	Other Transfers Paid	Transfers Received	Million Fr	%
Ministry of Education						
Budget of the Ministry	85,575	2,186	2,064	502	89,323	52.4
Social Costs Attached	10,387	—	—	—	10,387	6.1
Total	95,962	2,186	2,064	502	99,710	58.5
Other Ministries	15,417	323	51	1,131	14,660	8.6
Total Central Government	111,379	2,509	2,115	1,633	114,370	67.1
Local Authorities	27,297	230	502	2,115	15,914	15.2
Other Public Institutions	684	—	—	—	684	0.4
Total Public Institutions	139,360	2,739	2,617	3,748	140,968	82.7
Enterprises	8,868	—	1,131	—	9,999	5.9
Households	22,139	—	—	2,739	19,400	11.4
Total	170,367	2,739	3,748	6,487	170,367	100.0

- The principal tables of monetary data established for a satellite account are:
- a table showing financers' final expenditures going to producers in the field (flow (1));
  - a table showing the value of goods or services of the field furnished to beneficiaries (flow (3)) or expenditures for the beneficiaries;
  - an account of the producers showing their receipts as the expenditures of the financers;
  - a table of transfers between financers (flow (2)).

Table II shows transfers between financers. Among these transfers we find grants given to households. In this case we see that the households who decide on their own expenditures are the final financers and receive a transfer from the administration which lightens the charges. We also find government transfers to local authorities to cover part of the expenditures for student transportation or for construction of buildings carried out by such authorities.

The producers' account maintains under "uses" a summary classification of transactions, while "resources" have been regrouped by financer. The outline of these accounts may be seen in Table III.

TABLE III  
PRODUCERS' ACCOUNTS

THE ACCOUNTS OF CURRENT TRANSACTIONS		Aggregate of Satellite Account: Expenditure						
USES	RESOURCES							
Current Expenditure of Producers <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px;">Salaries and Wages</td> <td style="width: 50%; padding: 5px;">Financing by the General Government (transfers, subsidies)</td> </tr> <tr> <td style="width: 50%; padding: 5px;">Other Operating Expenditures</td> <td style="width: 50%; padding: 5px;">Financing by Enterprises (purchases, apprenticeship taxes, 1% continuing training tax)</td> </tr> <tr> <td style="width: 50%; padding: 5px;">Saving</td> <td style="width: 50%; padding: 5px;">Financing by Households (purchases, partial charges, gifts)</td> </tr> </table>	Salaries and Wages	Financing by the General Government (transfers, subsidies)	Other Operating Expenditures	Financing by Enterprises (purchases, apprenticeship taxes, 1% continuing training tax)	Saving	Financing by Households (purchases, partial charges, gifts)		Current Expenditure for Education
Salaries and Wages	Financing by the General Government (transfers, subsidies)							
Other Operating Expenditures	Financing by Enterprises (purchases, apprenticeship taxes, 1% continuing training tax)							
Saving	Financing by Households (purchases, partial charges, gifts)							
TABLE OF FINANCING								
Capital Expenditure of Producers <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px;">Investment</td> <td style="width: 50%; padding: 5px;">Saving</td> </tr> <tr> <td style="width: 50%; padding: 5px;">Net Lending or Net Borrowing</td> <td style="width: 50%; padding: 5px;">Financing by General Government (Investment aids)</td> </tr> </table>	Investment	Saving	Net Lending or Net Borrowing	Financing by General Government (Investment aids)		Capital Expenditure for Education		
Investment	Saving							
Net Lending or Net Borrowing	Financing by General Government (Investment aids)							

TABLE IV  
EXPENDITURE FOR BENEFICIARIES  
FINANCING OF EDUCATION ACTIVITIES AND PURCHASES OF ALLIED GOODS AND SERVICES  
Total Expenditure (Current and Capital) of Final Financers

Metropolitan France		Millions of francs, 1980																	
Activities	Teaching Activities										Connected Activities		Purchase of Allied Goods and Services				Total Education Expenditure		
	Schools										General Administration	Catering and Boarding	Other	Total Teaching and Connected Activities	School Transport	Supplies, School Books		Clothing, Leisure Activities	Salaries and Wages for Education Personnel in Training
	First Degree	Second Degree	Apprenticeship	Higher	Arts Instruction	Not Broken Down (Trade School)	Extra-School	Total Teaching Activities											
Final Financers																			
Ministry of Education	22,061	40,214	525	10,835	—	—	854	74,489	2,364	5,070	1,401	83,324	444	125	—	1,682	85,575		
Budget of the Ministry	3,509	4,212	—	1,304	—	—	48	9,073	284	612	159	10,128	—	—	—	259	10,387		
Social Costs Attached	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
Total	25,570	44,426	525	12,139	—	—	902	83,562	2,648	5,682	1,560	93,452	444	125	—	1,941	95,962		
Other Ministries	103	3,995	49	2,721	263	—	6,712	13,843	754	780	26	15,403	14	—	—	—	15,417		
Total Central Government	25,673	48,421	574	14,860	263	—	7,614	97,405	3,402	6,462	1,586	108,855	458	125	—	1,941	111,379		
Local Authorities	17,826	2,809	23	284	1,161	—	99	22,202	32	2,245	363	25,342	1,955	—	—	—	27,297		
Other Public Institutions	—	152	51	236	—	—	152	591	24	25	44	684	—	—	—	—	684		
Total Public Institutions	43,499	51,382	648	15,380	1,424	—	7,865	120,198	3,458	9,232	1,993	134,881	2,413	125	—	1,941	139,360		
Enterprises	—	1,085	743	1,017	2	72	5,754	8,674	—	180	14	8,868	—	—	—	—	8,868		
Households	657	1,209	19	782	24	740	3,630	7,061	—	7,851	22	14,934	143	4,676	2,386	—	22,139		
Total General	44,146	53,676	1,410	17,179	1,450	812	17,250	135,933	3,458	17,263	2,029	158,683	2,556	4,801	2,386	1,941	170,367		

Totals identical to that of Table I

The financers' expenditure has been broken down in Table IV according to producers' activities, a given producer being able to engage in several activities. For example, we find in certain second degree establishments preparatory classes for "Grandes Ecoles" which in fact are the "higher" category of activity.

We have considered in the Education account that the financers' expenditure represents approximately the value of goods and services furnished to beneficiaries. The financers' expenditure thus seems to be precisely equal to beneficiaries' expenditure. In fact, as we will find in the case of the Health sector and its financing, differences exist between the financers' contribution for the field and the value of goods and services received and used by the beneficiaries.

It is necessary for a thorough understanding of Table IV to introduce the definition of "allied" goods and services. They are the goods and services for which we do not analyze production, but which we consider as constituting an expenditure for the field. For example, in the case of the Education sector, students' transportation, supplies, and school books fall into this category of goods and services. Therefore, in order to complete what was previously defined, the expenditure of financers is defined as the total of the flows constituting the producers' resources and the purchases of allied goods and services. The total of producers' expenditure given in Table I is equal to the total expenditure for the beneficiaries on teaching activities and connected activities exercised by the producers of the field.

### *I.3. Connection to the Central Framework*

A satellite account does not simply constitute a detail of the central framework. It is often necessary to gather flows which are scattered or hidden, but which concern the same function.

Let us take the example of the Tourism satellite account. It is used to examine hotel services and the proportion of restaurant service, of transportation or of cultural and sports services used by tourists alone. And it is also used to analyze the goods and services which are not specific to tourist consumption, but which are merely consumed in places other than usual (foods, pharmaceutical products, etc.). All these elements are shown within the same framework.

The assembling of these flows under the classification of a single function is intended for purposes completely different from the purpose of the central framework, which is quite centered on the notion of production. With the exception of products falling under the heading of final household consumption (for which there is a functional analysis), it is not possible within the central framework to assign to other commodities any other function than that of contributing to the process of production (as intermediary consumption or formation of fixed capital). Thus certain expenditures within enterprises for professional training, which appear in the Education satellite account, are counted only as enterprise production costs and thus remain hidden within the central framework.

For accounts analyzing fields wherein the flows emphasized do not constitute whole levels of central accounts classification (above all because they point out internal costs), a direct connection with the central framework is not to be sought. At most, when the products concerned constitute a large proportion of a category

of the classification of the central accounts, a certain coherence should be obtained (for example, incidental sales should be inferior to the total corresponding production evaluated in the satellite account). It is very difficult to reconcile very specific sources possessing their own very specific modalities of production with more general sources covering a large economic field such as tax sources, central government accounts, and those of local authorities.

Often the general sources permit comparability between the different sectors and different activities that they cover. The evaluations issuing from them can be used as a framework for more detailed (but often partial) data coming from specific sources. But, on the other hand, there is no interest in improving at a given moment an evaluation of the central framework with the help of research carried out on a satellite account, if it is only relative to an excessively detailed level.

Nonetheless, by requiring a more specialized knowledge of the field, the setting up of a satellite account often reveals the lacunae or problems lightly treated in the central framework that may be dealt with more thoroughly upon changing the base. One example is the obvious importance in certain fields of non-profit institutional units that in fact produce goods and market services. And these units do not appear in the tax statistics that normally cover the market sector.

Satellite accounts also have been set up in fields where most of the flows, once aggregated, appear clearly in the central framework. This is especially true of the Health accounts and the Social Protection accounts. The evaluations of these two accounts are used to directly feed the central framework, although it is impossible to find such a complete description in the central framework.

The problems of connection to the central framework appear in a more precise manner than in the case of satellite accounts related to mainly non-market fields (such as education) where very diversified activities are grouped together.

## II. THE ANALYSIS OF THE HEALTH SECTOR AND OF SOCIAL PROTECTION THROUGH THE CENTRAL AND SATELLITE ACCOUNTS

### II.1. *Problems Posed by the Central Framework*

While developing the analysis of these fields within the flexible layout of the satellite accounts, we find that the central framework does not permit us to give a completely satisfactory description of these fields.

There are several reasons for this, the main one having already been mentioned in studies by Petre, Roman and Reich. We will briefly discuss them here, examining them in relation to the four following aspects:

- the inconveniences of the market/non-market dichotomy in the analysis of social fields;
- the necessary choice between the receiver's perspective and that of the beneficiary;
- the difficulty of making a coherent choice of recording times;
- the confusion between consumption and expenditures for consumption.

(a) *Inconveniences of the Market/ Non-Market Dichotomy in the Analysis of Social Fields*

These fields are the examples par excellence of domains wherein market and non-market activities are carried out simultaneously, performing analogous services to households for an actual expenditure of similar sums on the part of the beneficiaries.

In fact, when these are market activities, there is generally a taking over of household expenditures by a system of social benefits in the form of reimbursements to households or direct payments to the producers of the services (so-called third-party paying system).

The market or non-market character attributed to these activities leads to two accounting analyses that are completely different. In the first case, output is evaluated on the basis of producers' receipts, and household consumption corresponds to the market value of the services furnished. (It especially includes the total of the third party's share of the service cost.) In the second case, wherein the activity is non-market, output is calculated as the total production costs and not on the basis of actual flows received, whereas household consumption corresponds only to their partial payment, the rest of the output being considered as having been consumed by the producer himself.

The dichotomy induced by this accounting method has important consequences, not only on household consumption, but also on their disposable income and their rate of saving. The distinction between market GDP and non-market GDP is also modified, even though the distinction between market and non-market activities is not always obvious, especially for activities in the Health and Welfare sectors. The problem is to establish the limit between a third-party system, wherein the taking over of household expenditures is total or nearly total, and a system globally or nearly globally financed by the government in the form of a transfer to producers calculated as a function of activity predictions.

These two systems of financing are generally considered interchangeable by the government. From the beneficiaries' perspective, the services performed are often similar and the actual expenditures dealt with are of comparable sums. But in fact, the central framework of national accounting, in its present form, uses two completely different analyses, conferring on the system a certain instability towards the institutional organization, all the while rendering international comparisons more difficult.

(b) *The Necessary Choice Between the Receiver's Perspective and That of the Beneficiary*

Income flows are generally recorded in the central framework between payers and receivers and the introduction of fictitious circuits remains limited. The beneficiary's perspective is therefore rarely taken into account at the present time. In any case, it is not always easy to determine who benefits from a flow paid out. In the case of the payment of a subsidy to an enterprise performing services for households, are the households the beneficiaries who can therefore acquire the service at a lower price, or is it rather the enterprise which has access, for that reason, to a wider market of consumers? The beneficiaries are often multiple, and according to the situation of the national economy, the viewpoints are

different. Who profits from aid toward recruitment? Is it the enterprise, which is thus able to reduce its own costs? Is it the unemployed person who thus has easier access to a salaried job? Or is it rather the government, which thus saves money on unemployment allocations, which are more costly than aid toward recruitment? In spite of such questions the national accounts authorize only one classification for each flow, and therefore, show only one viewpoint.

Even so, in certain cases, especially in the field of social security and welfare, it is the viewpoint of the beneficiary which is given priority, without the presence of precise rules for making such a choice. Therefore, the social benefits entered under the category of resources in the household accounts include payments undertaken for stays in health or social establishments (hospitals, old-age homes, etc.), even though these payments are made directly to the establishments by social security agencies or public administrations. Social benefits as well include cost reductions accorded to certain categories of households (large families, aged persons) when these advantages are the subject of a personalized financial compensation on the part of the social protection systems in the form of payments to the producer of the service (transportation, television, etc.). In this case, a fictitious circuit is constructed wherein households receive a flow of income which permits them to pay for the service performed at the market price. However, when the responsibility for payment of the service cost is accorded to the whole of the population (in France, this is the case from now on for public hospitalization), there is no construction of a corresponding income flow in the central framework, and one therefore again finds the problems outlined in the preceding paragraph, linked to the market/non-market dichotomy.

The definition of social benefits and the reconstruction of a fictitious circuit as described above, are, however, sufficiently harmonized within the countries of the European Community (ESA), at least within the framework of the European System of Social Protection Accounts (ESSPROS).

But other flows are likely objects of fictitious circuits and are exceptions to the inscription between payer and receiver, without this practice being harmonized between countries. Let us quote the example of the case in France, concerning the treatment of the government's undertaking of payments of social contributions normally paid by employers, in order to lighten the personnel costs in enterprises and to facilitate hiring. The government pays these allocations directly to social security institutions. However, we have interpreted this flow as a subsidy (on salaries and wages) to enterprises and not as a transfer to social security institutions.

Certain of these choices, where the perspective of the beneficiary was given priority, are sometimes largely dependent on an economic interpretation which may vary from one country to another, and within a single country according to the time period.

### *(c) The Difficulty of Making a Coherent Choice of Recording Times*

The introduction of such fictitious circuits has created difficulties in the choice of times for recording flows.

It is true that often the due date rule situates the time at different moments according to whether the beneficiary's or the financier's perspective is used,

whereas between payer and receiver it is usually possible to determine a single time corresponding to the date payment is due.

Thus, when an ill person asks to be reimbursed for drugs, the right to the reimbursement exists from the moment the drugs are purchased, while the due date of the financing agency coincides with the moment the request for reimbursement is received. It is therefore impossible to align this social benefit in kind with household consumption and at the same time observe the principle of recording it for the financer as of his own due date.

The fact of maintaining the same time leads in this case to a confusion between the sums paid by the financer and the evaluation of the consumption on the part of the beneficiary, which creates an imbalance in the household sector account.

#### *(d) The Confusion Between Consumption and Expenditure for Consumption*

For non-market services, the present national accounting framework leads to maintaining as consumption what is in fact expenditure for consumption, since non-market consumption appears in the accounts of the agent who pays for it (among the uses of the household and general government use-of-income account).

On the other hand, for market services, it is consumption that is recorded. For Health services, for example, consumption differs from consumption expenditures in that the obligation for payment is assumed by a third party or by reimbursement.

What is more, the time gaps that often exist in these cases should not lead to the assimilation of the third party or the reimbursement to the evaluation of the consumption being paid for.

It is obvious that the choice between the notions of consumption and of consumption expenditures has not yet been made clear.

In summary, we may say that the central framework of the national accounts requires, for each flow, a single choice between the perspective of the receiver and that of the beneficiary. Choosing the second perspective cannot be applied in a generalized way. In fact, designating the beneficiary is often a matter of interpretation, both in terms of nation and in terms of the period concerned. The introduction of fictitious circuits also requires a clarification of choice of recording times.

Nevertheless, in regard to the Health and Social Protection sectors, harmonized methods already exist among most countries, tending to retrace certain activities independently of national financing systems by the use of fictitious circuits. These choices have already improved international comparison; however, they have not removed the division between market and non-market activities, nor the differences in analysis which result from this division.

## *II.2. The Advantages of the Satellite Accounts Approach*

### *(a) The Satellite Accounts Describe Fields That May Overlap*

A single expenditure may be entered in several accounts, according to the purpose assigned to it. Thus, expenditures for teaching in medical schools or the

expenditures of school doctors and nurses are recorded simultaneously in the Health accounts and in the Education accounts. The measures for encouraging the hiring of certain categories of unemployed persons (youth, women, the aged), classified under subsidies to enterprises in the central framework, may be simultaneously recorded under the accounts for employment management, and under accounts for aid to enterprises. Even when the objectives are multiple, the central framework can record a flow in only one place.

*(b) The Dichotomy Between Market and Non-Market Activities Is No Longer Fundamental in the Satellite Accounts*

The analysis of these activities is similar—one examines their financing, and one establishes their production costs. The beneficiaries use goods and services made available to them in the form of market or non-market consumption.

*(c) The Satellite Accounts Describe Separately the Flows Between Payers and Receivers and the Flows of Goods and Services Used by Households*

The analysis is made according to the two perspectives and therefore avoids the confusion between the two flows. The recording of the flow between payers and receivers leads to a correct determination of receivers' saving (producers or beneficiaries). It is disconnected from the recording of consumption. We will examine the corresponding tables proposed for the Health account and show the articulation of this account with that of Social Protection.

The first account is used primarily for evaluating what beneficiaries consume, while the Social Protection account describes the financing of goods, services, and other advantages furnished to households.

### *II.3 The Satellite Accounts for the Health Sector and for Social Protection, and Their Connection to the Present Central Framework*

The satellite account for Social Protection is a rather special satellite account to the extent that the producers in the field are the financers (along with households) of the Health and Social Welfare sectors. These producers are the Social Security schemes; their activity is to manage Social Security; that is, to finance different kinds of aid to households for covering the expenses which result from the existence of certain risks.<sup>2</sup>

The expenditures on Social Protection thus include, in addition to the management expenses and other expenditures of this scheme, the financing of this aid in the form of social benefits, or "social service benefits" and of "tax benefits".

Tax benefits are exemptions and tax reductions linked to a given risk of Social Protection. The social services benefits finance the advantage constituted by the access to free or almost free services. They also include the collective payment for lowering the price of a costly service. In the latter case, they are distinguished from social benefits in the form of third party payments to the extent that they are global and not individualizable.

<sup>2</sup>These risks are health, old age, survival, maternity, family, unemployment.

More precisely, social service benefits are the financing by the social protection schemes of social service producers (Health, Social Welfare, Placement). When these services are finished by centers inside the schemes, the social service benefits are evaluated by production costs of these services minus any eventual participation by beneficiaries. However, these social services are generally performed by institutional units distinguished from the schemes themselves and classified either in the general government sector or in the enterprise sector. In this case, the social service benefits are R65 transfers or R30 subsidies to these units.

Social benefits, social service benefits, and tax benefits are paid for or procured by the Social Protection schemes whose classification follows:

- Social insurance funds scheme
- Employers' funds scheme
- Mutual companies scheme
- Government social scheme
- Private administration scheme

The schemes constitute complete institutional units such as social security agencies or mutual companies as well as part of institutional units (central government services, local government services, employers' services) to the extent that they furnish at least one of these benefits (legal or extra-legal social benefits, tax benefits, or furnishing of services virtually free of charge, etc.).

We will not treat in detail in this paper the analysis of this satellite account, analogous to the ESSPROS accounts elaborated by the countries belonging to the European Community. Here we will limit ourselves to the articulation between the satellite account for the Health and Social Protection sectors. The financers of the Health field are in fact the schemes of Social Security and households.

Our Health satellite account has been intended until now to measure primarily the consumption of health care and medical goods. The evaluation of this consumption was carried out on the basis of the financing received by the producers of services or by households without the elaboration of accounts for the sector of production. In fact, we became aware in recent years of the fact that there were gaps during certain years between hospital receipts and the production of their services, and between the consumption of drugs and the flow of reimbursements.

In the year 1984, a financing reform for public hospitals was put into application. It was no longer founded on the "sale" of days of hospitalization. Social Security agencies from then on paid a global functioning endowment. These establishments have thus become non-market and we have begun to distinguish more clearly the different notions of producers' receipts, production of non-market services and consumption of health services. These modifications in procedure have led to a clear specification of the articulation between the Health accounts, the Social Protection accounts and the central framework of the national accounts.

The following tables are proposals for our Health satellite account; they are not the ones now being elaborated. They are presented here in a simplified form. Only health care service (hospitalization and ambulatory medical care) are traced, and we suppose that they are produced by four producers—public hospitals

(non-market category), private hospitals, liberal medical care, and internal medical care centers. The last two producers are the only ones to furnish ambulatory medical care services. Lastly, only the principal financing may be traced for each producer—transfer of social security agencies for public hospitals, social benefits and the system of third-party payers for private hospitals, payment for consultations by households (reimbursed in part by the payment of social benefits). Table V shows the Expenditure of financers going to health producers. Table VI shows the Expenditure going to beneficiaries. The link between these two tables and their connection to the central framework is shown. Financing and furnishing of goods and services are no longer generally linked (as indicated by “’”).

It may be noticed in Table VI that the benefit is measured by the total market and non-market<sup>3</sup> consumption of the field’s goods and services, that is, by the individual consumption presently calculated from the central framework, augmented by global subsidies and the value of goods and services furnished without charge to households by Social Protection schemes (employers or administration, etc.). The latter expenditures are not isolated in the central framework and are counted in production costs per unit.

### III. THE ROLE OF SATELLITE ACCOUNTS IN RELATION TO A REVISION OF THE CENTRAL FRAMEWORK

#### III.1. *Possible Ways to Revise the Central Framework*

The inconveniences presented by the central framework now in use for analyzing social fields are so great that for several years they have been motivating factors for envisaging changes during the revision of the SNA.

One solution, proposed by Pêtre, gives priority to the financers’ perspective and traces the individual consumption expenditures inside the central framework. It seemingly requires adjustments in order to take into account the time lags which exist, as we have pointed out, between consumption and consumption expenditures. Thus, the advantage of the descriptions proposed below is that it leads to a precise calculation of gross disposable income excluding income assigned to the financing of consumption (social benefits in kind).

The social benefits would then be reported as consumption in the use of income account, which would show in the use column, these consumption expenditures for each sector bearing the charges, while consumption would no longer be a transaction in this account. It would be shown only in the column of goods and services in the General Table of Transactions, while the sector accounts would show the actual flows between these sectors, thus ensuring<sup>4</sup> the correct calculation of saving, because of avoiding the temporal gaps.

Supposing:

$DC$  = consumption expenditure

$C$  = consumption

$\Delta C$  = the gap between the two

<sup>3</sup>Measured as the total production costs.

<sup>4</sup>Other things being equal.

TABLE V  
EXPENDITURE GOING TO PRODUCERS IN THE FIELD

	Expenses of Financers by Financing Transaction	Non-market Hospitals	Market Hospitals	Internal Health Care Centers	Liberal Health Care	Transfers between Financers	Total	Connection to Central Framework
	Social Benefits in Kind (1)							
	Benefits in kind (reimbursement)					$x_1$	$x_1$	R64 Social benefits in kind
	Benefits in kind (third-party payer)		$x_2$				$x_2$	R64 Social benefits in kind
320	Social Service Benefits (1)							
	Transfers paid by social security agencies	$x_3$					$x_3$	R65 Current transfers within general government sectors
	Subsidies		$x_4$				$x_4$	R30 Subsidies
	Expenditures internal to social protection schemes	(2)		$x_5$			$x_5$	P30 Final consumption of non-market services
	Payments by households	(3)		$x_6$	$x_7$	$-x_1$	$x_6$ $x_7 - x_1$	Not isolated Not isolated
	Total Expenditures						0	

1 Transaction of Social Protection account.

2 This row contains for example the production costs of hospitals directly managed by a Social Security agency.

3 This row contains for example the health care services furnished without charge by the employer.

TABLE VI  
EXPENDITURE GOING TO BENEFICIARIES

Expenditure for Beneficiaries	Non-market Hospitalization	Market Hospitalization	Ambulatory Health Care	Connection to Central Framework
Expenditure of non-market producers (including non-market sectors of general government, excluding partial charges)	$y^1 = x'_3$		$y^2 = x_5$	P30 non-market consumption
Production of market services Internal non-isolated expenditures		$z^1 = x'_2$	$z^2 = x_7$ $v = x_6$	P30 market consumption Not isolated in the central framework
Indirect benefits from subsidies to market services		$w = x_4$		R30 Subsidies
Total				Individualized consumption + R30 + Internal expenditures not isolated in the central framework

With  $x'_3$  = Production costs of non-market hospitals (including fixed capital consumption) excluding partial charges,  $x_3$  = Transfers paid to non-market hospitals,  $x'_2$  = Hospitals' market production,  $x_2$  = Social benefits (third-party paying) received by hospitals,  $x_4$  = Subsidies to market hospitals,  $x_5$  = Production costs of non-market branches (Health) excluding partial charges,  $x_6$  = Production costs of health services furnished by employers or other non-isolated internal health centers,  $x_7$  = Household payments before reimbursement.

GENERAL TABLE OF TRANSACTIONS

	G & S	SS	HNM	COLL	HM	Hous.		SS	HNM	COLL	HM	Hous.	G & S
Production and operating account	×						P10 Production		×		×		
		EBE	EBE	EBE	EBE	EBE	R30 Subsidies received	EBE	EBE	EBE	×	EBE	
							<i>Operating surplus</i>						
Income account		×					R64 Social benefits in kind					×	
		×					R65 Transfers		×				
		×					R30 Subsidies paid out						
		RDB	RDB	RDB	RDB	RDB	<i>Gross disposable income</i>	RDB	RDB	RDB	RDB	RDB	
Use-of-income account		DC1					Consumption expenditures:						
		DC2					Social benefits paid by third parties				ΔC1		C1
				DC3			Reimbursements					ΔC2	C2
							Goods furnished free of charge						C3
			DC4				Non-market services furnished						C4
						DC5	Household outlays (excluding reimbursements)						C5
		E	E	E	E	E	<i>Saving</i>						

Individual consumption: C1 + C2 + C3 + C4 + C5 = Market consumption (market price) + non-market consumption of households and general government sectors for individualized services

The different types of consumption expenditures follow:

*DC 1:* social benefits in kind in the form of third-party payers (paid directly to producers)

*DC 2:* social benefits in kind in the form of reimbursements to households

*DC 3:* furnishing of goods<sup>5</sup> to households (bought by administrations or employers) free of charge

*DC 4:* furnishing of non-market services free of charge (production costs excluding partial charges)

*DC 5:* household outlays excluding reimbursements

In the following General Table of Transactions we show how to present the flows of the Health account and the Social Protection account.

In the General Government sector, we distinguish in our example the sub-sector of social security funds (SS), non-market hospitals (HNM), local authorities (COLL) which furnish drugs free of charge.

The sector of corporate and quasi-corporate enterprises includes market hospitals (HM).

The other possible adjustment would be to give priority to the beneficiaries' perspective. This would lead to calculation of household extended income and would thus permit, with the central framework, the analysis of household income redistribution independently of the form it may take in each country.

This solution offers more possibilities than the one which gives priority to financing analysis, and will be the subject of discussions soon to be held during the meeting of the "Working Party on National Agreements" of the OECD.

The approach followed is very similar to that which we have adopted for the Social Protection satellite account, in extending the notion of social benefits to that of social service benefits. Extended income would include social service benefits and the counterpart of other non-market services (like education) which are excluded from social services.

### *III.2. Satellite Accounts as the First Step in Generalizing the Beneficiary Perspective Inside the Central Framework*

The Social Protection satellite account thus appears to be the first step in the introduction into the central framework of the generalization of priority of the beneficiaries' perspective. It is concerned with extended consumption and the extended income corresponding to it, for a limited field of health activities and social welfare.

Certain conclusions may already be drawn from this experiment. The calculation of extended consumption comparable from one country to another requires the fixing of a common field of non-market services to be taken into account. If the services in question are usually categorized as individualizable, such as education, health, social welfare, and perhaps cultural and sports services, it seems quite possible, but a consensus on a common field may hide differences in evaluations.

<sup>5</sup>To the exclusion of those used in their employment (work clothes, etc.), which remain intermediate consumption.

In fact, these services performed by the general government sector are not always visible in their accounts, and certain corresponding expenditures are counted as general administration expenditures, for lack of adequate information. This situation is probably variable from one country to another. It depends especially on the fact that individualizable services are performed by institutional units which are distinct from those who perform the non-individualizable services.

An evaluation of a wider field of extended consumption will require a further development of statistical data furnished by government accounts, without which this evaluation will be greatly reduced to the advantage of collective consumption.

When these services are performed internally by other units (enterprises, mutuels or other insurance agencies), in order to be visible, the corresponding expenditures counted as unit production costs require very specific enterprise or agency sources such as analytic accounts.

The satellite accounts approach (Social Protection, Education, Health, Social Welfare, Culture, etc.) enables a field by field progression. It mobilizes specific statistical sources, or motivates their development. Production analysis may therefore lead to a refining of the analysis. Therefore we may succeed in making a nearly complete evaluation of non-market production of these services. For the same reasons, but within greater limits, we may succeed in establishing a more complete analysis of the production of market services related to each field, while the central framework only occasionally traces the residual sales.

In conclusion, satellite accounts enable us to avoid the conflicts between purposes that excessive generalization of the beneficiary principle engenders in the central framework.

It is clear that in Education we must define who uses the goods and services (for example, is continuing professional training consumed by enterprises or by households?). We may also ask whether cultural expenditures for museums function as financing for individualizable services for households or as financing for the preservation of a collective heritage. For this reason it seems preferable to carry out an extended consumption calculation only for a more restricted field of activity and to avoid attempting an excessively general purpose-based approach. Such an approach is possible with satellite accounts since the fields of analysis may overlap, and therefore we may assign several purposes to a single expenditure.

### *III.3. The Role of Satellite Accounts Within an Extended Central Framework*

The satellite account approach may be applied not only to fields in which redistribution to households takes place, but also to any field of social concern in which the purpose-based approach may have interesting results. We could imagine, for example, an employment management account bringing together activities as well as help to enterprises and measures to lower the age of retirement.

But above all, the satellite accounts could make possible the cleaning up of the central framework and a more sharply highlighted internal logic. The description of the economy which it gives us is highly centered on production analysis:

—First, production procures new goods and services whose uses are described (final consumption, FBCF, etc.);

—Secondly, production is the counterpart of primary income (compensation of employees, taxes linked to production, operating surplus), which comes out of this activity. Income after redistribution serves to procure goods and services available for final uses.

Therefore, we attempt to measure production with the help of the accounts of elementary institutional units (we may correct, for example, the figure on sales to take into account the movement of stocks), then we record the intermediate consumption of products, and not the purchases, to arrive at an evaluation of added value.

On the other hand, the time of recording chosen for distributive transactions is not fixed on an accrual basis but is rather the time payment becomes due, that is, the due date. Thus, in the use-of-income account, we may be tempted to record consumption expenditures rather than consumption, since distributive transactions are not connected to production.

All the same, this principle is not without exceptions. The SNA suggests the recording:

- of actual social contributions paid by employers at the time salaries are due to be paid (i.e. on an accrual basis), and not at the time when contributions are due;
- the reimbursement of goods and services purchased by households at the time they are bought (i.e. on an accrual basis), and not at the time when the reimbursement is due to be paid (on handing in the social security agencies' forms in France).

It is therefore not logical to record taxes linked to production on their due date. Indeed, they appear in the operating account where all transactions have been carefully connected to production (value added, wages and salaries).

Satellite accounts and intermediate accounts may permit a greater coherence in the choices made in the central framework and the conservation of a certain logic in the analysis. Different perspectives may be considered in these peripheral accounts and the central framework will no longer be the result of such a large compromise between two viewpoints.

Let us take the example of social contributions. If we decide that it is appropriate to report contributions in the central framework on an accrual basis (that is, at the time when wages and salaries are due and also at the time when the work has been completed and therefore the act of production accomplished), it is theoretically possible to report them on their due date in the Social Protection account and to establish a table connecting it with the central framework. This will enable a reconciliation of the two approaches, one centered on a production analysis, and the other on the financing of social protection and on the resources of the agencies who manage it.

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