TREATMENT OF GOVERNMENT ACTIVITY ON THE PRODUCTION ACCOUNT

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This paper is the concluding part of a project described in an earlier paper in this journal.[1] The conceptual partition of government services into intermediate, individual and collective consumption is connected to the framework of the SNA and ESA. The paper shows how elements from both systems can be welded together in order to describe government productive activity more clearly within the general make-use matrix approach. After an attempt to clarify some of the existing terminology, figures are presented which show that the partition is feasible, in principle. The data also support the necessity of distinguishing between individual and collective consumption of government services leading to the concept of total individual consumption. Finally, the paper concludes that intermediate use, if properly defined, should be introduced as a subcategory of government consumption, but not subtracted at present from GDP.

1. GOVERNMENT AS A PRODUCER

1.1. In the course of building national accounts the government sector has consecutively occupied different places. This had to do with the definition of production. Whenever a change in this definition occurred, the government sector shifted its place. In a pure market theory of production, only activity that produces commodities is productive. Consequently, only enterprises are loci of production, while government is not. Government buys commodities "not for resale," which typically is consumption and not production in a pure market system. A logical consequence of this approach is that labor services used by government are defined as unproductive. The corresponding wages and salaries are transfers. But this is incompatible with the fact that these services are bought on a market, in fact the same labor market, where private enterprises buy their labor, so that the pure market definition of production is contradictory. Which market is to be preferred in order to define production, the commodity or the labor market?

After some struggle Western national accounting opted for the second. Today all wages, salaries, and other income that is paid for labor services are considered to originate in production, and the output, consequently is considered a product.[2] Yet, the old concept of government as a mere consumer still remains and appears in some of the standard terminology. In addition, the main activity of the

*The author acknowledges valuable comments from H. Adler and P.S. Sunga, Ottawa; A. Franz, E. Fleischmann, and N. Rainer, Vienna; M. Holler, Munich; N. Ruggles, New Haven and the participants of the 1983 IARIW General Conference at Luxembourg.

[1]Horz, K. and Reich, U. P., Dividing government product between intermediate and final uses, *Review of Income and Wealth*, Series 28, No. 3 (1982), pp. 325-344.

[2]The once hotly debated issue of productivity has settled on—from that point of view—perverse conventions. In capitalism where the labor theory of value is rejected, all paid labor is defined productive. In socialism, where the labor theory of value is accepted and capital rejected as a social force, commodities form, in essence, the national production boundary.

government sector is typically carried on not in the fields of production but distribution and redistribution, and thus it addresses other accounts of the system more than the production account. Accordingly, primary data about the government sector are more likely organized along these lines and not in terms of a production assessment. This again blurs the picture. Altogether the treatment of the government sector is not yet regarded as being fully satisfactory.

Under these circumstances, suggestions on how to improve it are welcome. But they are not the main purpose of this article. The aim pursued here is preliminary to suggestions for revision. One must recognize the fact that national accounting has left its stage of infancy and has become an adult profession with rules and conventions in its own right. This means that abstract principles are not the only guidelines that must be considered in reviewing the accounts. A certain conservatism is required in order not to sacrifice continuity and, thus, use of these statistics.

1.2. In the double matrix system of the SNA, national production is described in terms of "commodities" and "activities." A third important category that will come up later is "purpose". Within this framework the government sector functions as "producers of government services", which are collected together with "industries" and "producers of private non-profit services," under the heading of "activities." The sales of government are registered on the commodity account. However, whatever part of output is distributed outside the market is not entered here; it is included under "final consumption expenditure of government" and registered directly and fully in final demand. Figure 1 shows this system.

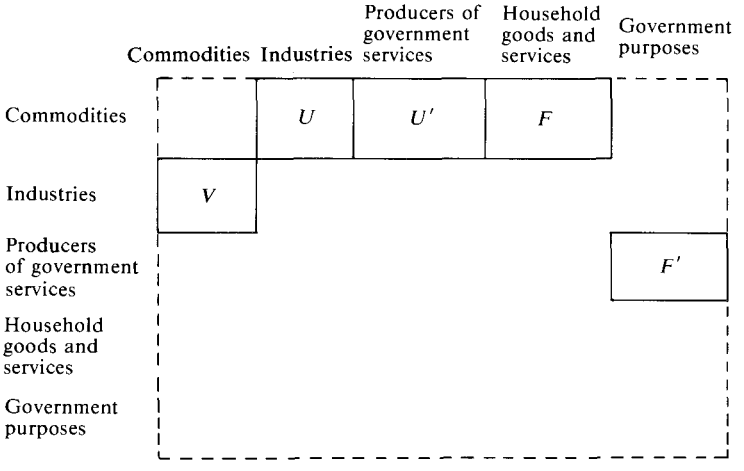

Figure 1. Production of Government in the SNA

It is taken from Table 2.1 of the SNA and shows the five categories that are relevant in this context, commodities, industries, producers of government services, household goods and services, and government purposes. These are interrelated by matrices U, U', F, F', and V, the first four depicting the use, the fifth and last the make of production.

Obviously, government is not treated symmetrically with industry. While there is a correspondence between industries and commodities by way of the make matrix, no such relationship exists for government. Its non-market output is imputed directly to final demand (F'). There are reasons for and against this asymmetry, as will be shown later. With respect to inputs government and industry are treated in a parallel way. Both are treated as activities using commodities for production. Is the parallel treatment of the inputs of these sectors adequate?

"Industries" are aggregations of establishments "the activities of which are financed by producing goods and services for sale in the market at a price that is normally designed to cover the costs of production. In other words, they produce commodities." (SNA, p. 72) They should yield "transactor units which are relatively homogeneous in respect of the character, cost-structure and technology of production". (SNA, p. 73) Likewise, "the statistical units used in the case of producers of government services should be establishment-type units which are as homogeneous as is feasible in respect of both the kind of service they perform and the purpose they are designed to serve." (SNA, p. 75) The units of classification are similar in both categories; thus the parallel treatment is justified. Both are activities in the production account sense.

1.3. However, re-reading the definition of establishment we find that two criteria are offered, "production of goods and services" on the one hand, and "for sale in the market" ("commodities") on the other. The two are not the same. The very fact that government has been recognized as a producer implies that there are goods and services which are not for sale, and still they are products. More precisely, the distinction between a market and a non-market good or service is not necessary for the production account. A good is not different in production or in use according to whether it is paid for directly (market) or via taxes (government). The distinction is relevant on the income and distribution accounts where institutional sectoring shows the acquisition and distribution of product.

There are "two main classes of transactors" in national accounts, "one in connexion with the flow of goods and services and relevant in the production, consumption expenditure and capital formation accounts; and the other in connexion with the flows of finance and relevant in the income and outlay and capital finance accounts." (SNA, p. 71) This is equivalent to the distinction of "transactions in goods and services" and "distributive transactions" in the ESA. Naturally, data are usually collected and thus found in institutional units, but ever since the notion of "units of homogeneous production" (ESA p. 37) was invented, it is agreed that these, and not institutional units, should govern the production account. Methods have been developed to construct production units from institutional data.

In these terms the wording in the SNA reflects more of its own history than is appropriate. True, if only commodities are considered, as they once were, the quoted definition of establishments and industries is correct. But when the government sector was included on the production account, the term commodities should have been replaced by "output," as it is indeed in the ESA: "Output comprises the goods and services produced by resident producer units during a given period." (ESA, p. 42)

The standard partition of the SNA production account into "industries", "producers of government services" and "producers of private non-profit services" appears thus somewhat contradictory to its own principles, because it introduces on the production account the very dimension which does not belong there. The contradiction is addressed in the SNA: "It may be asked why the producers of government services... should be separated from industries, since the different types of activity are all designed to fit into a common classification of all economic activities. The reason is," SNA continues, "to be found partly in the differences in cost structure of activities organized in different ways and partly in the interest which attaches to the cost structures of non-industrial activities and, in particular, to the activities organized by government." (SNA, p. 18)

In terms of primary data collection the argument is certainly valid. Enterprises furnish one type of data, government another. But the matter of which institution furnishes data (unit of observation) need not determine what unit to represent in the data (unit of classification). Differences in cost structure are interesting, of course, but the justification for institutional separation of activities offered here is weaker than the principle of technological homogeneity, inherent on the production account.

Besides a better wording, we also find an appropriate technique in the ESA. A letter A, B, or C after the code number of a branch, describes the institutional type of a service (ESA, p. 46):

A: non-market services of general government
B: non-market services of private non-profit institutions
C: market services.

In subdividing the code of a homogeneous production branch into categories of institutional dimension the ESA offers an adequate solution for connecting production and institution. Institutional characteristics are not shown as separate branches but as subdivisions of branches. Similarly in the SNA one could distinguish between industries and producers of government services not on the levels of activities (codes of ISIC), but within each activity.

In this way one would integrate the two use-matrices (U, U'), which are now separated by their institutional characteristics, into one use matrix, where each activity (ISIC code) is subdivided into industry and government, whenever necessary. Likewise for the make matrix, where output of non-market production units (e.g. a government hospital) would be registered together with market production (e.g. a private hospital) under the same activity. Figure 2 shows this structure.

As compared to Figure 1, the term "commodities" is replaced by the term "outputs" and the columns of the use matrices U and U' have been combined in such a way that similar processes are found under one code number and institutional differences as subdivisions thereof. In terms of structure this is a rearrangement of columns.

What has been argued for activities applies to commodities as well. Goods may be sold at ordinary market prices or at fees that do not cover costs, or they may be distributed free. These differences in income generation can be caught by subdividing each commodity into commodity sales (in the strict sense),

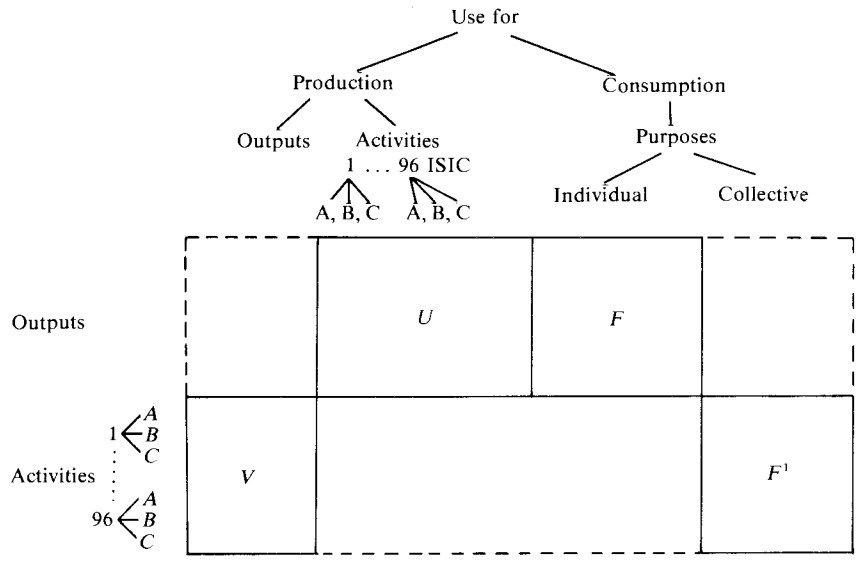

Figure 2. Treatment of government output integrating ESA and SNA

non-commodity sales and own account consumption (A. Franz, E. Fleischmann, N. Rainer 1982). Again the physical aspect should be the ruling one so that these institutional distinctions are used to *sub*divide each physically homogeneous category.

1.4. There is another question of structure. In the SNA no make matrix is assigned to the non-market output of government. Instead this output is directly imputed to final demand (F'). Should not a matrix be constructed for this output as well? The question is sharpened by the following argument. Activity is measured by its level, this level being defined as the quantity of its characteristic product. In other words, in order to quantify the concept of activity a one-to-one correspondence between activity and characteristic output must be established. In addition, the notion of output requires that it be separable into a component of quantity and one of price. Otherwise, the notion of output would be a mere fiction. But can a quantity-type output be attributed to all government activity? For a hospital this should not be difficult, at least in concept, since private hospitals must invent some quantity indicator to sell their services. But what about other government activities such as defense? Does it make sense here to postulate a quantity indicator of output? If not, can we accept the consequence that there is production without output?[3]

The SNA allows for this possibility. Matrix F' as opposed to F assigns activities directly to final use without any intervention of output ("commodities"). This is the supporting argument for the distinction between government and industry, even if the sales aspect were properly ignored. In all probability it is

[3]Following a suggestion made by P. S. Sunga we might call such production "non-economic" production.

not possible to account for every government output in a make matrix similar to that for industry. To do so would impose an artificial similarity between some government activities, namely those that have no output, and industry. The differentiation has a simple logic. It is common sense to carry on "activities" for a "purpose." Most of the time the connection is made by means of a good or a service (in or outside of a market). But in some cases no intervening object exists and the activity serves its purpose directly. The matrix F' cannot be dispensed with, but its distinction vis-a-vis F should not be "sales" or "no sales," but "output" or "no output," where the word "output" should be taken in the sense of a physically measurable quantity.

1.5. Another terminological relict of the earlier market definition of production is the SNA term "final consumption expenditure of government" or, shorter but worse, "government final consumption expenditure." (SNA, pp. 109, 152) The obvious, but nevertheless inappropriate, connotation is that government makes such expenditures as a final consumer, similar to private households. This is correct from the pure market concept of production, but it is in contradiction to the convention that government consists of producing units. By definition producing units have only intermediate and not final consumption. In addition the term "expenditure" is inappropriate in that these figures actually represent not purchases, but a balance between purchases and sales. Again, the ESA provides a clearer and more distinct terminology in speaking of the "collective consumption of general government and private non-profit institutions." (ESA, p. 51) Surely the method is the same as applied in SNA, i.e. all non-market output is registered as final, but the wording better reflects the role of government as a producer. Also the word consumption describes the actual use of goods that are entered into the production account better than the word expenditure, which is more appropriate on the accounts not of production but of income and outlay.

Wording is not a primary concern in a system where structure dominates the method. One can always live with "wrong" words if it is clear what they mean. But, as new projects are emerging for greater detailing of government activities, a precise terminology avoids misunderstandings. "Final consumption expenditure of government" is neither completely final nor an expenditure in the strict sense of these words. In order to better understand what it is instead, another terminological problem must be investigated, the distinction of (and confusion between) "kind of activity," "function," "purpose" and "use."

2. Kind of Activity, Function, Purpose and Use

2.1. The SNA structure developed in Figures 1 and 2 has room for three different classifications, one for goods and services (output), one for activities, and one for purposes. COFOG, the new classification provided for describing government, uses none of these terms but a fourth term "function." If the progress in detailing the data that has come with the new classification is not to be offset by a regression in conceptual clarity the relationship of the term "function" to the other three terms must be determined.

A first hint may be found by the reference to another classification which is made in COFOG itself:

"ISIC is a classification of production units according to their kind of activity. COFOG is in practice very similar; in principle, its unit of classification is the individual transaction, but the unit will often be the same as for ISIC for many types of outlays, and the criteria of classification—function in the case of COFOG and activity for ISIC—are conceptually rather similar. However, COFOG is more appropriate than ISIC for classifying government expenditures because the list of functions in COFOG is more detailed than the ISIC list of activities and has been drawn up specifically to take account of the range and diversity of government activities" (COFOG, p. 5).

From this self-description COFOG more or less appears as an extension and detailing of ISIC in the non-market sphere. "Function" is then a non-market "activity" in the same sense as "industry" is a market "activity" on the production account.

If this view is correct the units of classification must be similar in each category. For industries the unit of classification is the establishment, for government these are establishment-type units. Both kinds of units are meant to be technically homogeneous in the SNA. In as much as these micro-concepts are similar one can say that the macro-concepts "activity" and "function" derived from them are similar. Also, in its draft stage COFOG defined:

"The unit of classification is the smallest body that can be identified in the accounts and to which one (or sometimes more) function can be attributed." (COFOG draft p. 6)

This is an indication of the intention to parallel function and activity.

2.2. However, the matter is more complicated. In the draft it also says:

"The classification is called the "Classification of the functions of government" (COFOG). The term "function" rather than "purpose" is used mainly because it is less ambiguous.... The change in terminology does not imply any change in the underlying rationale of the classification nor in the uses to which it may be put." (COFOG draft p. 3f)

Here COFOG is seen as a classification of purposes, not of activities. This is also the historical root of the classification which is meant to replace Table 5.3 of the SNA, Classification of the Purposes of Government. Since, in addition, Nancy Ruggles as the original instigator of COFOG points out "most emphatically" that COFOG was not meant to be an activity classification (private communication), the evidence for the purpose interpretation is strong.

It can be corroborated by another draft called Classification of Outlays of Industries by Purpose (COIP), which represents "a first attempt to provide a tool for the organization of data on expenditures of industries according to purpose." (p. 3) This indicates that purposes are categories that apply not just to government or households but to industry as well, and that they are different from activities.

2.3. What is the difference between activity and purpose? It seems that a clarification of this difference implied by the structure of the SNA is required before the term function can be properly matched.

Since no explicit definition is given in the SNA one must try to infer the meaning of these two concepts from the way they are used. The concept of activity is used in order to distinguish different production accounts within one and the same economy. It orders establishments according to their technical characteristics as said above. It orders them in a special way, programmed by the use and make matrices. Here the technical interdependency of production is described by forming sets of transformation inputs which belong to a specific (output). The sender and the receiver of a product are important variables in this structure.

The purpose classification is applied to households and government in the SNA. Its aim is not to subdivide these sectors and to show interlinkages within them. These two sectors being given the role of final demanders and disposers of economic means, they can pursue purposes other than mere production. Each transaction effected carries its own purpose, and consequently, a purpose classification calls itself a classification of transactions rather than smallest units. More specifically, a purpose classification intends to cover all transactions of a particular institution while in the activity classification only those transactions referring to goods and services are relevant. Thus activity and purpose classifications are different on the microlevel. The first collects only transactions in goods and services and clusters them in smallest production units, the second collects all transactions, including distributive ones and describes each transaction individually. By looking at the unit of classification one should thus be able to decide to which side COFOG belongs.

However, COFOG defies this attempt. Following an intervention of the European Community who insisted that the unit of classification should be the individual transaction independent of its institutional origin (Statistisches Bundesamt 1981, p. 10) the final version of COFOG reads:

> "The units of classification are, in principle at least, individual transactions . . . It is recommended that this principle should be strictly followed with regard to capital and current transfers and the net acquisition of financial assets. For most other outlays, however, it will generally not be possible to use transactions as units of classification. Instead, COFOG codes will have to be assigned to agencies, offices, program units, bureaux and similar units within government departments." (COFOG pp. 2f)

This is a beautiful compromise, beautiful because, first it continues the tradition of the SNA where more or less the same recommendations are given (SNA p. 68). Second it is a compromise which works well with the given data base, and third it is a compromise with a theoretical perspective. Apparently, there is a conflict in concepts, and this has to do with the specificities of government action in the economy. It seems that two different views of this action are combined in COFOG. On the one hand, there is the production view. It is based on the assumption that there are smallest production units in government, which purchase goods and services and transform them into some other good or service just like any market production unit. This is the view of the term "function" as "activity." On the other hand, there is the view of government as essentially one

economic agent, carrying out transactions not only in goods and services, but in current and capital transfers, to a large extent, too, and for these transfers the receiver and the sender are trivial, in most cases, while the specific "purpose" of the transfer gives it its analytical meaning. As it stands COFOG intends to be used for both views.

It does not seem to be accidental that the deviation from the pure transaction rule is recommended for precisely those transactions which form the basis of the production account.

Should one resolve the compromise in favor of a clear cut solution? At the present stage of data accessibility this does not seem necessary, but it may help to clarify concepts if one questions the necessity of having one and the same classification for two very different kinds of transactions, namely transactions in goods and services on the one hand, and transactions in transfers (distributive transactions) on the other. A fundamental distinction in the SNA is the one between transactors (and transactions) of production, consumption and capital formation on the one hand and transactors of income, outlay and capital finance on the other. While from the budget point of view a common classification for the two certainly is natural, the perspective need not be the same when government is described as one of several sectors within the overall economy. Is it perceivable to separate the levels, and to classify transactions in goods and services by the government in ISIC (more detailed if necessary) and all transfers in COFOG?

At any rate, for the project reported here the terminological issue was not solved. Entering governmental activity on the production account requires that one study the purchases (and sales) of goods and services by government. The most detailed data are cast in COFOG, and since presumably purchases and wage payments are those transactions, in particular, which are collected in "smallest bodies" the approximation to an activity code, if not theoretically justifiable, seemed at least a fair practical approximation. In the following, then, COFOG is treated as if it were an activity classification with respect to purchases.

2.4. A fourth term that should be put into place here is "use." It is most commonly employed in such expressions as "intermediate use" and "final use." The first is particularly relevant as intermediate use is detailed in the so-called use matrix. In Figure 2 a consistent definition of these terms is attempted. According to it, "use" is the general term for either "activity" or "purpose," where the first is the classification of intermediate and the second the classification of final flows.

These definitions may be extended in order to distinguish, within final use, between individual use and collective use. The word use is appropriate for the production–consumption account in that it avoids reference to expenditures (in contrast to the term "demand").

The government sector, in order to appear properly on the production account, must have its productive activities classified according to two criteria, "kind of activity" (make) and "use." Formally speaking it must be decided for a particular set of government inputs (purchases, wage payments) what activity they belong to in the use matrix, and for the corresponding output where to register it in the make matrix. As can be seen from Figure 2 there are two options. The result of an activity requiring inputs in matrix U may be recorded either in

the output matrix V or directly in F' in a classification of purposes. At present all unsold product, "own account consumption," of government is entered here, forming part of gross domestic product. The question is, however, whether this rather crude treatment might not be refined, and thus provide more information about the activity of the government in the economy.

3. Classifying Government Activity

3.1. Equipped with the accounting structure as developed in section 1 and the terminological distinctions as suggested in section 2 of this paper, we are ready to approach some concrete problems of the government sector on the production account. The first question is: can the national responses to the last OECD government questionnaire (OECD 1981) be used for a detailing of government activity on the production account?

The questionnaire was based on COFOG. Thus we know, within the limits discussed before, the kind of activity of governmental establishment-type units. As regards goods and services only one figure is presented in the questionnaire, namely final consumption of government (item P3A in ESA, 2.20 in SNA). For the input structure in the use matrix this is insufficient. One would instead need total purchases. Yet, since government sales, the difference between the two, are relatively small, generally, we may take the figures as a first approximation of the value of output of each activity.

As to the use of government output we can utilize, as a first approximation, the definitions of headings as given by COFOG itself, implying a one-to-one correspondence between certain activities and their use:

(a) *general government services* (major groups 01-03), which include "those activities that cannot be associated with services to persons or to business", are mostly for *collective use*;

(b) *community and social services* (major groups 04-08), which include the "services supplied to the community and to households directly", are mostly for *individual use*;

(c) *economic services* (major groups 09-13), which cover activity associated with "the regulation and more efficient operation of business", represent *intermediate use.*

Major group 14, expenditures not classified by major group, cannot be assigned to a particular use, naturally; we include it in collective consumption. Table 1 gives the resulting figures for eight OECD countries.

In order to make the figures more comparable they have been expressed as percentages of gross domestic product in the right part of the table. From the table several interesting conclusions can be drawn.

(a) For all countries in the sample and all years a certain pattern can be observed in that individual consumption absorbs the largest and intermediate use the smallest part of government activity, the only exception being the United States.

(b) Within this general pattern important national differences occur. Intermediate use varies between 0.9 percent (Italy) and 2.4 percent (United States), individual use between 6.8 percent (Portugal) and 19.9 percent

TABLE 1

GOVERNMENT NON-MARKET OUTPUT AND ITS USE

Country	Year	In National Currency			In Percentage of Gross Domestic Product		
			Final Use			Final Use	
		Intermediate Use	Individual Consumption	Collective Consumption	Intermediate Use	Individual Consumption	Collective Consumption
Australia	1977	1,134	8,451	5,044	1.3	9.4	5.6
(Million $A)	1978	1,286	9,273	5,516	1.3	9.1	5.4†
	1979	1,387	10,366	6,385	1.2	9.1	5.6
France	1977	20,427	144,781	112,503	1.1	7.7	6.0
(Million FF)	1978	21,509	168,079	130,704	1.0	7.9	6.1
	1979	26,254	189,870	146,602	1.1	7.8	6.0
Germany (F.R.)	1970	7,220	64,260	34,990	1.1	9.5	5.2
(Million DM)	1977	11,780	145,820	77,070	1.0	12.1	6.4
	1978	12,540	157,120	82,880	1.0	12.2	6.4
	1979	13,960	170,990	88,570	1.0	12.3	6.4
	1980*	15,110	187,870	95,410	1.0	12.7	6.4
Italy	1979	2,369	25,789	15,732	0.9	9.5	5.8
(Billion Lr.)	1980	2,918	32,889	19,829	0.9	9.7	5.8
	1981	3,653	42,752	25,580	0.9	10.7	6.4
Portugal	1977	6,448	43,781	37,618	1.0	7.0	6.0
(Million Esc.)	1978	9,156	53,671	46,843	1.1	6.8	6.0
Sweden	1977	4,986	70,405	26,134	1.4	19.1	7.1
(Million SwKr)	1978	5,783	80,708	28,296	1.4	19.7	6.9
	1979	6,681	91,162	32,459	1.5	19.9	7.1
United Kingdom	1977	1,674	17,215	10,386	1.2	12.0	7.2
(Million £)	1978	1,970	19,526	11,514	1.2	11.8	7.0†
	1979	2,215	22,463	13,618	1.1	11.6	7.1
United States	1979	57,004	169,313	188,734	2.4	7.1	7.9
(Million $US)	1980	63,443	189,375	218,705	2.4	7.3	8.4
	1981	68,139	205,123	252,869	2.3	7.1	8.7

Source: OECD questionaires on government expenditure, 1981, and own calculations.

*Provisional figures; †Including slight statistical differences.

(Sweden), collective use between 5.4 percent (Australia) and 8.7 percent (United States).

(c) Within a country and in the short run these proportions remain rather stable. Data from the Federal Republic suggest that in the long run the proportions may change.

These data support the challenge raised by Pêtre (1981) that separation of individual from collective consumption is urgent in order to make government activity comparable between nations. More than half of government output is actually consumed by individuals as a non-market supplement to private consumption expenditure.

3.2. Intermediate use, on the other hand, turns out to be less significant than estimated in Horz and Reich (1982, p. 339), where between 3 and 3.5 percent of GDP was found for Sweden, U.K. and FRG, as opposed to 1-1.4 percent in this calculation. This brings us to the second question, which is more conceptual in nature. It is obvious and well accepted accounting to register flows of goods and services between industries, i.e. between establishments of different activities. Is it appropriate to register, similarly, intermediate flows between different activities within the government sector?

To take one—and the most prominent, quantitatively—example financial and fiscal affairs and services are classified under general public services in COFOG as probably in every national classification. They appear thus together with executive and legislative organs and external affairs. Yet, from the meaning of purposes following from the structure of national accounts these functions are not really parallel. Purposes are "final," they constitute ends in themselves, at least for government. Raising and administering taxes is a means for such purposes as legislation and the handling of external affairs; it can hardly be a purpose by itself.

Table 2 employs this distinction, showing its quantitative effects. It is based on some estimates that have been made (Reich 1983) using published data of the Federal Republic of Germany. For these estimates the national classification of functions of government was scrutinized with respect to intermediate and final use on a finer level of detail than was possible for Table 1. Table 2 shows two categories of intermediate output: one is input into industry, the other is input into government itself. Altogether, inputs that qualify as intermediate input within government amount to DM 17 109 Mill. in 1975 or 7.9 percent of total government consumption. The actual input into business from the government is only half this size.

Consequently, the total of intermediate use of government output crucially depends on the decision of how to treat the production of government units that serves as input to other government units. If included in intermediate output, this output will rise to 11.5 percent; if not, intermediate output (into business alone) will only amount to 3.6 percent of government output. In the estimates of Horz and Reich (1982) government input into itself is included in intermediate consumption.

Besides distinguishing between two categories of intermediate government output, Table 2 gives some details about government services to enterprises. The total of these inputs is estimated at DM 7.8 billion or 3.6 percent of government

TABLE 2

INTERMEDIATE USE OF GOVERNMENT OUTPUT IN THE FEDERAL REPUBLIC OF GERMANY, 1975
(Million DM)

Group	Intermediate Use		Final Use
	By Enterprises	By Government	
1 General public services			
1.1 General administration		11,000	8,050
1.2 External affairs			820
1.3 Public order and safety			16,360
1.4 General research			4,640
2 Defense			32,520
3 Education			
3.1 General administration, regulation and research		610	
3.2 Schools, universities and other educational facilities			41,090
3.3 Subsidiary services			
4 Health			
4.1 General administration, regulation and research		2,900	
4.2 Hospitals and clinics			21,210
4.3 Individual health services			39,440
5 Social security and welfare services			
5.1 Social security and assistance			15,400
5.2 Welfare services			1,850
6 Housing and community amenities			
6.1 Housing	440		
6.2 Community development		2,599	1,331
6.3 Sanitary services			−580
7 Other community and social services			
7.1 Recreational and related cultural services			4,040
7.2 Religion and services n.e.c.			30
8 Economic services			
8.1 Agriculture, forestry, fishing	1,850		
8.2 Manufacturing, trade, services	1,420		
8.3 Transportation and communication	4,135		4,135
9 Other purposes			
1 to 9 In million DM:	7,845	17,109	190,336
In percent of total government consumption:	3.6	7.9	88.4

Source: Statistisches Bundesamt, Ausgaben des Staats nach Aufgabenbereichen in den Volkswirtschaftlichen Gesamtrechnungs 1970 bis 1978, Stuttgart, Mainz (1981), p. 38, and own estimates.

consumption. More than half of this amount is registered for transportation and communication, namely DM 4.1 billion. This is a crude estimate based on the load-weight carried either as goods or as persons. However, it is good enough to indicate that the major input of government to business in the Federal Republic is only one item, road maintenance.

Table 3 shows a similar breakdown for Canada in 1978. It is more detailed, not only in functions but also in that it differentiates individual and collective

TABLE 3

DIFFERENT USES OF GOVERNMENT OUTPUT IN CANADA 1978*

(Million of Dollars)

Function (Financial Management Statistics Canada)	Intermediate Use by		Final Use	
	Enterprises	Government	Individual	Collective
General services				
1. Executive and legislature				312
2. Administration		3,993		
3. Contributions to pension plans not operated by government			748	
4. Payments under government operated pension plans	—	—	—	—
5. Other				714
Protection of persons and property				
7. National defense				4,078
8. Courts of law				335
9. Correction and rehabilitation				639
10. Policing				1,871
11. Firefighting				605
12. Regulatory measures				474
13. Other				274
Transportation and communication				
15. Air	597			
16. Road	2,438		2,438	
17. Public transit			279	
18. Rail	1			
19. Water	385			
20. Telecommunications	124			
21. Postal services	—	—	—	—
22. Other				191
Health				
24. Hospital care			7,442	
25. Medical care			3,473	
26. Preventive care				407
27. Other				474
Social services				
29. Canada pension plan			42	
30. Quebec pension plan			24	
31. Non-contributory plan—old age security	—	—	—	—
33. Unemployment insurance			323	
34. Workers' compensation			171	
36. Family allowances			4	
37. Veteran benefits			173	
38. Social welfare assistance			264	
39. Social welfare services			663	
40. Ex-gratia pension and allowances			1	
41. Other social welfare			516	
43. Tax credits and rebates			5	
44. Other social services			115	
Education				
46. Elementary and secondary			10,446	
47. Post-secondary			1,085	
48. Special retraining services			230	
49. Other			120	

TABLE 3 (*cont.*)

Function (Financial Management Statistics Canada)	Intermediate Use by		Final Use	
	Enterprises	Government	Individual	Collective
Resource conservation and industrial development:				
1. Agriculture	1,165			
2. Fish and game	342			
3. Forests	410			
4. Mines	81			
5. Oil and gas	79			
6. Tourism	137			
7. Trade and industry	592			
8. Water	37			
9. Other	461			
Environment				
11. Water purification and supply	1,189			
12. Sewage collection and disposal	711			
13. Garbage and water collection and disposal	316			
14. Pollution control				138
15. Other				309
Recreation and culture				
17. Recreation			1,375	
18. Culture			532	
19. Other				144
Labour, employment and imigration				
21. Labour and employment				359
22. Immigration				75
23. Other				22
Housing				
25. General assistance			558	
26. Home buyer assistance			0	
28. Foreign affairs and international assistance				265
Regional planning and development				
29. Planning and zoning				110
30. Community development				190
31. Regional development				239
32. Other				104
34. Research establishments				610
35. Transfers to own enterprises	5			
Total (purchases of goods and services)	9,070	3,993	31,027	12,939
In percent of total	15.9	7.0	54.4	22.7

*Output is approximated by purchases of goods and services.

Sources; Statistics Canada, Consolidated Government Finance 1978, Ottawa 1981, Catalogue 68-202, Table 10; Horz, Reich 1982, appendix; and further private information.

within final use. However, it must be pointed out that the figures represent purchases of goods and services and not government consumption. The difference (sales and capital consumption) may well influence the result, which is that 15.9 percent of output is estimated as intermediate to business, 7.0 percent intermediate

to government, 54.4 percent individual consumption, and 22.7 percent collective consumption. In determining these shares use was made of the assignment of COFOG categories for different uses as established by a German panel of experts (Horz, Reich 1982) and a bridge table between the Financial Management Statistics Canada and COFOG supplied by Statistics Canada.

With due respect to the qualifications mentioned above one can infer from Table 3 as compared to Table 2 that in terms of orders of magnitude the results are similar, although the share of intermediate input in the enterprise sector appears to be considerably larger in Canada than in the Federal Republic.

3.3. The question of intermediate services of government cannot be answered without raising the valuation problem. With respect to services to business there are two options. Such services can either be netted against some other flow such as indirect tax or profit, or the value of business output can be increased by the value of the government service consumed. In the first case GDP would decrease by the value of intermediate government services, in the second it would not. Since GDP is intended to describe a net result of production the first solution would have to be preferred.

With respect to services of government to itself the matter is more complex. Government output is valued at cost. The first question then is about what to consider as the value of output, whether it is the sum of costs including depreciation, or government consumption proper which is costs minus sales. Furthermore if government output is valued at cost, a new intermediate input increases that cost and thus the value of the resulting output. For example, if educational administration is added to education, the cost value of the latter rises. For GDP the effect will be zero, however. If in stage 1 educational administration is counted as collective consumption it is part of GDP. If in stage 2 it is rerouted into educational services, collective consumption decreases, but the value of educational services, and thus of individual consumption, increases by the same amount.

All in all the problems of valuation suggest that in pursuing the separation of intermediate output of government a moderate approach should be adopted. It would be useful to show, within the present figure of government consumption, a subcategory of intermediate use which is part of gross domestic product in the same way as capital consumption is. Both categories are not part of the net output of an economy in theory, but both are difficult to measure, and therefore one prefers to include them in the ordinary indicator of economic performance. On the other hand, the magnitude of intermediate government output is not of such order that a full integration in a conceptually pure way is required. The complexities of the calculations involved would probably obscure the initial purpose.

3.4. Taking up the broader perspective within which the problem of intermediateness is discussed, one comes to the following conclusion. As explained in Horz, Reich (1982) there are two aspects of intermediateness and, related to this, of final product. The tripartite division that is suggested in SNA and COFOG and reinforced in this paper allows for both. Intermediateness in the sense of production means keeping capital intact. Consequently, all those parts of government output which are inputs into production cannot be final. This is the meaning of intermediateness which has been used throughout this paper. The other point of view is welfare. From this point of view, not only production-oriented output,

but in addition collective consumption is non-final, i.e. "intermediate," for from a welfare point of view only individual consumption enters a utility function. Allowing for all three categories, intermediate (in the strict sense), collective and individual consumption, solves the problem in the sense that more cannot be done within a national accounting framework.

More specifically, to criticize the GDP on the basis that it includes non-final output in government consumption is valid. But as was shown here the percentage of intermediate goods from a production point of view is so small that the error made by including it in final product is not unbearable for the existing GDP. And from the welfare point of view the separation of individual from collective consumption is a satisfactory, if not the only feasible, solution to come close to a welfare measure in national accounts. On the other hand, to carry out this separation is desirable, as it neutralizes that criticism.

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