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ON THE TREATMENT OF TAXES AND GOVERNMENT IN THE NATIONAL ACCOUNTS

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Framed in the context of the ongoing revision of the 1993 System of National Accounts (SNA), this note proposes a new presentation of the National Accounts. While it does not require new information, nor difficult calculations, it is suggested to be conceptually clearer and practically simpler. The changes concern the treatment of taxes and government in the national accounts which imply that: (i) GDP, measured at basic price, is now exactly the sum of all value added, which is split in the compensation of employees and an enlarged operating surplus; (ii) the two functions of government are clearly distinguished in a modified sequence of accounts, that is, as producing non-market services up to the allocation of primary income account, and then as redistributing the national income; and (iii) with a conventional allocation of government services and GDP broken down between market GDP and non-market GDP, households remain the only final consumer and the so called question of consumption subsidies is resolved.

1. INTRODUCTION

Starting from the question of a possible "double counting" in the GDP, this note discusses the consequences of alternative treatments of government in the national accounts. Some thoughts were stimulated by chapter 6, entitled "Difficulties around Government Activities," in Andre Vanoli's recent monograph on *A History of National Accounting* (Vanoli, 2005).[1] This chapter deals with the consistency between theoretical constructs and accounting conventions, which is at the heart of national accounts.

Apart from non-financial market sectors for which direct information on sales and prices is available, the measure of the production of the other sectors needs theoretical and practical conventions that are necessary for the results. This is true for the financial sector but also for the government sector. The government's joint activities—production of non-market services and redistribution of income—are so closely related that in the early days of national accounting it was proposed to measure government production by the amount of taxes. Vanoli recalls many debates between the founding fathers of national accounts (for example, Pigou, Stone, Hicks, Kuznets, to mention only a few) about the treatment of taxes, especially indirect taxes. Should these, and if so, which ones, be included in the definition of national income?

The fundamental point here is: What is the right valuation of the reference aggregate, a GDP "at factor costs" or a GDP "at market prices"? What are the

Note: This paper expresses only the author's view and not necessarily that of INSEE.

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[1]French original edition: *Une Histoire de la Comptabilité Nationale, La Découverte* (2002). For an extensive review of this book in this *Review*, see Ward (2006).

implications for the consistency between production, income and expenditure? And how does this affect the debate on the use of GDP versus GNP? All these related questions are still unanswered.

This paper proposes two changes concerning the treatment of taxes and government in the national accounts: firstly, to express GDP at basic prices; and secondly, to allocate collective consumption to government. Both points will be presented in turn.

2. Are We Double Counting GDP?

The 1970 benchmark of the French national accounts introduced for the first time a non-market production account for government. At that time, there were heated debates at the French national statistical institute, INSEE, about the question of "double counting": in the definition of GDP, is it correct to add a non-market value added for government to the market value added which "finances" non-market value added through the payment of taxes? Unfortunately there is no written record available about these debates. The only surviving evidence was the subsequent French practice of a breakdown of GDP in market GDP and non-market GDP—at least up to the introduction of the 1995 ESA. More recently, when the national accounts in former socialist economies changed from using the Material Product System (MPS) to the System of National Accounts (SNA), the question was raised again, as well as by informed users and perspicacious students.

Two answers may be given to the question of double counting. The first resonates the former MPS, which is that there is neither non-market production nor value added. This argument can easily be shown as irrelevant. In any kind of economy, with labor and capital allocated to the non-market sector (teachers and schools, nurses and hospitals), there is production and value added created by governments, wherever the "finance" comes from. It is difficult to argue that only teachers in private schools and nurses in private hospitals do produce and those working in government institutions do not. Whether public teachers and nurses add to the national income is a different question, but it would be a mistake to mix up the two perspectives.

The second possible answer is that double counting of market and non-market production can be avoided with a proper definition of GDP and a clear distinction between government production and income. If we agree that non-market production by the government exists, it has to be measured. In the early days of the national accounts, this measure was not based on costs, as today, but on income; that is to say for government, on taxes. More precisely, taxes paid by enterprises were deemed to represent their intermediate consumption of public non-market services and taxes paid by households accounted for the final consumption of these services. A further distinction was made by only taking into account the indirect taxes for measuring government production.

In the 1968 SNA a switch was made to a calculation of government production from the cost side, but a conceptually important breakdown of indirect taxes between taxes on products and other taxes on production (and similarly for subsidies) was introduced. Only value added tax (VAT) was treated as taxes on

products in the 1968 SNA and the 1970 ESA (European System of Accounts), but the 1993 SNA enlarged it to all net taxes on products.

With a calculation of government production from the cost side, however it is financed, the concern about "double counting" becomes irrelevant. But there is still a problem with the valuation of GDP. This aggregate is deemed to be a measure of the creation of wealth in the period under review. In the SNA, the sum of the value added and net taxes on products is supposed to be "at market price." However, this terminology refers much more to a valuation of the demand side, which may also said to be "at acquisition price." In my opinion, the relevant "market price" on the production side is the "basic price," that is, the gross receipt of the producer, without net taxes on products.[2]

There is a main conceptual difference between taxes on products and all other taxes. Taxes on products do not enter in the producer's gross receipt, as the producer is simply a collector of taxes on behalf of government. The amount of taxes is calculated as a proportion of sales, and is independent from the producer's proper income or wealth. In a symmetric manner, subsidies on products are paid in proportion to production, not to income. For instance, the fiscal legislation about VAT in France requires that the amount of VAT should appear separately on the invoices, and consequently in business accounts the turnover is measured net of VAT. This valuation of production at basic price is used in the balance of supply and uses by product in the input–output (I/O) table where net taxes are shown distinctly from production. Along with the trade and transport margins, they appear as a valuation reconciliation between production at basic prices and uses at acquisition prices, these prices on each side being the economically meaningful one. Hence the aim of this paper is not to propose a choice between "market price" versus "factor costs," which use the same price for both resources and uses; it is to have different prices for each of them.

It seems logical to have the same treatment for GDP as for individual products so that the basic balance equation reads:

$$\text{GDP (basic price)} + \text{Import} + \text{(Taxes minus subsidies on products)} = \text{Uses (acquisition price)}.$$

According to this new "GDP at basic price" (GDP_bp), government gets a part of its resources in increasing the acquisition prices for users, but this is without consequences for the measure of the wealth created by production. For instance, an increase of VAT has no influence on GDP_bp as one might expect from an economic perspective.[3]

In relation to taxes, there is another argument in favor of GDP_bp. Imagine two countries with the same total value added, but one has only a value added tax

[2]Incidentally the correct name should then be "producer price," which is misused in the present terminology as it now includes net taxes on products which are only collected by the producer and do not refer to the actual price received by the producer.

[3]The point of view here is only an accounting one (if VAT is increasing, then GDP at market price, GDP_mp, rises accordingly), and not an economic one (if VAT is increasing, then prices increase, so demand falls off and then GDP_mp slows).

TABLE 1
THREE MEASURES OF GDP ACCORDING TO MARKET PRICES AND BASIC PRICES

Supply		Demand		Income	
The three measures of GDP_mp, according to the 1993 SNA					
Σ VA: sum of VA	1,721	Final consumption	1,399	Compensation of employees	762
Net taxes on products	133	Gross capital formation	414	Gross operating surplus + Mix income	901
		Export – Import: 540 – 499	41	Net taxes on production: 133 + 58	191
GDP_mp	1,854	GDP_mp	1,854	GDP_mp	1,854
The three measures of GDP_bp, according to the proposition					
Σ VA: sum of VA	1,721	Final consumption	1,399	Compensation of employees	762
		Gross capital formation	414	Gross operating surplus + Mix income	959
		Export – Import: 540 – 499	41		
		Net taxes on products	−133		
GDP_bp	1,721	GDP_bp	1,721	GDP_bp	1,721

and the other only an income tax. With GDP_mp, the first one shows a larger GDP than the second one, which seems inconsistent.[4]

When using GDP_bp the three measures of GDP are still valid, but have a different presentation. On the production side, GDP_bp is simply the sum of all value added, the latter being the differences between production at basic prices and intermediate consumptions at acquisition prices. On the demand side, it is the sum of final use minus imports and minus net taxes on products. And on the income side, it is the sum of compensation of employees plus an enlarged gross operating surplus (see Table 1).

3. A REORGANIZED SEQUENCE OF ACCOUNTS

With the valuation of GDP_bp, the sequence of accounts needs to be reviewed. If net taxes on products (D21N = D21 – D31)[5] are removed from the Production Account, they have to be recorded elsewhere. One possibility is to combine them with the other net taxes on production and imports (D29N = D29 – D39) in the Secondary Distribution of Income Account, which then records the entire redistribution in the economy. The third measure of GDP_bp from the income side is then the sum of the compensation of employees (D1) and an enlarged operating surplus (B2). This adjustment is simply the deleted

[4]About VAT, a Danish reader has made the following remark. When there is a boom in the expenses of Danish households in cars, the collected VAT rises, and then the GDP_mp, although Denmark does not produce any car.

[5]These codes refer to D21 Taxes on products, D31 Subsidies on products, D29 Other taxes on production and imports, D39 Other subsidies on production and imports.

D29N. At this stage of the sequence of accounts, no net taxes are payable nor receivable. Operating surpluses are gross of all other net taxes on production and import, just like compensations of employees are gross of social contributions.

To be consistent with this treatment, the measure of the production of the non-market sector (the sum of costs) has to be slightly modified by excluding from the costs the other net taxes on production (D29N). Without the indirect taxes D2N appearing as resources for government in the allocation of primary income account, its primary income will be close to zero, if not negative, for most countries: that is to say, government does not add very much to the National Income. This is the same economic idea as behind the treatment of government in the MPS, but the reasoning focuses on income instead of production.

The idea of grouping all redistribution in the secondary distribution of the income account, as proposed above, can be followed including capital transfers. In the present SNA, capital transfers are distinguished from current transfers, because the latter change income while the former change wealth. However, this distinction is not very clear, as appears with the present discussions about the exact classification of holding gains taxes. In my view, capital and current transfers are first and foremost both transfers. It can be argued that, from a macroeconomic point of view, the major part of capital taxes (notably inheritance taxes, D91) and investment grants (D92) are current and should, in line with the proposition, be recorded within the redistribution account. Consequently the notion and value of savings are enlarged to include all transfers. The present definition of savings, excluding capital transfers, seems too restrictive. When the economic units adjust their saving, one should take all the transfers received, current and capital, into account. The item D8 (adjustment for pension funds) should also be recorded in the redistribution account, because its present place in the use of income account creates an asymmetry in the calculation of the savings ratio, that is, D8 is included in the denominator (income) but excluded from the numerator (savings).

The secondary distribution of income account can then be further reorganized with the following items and their breakdowns:

- Taxes on products: new D21 = present Taxes on products D21
- Other taxes: new D29 = present Other taxes on production D29 + Current taxes on income, wealth etc D5 + Capital taxes D91
- Subsidies on products: new D31 = present Subsidies on products D31
- Other Subsidies: new D39 = present Other subsidies on production D39 + Investments grants D92
- Property income: new D4 = present D4
- Social contributions: new D5 = present D61
- Social benefits: new D6 = present D62
- Other transfers: new D7 = present Other current transfers D7 + Other capital transfers D99
- Adjustment for pension funds: new D8 = present D8
- Social transfers in kind: new D9 = present D63

This modified presentation of the sequence of accounts is shown in Table 2.

This new presentation of the National Accounts, with GDP at basic price and the other proposed changes, has some conceptual and practical merits. In the author's mind, all these propositions are linked. While this note was written from

TABLE 2

PROPOSAL FOR MODIFIED PRESENTATION OF RESOURCES AND USES IN THE NATIONAL ACCOUNTS

Uses			Resources	
Total Economy	Goods and Services		Goods and Services	Total Economy
		Production		
P6		Exports	P6	
	P7	Imports		P7
	P1	Production		P1
P2		Intermediate consumption	P2	
B1		Value added/GDP		
		Generation of income		
		Value added/GDP		B1
D1		Compensation of employees		
B2 + B3		Operating surplus + Mixed income		
		Allocation of primary income		
		Compensation of employees		D1
		Operating surplus + Mixed income		B2 + B3
D4		Property income		D4
B5		Primary income		
		Secondary distribution of income		
		Primary income		B5
	D21	Taxes on products		D21
New D29		Other taxes		New D29
D31		Subsidies on products	D31	
New D39		Other subsidies		New D39
New D5		Social contributions		New D5
New D6		Social benefits		New D6
New D7		Transfers		New D7
D8		Adjustment for pension funds		D8
B6		Disposable income		
		Redistribution of income in kind		
		Disposable income		B6
New D9		Social transfers in kind		New D9
B7		Adjusted disposable income		
		Use of income		
		Disposable income		B6
P3		Final consumption expenditure	P3	
B8		Saving		
		Use of adjusted income		
		Adjusted disposable income		B7
P4		Actual final consumption	P4	
B8		Saving		
		Capital account		
		Saving		B8
P5		Gross capital formation	P5	
K2		Net acquisition of NP NF assets		
B9		Net lending/net borrowing		

the notion that one proposal would lead into another one, these proposals can be discussed separately.

Three conceptual remarks may be added. First, this presentation is *conceptually clearer* than the existing one. GDP_bp now equals the sum of all the value added, and it is split exactly in Compensation of employees and Operating surplus,

which fits with economic theory. The three measures of GDP (supply, demand, income) are still valid with only a few modifications. In my opinion, it is more natural that net taxes appear on the demand side of the accounts rather than with supply or income.

The new sequence of accounts shows government as a producer of non-market services up to the Allocation of primary income account, and then as redistributing the national income. These two functions are clearly distinguished. All redistribution appears in the relevant Secondary distribution of income account which shows the main differences between countries in the social sharing of national income in one account.

With the grouping of capital transfers in the Secondary distribution of income account, taxes and social contributions are shown with an accrual valuation as payable, and the unpaid part as transfer, so that the disposable income is shown as net revenue of government. This may be a solution to the debate between accrual recording versus net revenue recording.

A second conceptual advantage of this recording method is that it resolves the so called "*question of consumption subsidies*." With a GDP at basic price, subsidies on the demand side can be included without decreasing GDP. This is not the case with the present SNA definition of GDP_mp. Indeed the discussions in the expert group preparing the 1993 SNA about, for instance, the former high subsidies on rents on dwellings in some Eastern Europe countries, are stranded because including the latter would have resulted in an underestimation of GDP.

Thirdly, the new separate item "*net taxes on products*" appearing in the basic balance equation has now to be shown explicitly and not embedded in GDP because the ratio D21N/GDP, calculated according to the present SNA, is very different between countries. With the figures of the economy described in Table 1, D21N/GDP is 133/1854 = 7.2%. It is clear that these differences may blur a proper comparison of production and GDP between countries. For example, Table 3 shows that for Iceland, GDP_bp is 15.8% lower than GDP_mp.

The quasi zero figure for Japan in Table 3 deserves a special comment. It seems appealing because it would be a great practical simplification if it were

TABLE 3

Ratio D21N (Net Taxes on Products)/GDP Calculated for Different OECD Countries for Year 1997

	D21N/GDP (%)		D21N/GDP (%)		D21N/GDP (%)
Japan	–0.1	Germany	9.6	United Kingdom	11.1
Turkey	3.4	Slovak Republic	9.7	Greece	11.5
Korea	3.4	Ireland	10.3	Poland	12.6
Switzerland	4.9	Italy	10.4	Sweden	12.7
United States	7.4	The Netherlands	10.6	Portugal	13.4
Canada	7.5	Czech Republic	10.6	Finland	13.8
New Zealand	7.8	Austria	10.7	Norway	13.9
Australia	8.3	Belgium	10.7	Hungary	14.4
Spain	8.5	Luxembourg	10.8	Denmark	14.5
Mexico	9.5	France	11.0	Iceland	15.8

Source: OECD.

possible to have this zero resulting from the actual definitions. But there is no rationale to justify such a zero from theoretical considerations.

The new sequence of accounts presented above also results in some practical simplifications. The first one is that subsidies are shown directly as positive uses and resources, and not as negative taxes as in the present SNA. The latter presentation has puzzled many users, but treating subsidies as negative taxes can be questioned conceptually. As mentioned earlier, subsidies are paid out of the total of resources of government, without any link with a particular source of income. All transfers are also shown as positives. Finally, in the traditional presentation of the three measures of GDP, two different kinds of taxes are included, namely net taxes on products (D21N) from the demand point of view, and D2N = D21N + D29N on the income side, which is often confusing for students and other users of the accounts.

4. Another Allocation of Government Production

In the present SNA, almost all the government production is recorded as final demand (and totally included in GDP) despite the fact that part of it is intermediate consumption by the institutional sector. Here I propose a simple conventional breakdown of government production between intermediate and final consumption in proportion to total consumption.[6]

In fact the issue here deals with the same question as above, namely how to treat government in the National Accounts, in particular how to deal with taxes and subsidies and the breakdown between market and non-market GDP. And it is conceptually consistent to the earlier observation that if government has a close to zero or a negative Net Primary Income, it should have a *zero Actual Final Consumption*.

In the 1968 SNA and the 1970 ESA, the production of non-market services by government is, by convention, shown as being mainly (or even totally) a final consumption of government itself. A small part is shown as household expenditure. Some countries also record in their accounts a small amount of intermediate consumption of non-market services. This treatment is not very satisfactory from a conceptual point of view. As with financial intermediation services indirectly measured (FISIM), an output is calculated without having a proper definition of who uses it and so it is assigned to a conventional balancing item. Nevertheless the traditional treatment of government appeared justified on two grounds. First, one may not speak of government as an actual user of these services, but of government as representative of the collectivity (the citizens, or the nation). Second, there would be no way to assign government output to the actual consumers. But both of those arguments have undesirable consequences on the GDP level. Whereas the allocation of all FISIM to intermediate consumption results in an underestimation of GDP, the allocation of (almost) all non-market services to final consumption results in an overestimation of GDP. Whereas the correction for FISIM is now being done in many countries, the allocation of government output to non-market services has not been addressed so far.

[6]The text that follows is an adaptation, in the context of GDP at basic price, of a paper I presented at the 2002 General Conference of IARIW in Sweden.

As regards government and non-profit institutions serving households (NPISH), the 1993 SNA and the 1995 ESA have made progress by introducing the idea of individual consumption for services (mainly education and health services) that are provided to identifiable individuals. These are included in actual final consumption of households. In the future, an allocation of other parts of government services (for instance the maintenance of roads) to consumers can be proposed as well. However there will remain an important amount that, by convention, can only be treated as collective final consumption of government.

The proposal that follows deals with this production/consumption distribution of (non-market) collective services of government, except those already allocated directly to households.[7] These collective services (general administration, justice, security, etc) are produced to a lesser or greater extent in all societies because societies cannot exist without them, and they are "used" by all sectors of the economy. What is needed is a procedure that will explicitly show the "use," intermediate or final, of these services by the various institutional units and sectors in the economy. From a conceptual point of view, even a rough breakdown, for example, by splitting in half between intermediate and final consumption would be better than the present allocation in total as final consumption, which hides this (unknown) breakdown.

The proposal to allocate the production of collective government services to users does not call into question their collective nature (indivisible public goods), nor does it imply that they are not "non-market." It is simply a matter of identifying those who actually benefit from them so as to allocate to them, in a more or less conventional way, the consumption of this collective output. As a consequence of this complete allocation, households remain the only final consumer, a conclusion often considered in theoretical economics. The alternative treatment does not mean a new calculation of the non-market production of government, but another allocation of it. It can be used with any measure of the non-market production, that of the present SNA or any other one that could be proposed in the future.

Market GDP and Non-Market GDP

Before calculating the proposed allocation, a preliminary step is necessary. The specificities of non-market sectors, and especially of the government sector, requires a breakdown of GDP between market GDP and non-market GDP, which will be used in the following. As mentioned above, this breakdown was systematically presented in the French National Accounts up to 1999 (when the 1995 ESA was implemented).

Table 4 can be straightforwardly constructed from the figures in table 15.1 of the 1993 SNA. In this simplified presentation, for products, market (M) is the sum of market and own final use, and for sectors, non-market (N) is the sum of government S13 and NPISH S15 (and is simply coded S13). The market production of the non-market sector (only 4 in the original table) has been added to the

[7]Another conceptual issue concerns R&D expenditure by government which is to be capitalized in the revised version of the SNA, and is therefore excluded from the present discussion.

TABLE 4

Breakdown of GDP Between Market GDP and Non-Market GDP

	P1	D21	D31	P7	TOT RES	P2 M	P2 N	P2	P41 S14	P42 S13	P4	Other USES	TOT USES
P1 M	3,228	141	–8	499	3,860	1,644	239	1,883	1,023		1,023	954	3,860
P1 N	374				374				220	154	374	0	374
P1	3,602	141	–8	499	4,234	1,644	239	1,883	1,243	154	1,399	954	4,234
B1 M	1,584	141	–8	499	2,216	0	239	239	1,023		1,023	954	2,216
B1 N	135				135	0	–239	–239	220	154	376	0	135
GDP_bp	1,719	141	–8	499	2,351	0	0	0	1,243	154	1,399	954	2,351
GDP_mp	1,854			499	2,353	0	0	0	1,243	156	1,399	954	2,353

Notes: The column codes are those of the 1993 SNA: P1 production; D21 taxes on products; D31 subsidies on products; P7 imports; P2 intermediate consumption; P41 actual final consumption of households; P42 actual final consumption of government; P4 actual final consumption. The letters M and N refer respectively to Market and Non-market.

TABLE 5

Allocation: First Step

	P1	D21	D31	P7	TOT RES	P2 M	P2 N	P2	P41 S14	P42 S13	P4	Other USES	TOT USES
						1,644	239	1,883	1,243				
Alloc N								93	61	–154			

market sector:[8] the production matrix is then bloc-diagonal in market/non-market and consequently the value of total market products equals total market sectors (and the same for non-market).

The first three rows in Table 4 are the aggregation of Table 1 with the desired detail. The next three rows are obtained by deducting intermediate consumption from the relevant production. For instance, Value added of the market sector is 1584 = 3228 – 1644, that of the non-market sector is 135 = 374 – 239 (and hence the apparition of a formal negative –239 in the intermediate consumption of the non-market sector). Market GDP is coded B1_M, non-market GDP is coded B1_N, their sum total GDP_bp is shown on the third row, and as a memorandum item, GDP_mp according to the present SNA in shown in the last row.

An Allocation Proportional to Domestic Consumption

If the aim is to allocate the (remaining) production of collective services by government to the "beneficiaries," what weights should then be assigned among the users to each unit or sector? This is another old question without a definitive answer. It has been proposed, but not accepted in the international standards, that allocations are made according, for instance, to taxes paid. The new proposition here is to allocate production according to total domestic consumption. More

[8]As mentioned above, to be consistent with this new sequence of accounts, the measure of the production of the non-market sector (the sum of costs) has to be slightly modified by excluding from the costs the other net taxes on production (only 2 in the original table), and consequently the actual final consumption of government has to be reduced by the same amount: 156 – 2 = 154.

TABLE 6
ALLOCATION: SECOND STEP

	P1	D21	D31	P7	TOT RES	P2 M	P2 N	P2	P41 S14	P42 S13	P4	Other USES	TOT USES
0										154			
1								93	61	0			
2			–93						61	0			

TABLE 7
MODIFIED BREAKDOWN OF GDP BETWEEN MARKET GDP AND NON-MARKET GDP

	P1	D21	D31	P7	TOT RES	P2 M	P2 N	P2	P41 S14	P42 S13	P4	Other USES	TOT USES
P1 M	3,228	141	–8	499	3,860	1,644	239	1,883	1,023		1,023	954	3,860
P1 N	374		–97		277				277	0	277	0	277
P1	3,602	141	–105	499	4,137	1,644	239	1,883	1,300	0	1,300	954	4,137
B1 M	1,584	141	–8	499	2,216	0	239	239	1,023		1,023	954	2,216
B1 N	135		–97		38	0	–239	–239	277	0	277	0	38
GDP_bp	1,719	141	–105	499	2,254	0	0	0	1,300	0	1,300	954	2,254

precisely, an easy and consistent solution is to allocate government non-market output proportionally to total consumption (intermediate and final) of each institutional unit or sector. This clearly is an conventional allocation, but the present treatment is also a conventional one as recalled above.

With the figures of the 1993 SNA aggregated as shown in Table 4, the breakdown of non-market production of government (154, see footnote 9) between intermediate and final consumption will be done according to the same breakdown in total consumption (1883; 1243), that is, 93 + 61 = 154.

The increase (61) in Actual final consumption of households (P41) is an increase in the Individual consumption expenditure of government (P31), and it can be balanced by an increase in transfers of individual non-market goods and services (D632). This is the same treatment used in the present SNA for education and health expenditures of government. The Individual consumption expenditure of households remains the same, but it benefited freely of these 61 units.

Likewise the increase in Intermediate consumption is not actually paid for. This means that the intermediate consumption of non-market products is totally subsidized, i.e. at zero purchasers' price.[9] This treatment avoids the problem of an actual increase in the intermediate consumption of non-market sectors which would increase the production of those sectors, and consequently the final consumption of their services, and so on with a multiplicative effect.[10] But when treating those as subsidies on non-market products D31, value added is not modified, neither for market sectors nor for non-market sectors, because production and intermediate consumption remain the same. It is worth noticing that this

[9]Thanks to Andre Vanoli, it turns out that this proposed treatment is not entirely new. In his book (p. 313), he recalls Hicks (1940) who proposed to treat all non-market production as fully subsidized.

[10]For the detailed calculations, see my paper for the 2002 IARIW Conference, available from the website of Statistics Sweden (www.h.scb.se/scb/Projekt/iariw/program.asp).

treatment is only allowed with the measure of GDP_bp which remains the same, as it would have decreased the GDP_mp abnormally. The two steps of this allocation are summarized in Table 6. Finally GDP_bp is shown in Table 7.

With this treatment, all the proposed changes are concentrated on the non-market products, for which there are two conventions: a measure of production and an allocation of this production, which is another good reason to show the two parts of GDP separately. For all sectors, production, intermediate consumption and value added are not changed. Of course GDP_bp also remains unchanged.

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