

# DEFINING AND MEASURING THE PUBLIC SECTOR: SOME INTERNATIONAL COMPARISONS

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The public sector is defined here to include government plus public enterprises. Historically, economists and statisticians have been more concerned with its separate components than with the public sector as a whole, but it is suggested that the public sector may be an appropriate concept for studying several current problems of economic policy.

While there is general agreement as to what constitutes government, countries have differing views about what makes an enterprise public. Differences in country definitions of public enterprises are identified as one of the main problems in making international comparisons for the public sector.

Statistics are presented for up to 16 OECD countries on the share of the public sector in total final demand, value added, employment, and net lending. It is argued that there is rarely a unique answer to the question "How big is the public sector?" For most countries judicious selection of data and careful definition will lead to different conclusions about the size and growth of the public sector.

Because of the lack of data, it is not possible to analyse public sectors in developing countries in the same detail as OECD countries. The evidence available suggests that while public sectors are about the same size in both OECD and developing countries, public enterprises play a more important role in the latter.

## I. INTRODUCTION

The term "public sector" is often used as a synonym for government, but the public sector of this note covers public enterprises in addition to government agencies. A "public sector" in this broader sense is defined in *A System of National Accounts* (SNA)<sup>2</sup> and is the subject of Volume IV of the series of "handbooks of national accounts" currently being prepared by the United Nations Statistical Office.<sup>3</sup> To date, however, this public sector has rarely been fleshed out by statisticians or analysed by economists.

The components of the public sector have, of course, been studied in considerable detail in most OECD countries but they have generally been looked at in isolation, rather than as parts of a single entity. The main reason is, no doubt, because so many of the questions asked about government behaviour are not relevant for public enterprises, and vice versa. Studies of government have usually focussed on its role in redistributing income and wealth, or on the kinds of services governments provide to the community at large; studies of public enterprises, on the other hand, have mainly been concerned with their

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<sup>2</sup>*A System of National Accounts*, Series F, No. 2, Rev. 3, United Nations, New York, 1968. See Chapter IX, paragraph 9.47 ff.

<sup>3</sup>*Draft Manual on Public Sector Statistics*, ST/ESA/STAT.85/Rev. 1, February 1979 (referred to below as MPSS).

efficiency as producers, or with the impact of their special privileges on the private sector. These are different kinds of questions, and different kinds of statistics are needed to answer them.

However, while it is clear that for most purposes government and public enterprises need to be treated separately, it is also clear that in many countries there is widespread interest in the role of the public sector as employer, producer, spender, saver and borrower. Hitherto, this interest has mainly been a popular one, in the sense that it finds expression in newspaper articles rather than economic journals, but for several current concerns of economic policy, the public sector may well be a more useful concept than its individual components. These concerns include, for example, the role of the public sector as a pace-setter in wage bargaining, the inflationary impact of public sector borrowing, and the extent to which privileged public sector investors may be “crowding out” private investment.

While this paper does not deal directly with issues of this kind it considers two important questions that need to be settled beforehand—namely, how is the public sector to be defined, and what kind of statistics are appropriate for measuring it. The main part of this paper brings together the statistics currently available on the size and growth of public sectors in several industrialized (OECD) countries and in a few developing countries.

## II. DEFINITION OF THE PUBLIC SECTOR

### A. *Definitions in the SNA and MPSS (Manual on Public Sector Statistics)*

According to the SNA the public sector consists of general government, public non-financial corporate (and quasi-corporate) enterprises and public financial institutions. “General government” appears in almost all systems of national accounts and there is broad agreement as to what it consists of. There are also relatively few problems about the definition of public financial institutions, but there are a number of difficulties in deciding what makes a non-financial enterprise “public”.

The SNA<sup>4</sup> states that the distinction between private and public “is based on whether the ownership and/or control of an enterprise rests in the public authorities or private parties”. Two parts of this definition have caused difficulties—does “and/or” mean “and” or “or”, and what constitutes “control” of an enterprise. The MPSS deals with these problems by asserting that to be “public” an enterprise must be both owned *and* controlled by government, and goes on to specify the areas over which government control should extend (notably employment and investment policies) and how that control should be exercised (regularly rather than spasmodically).

The MPSS explains that the purpose of these guidelines is to exclude from the public sector companies that governments have acquired in an accidental fashion—as a result of wars or to avoid catastrophic unemployment, etc. The MPSS public sector is intended to include only enterprises that were acquired by government as a deliberate act of long-term policy, that are expected to

<sup>4</sup>SNA, Paragraph 5.55.

remain in government ownership for a considerable period, and that governments use in implementing their social and economic policies.

### B. *National Definitions of Public Enterprises*

Few countries identify public enterprises separately in their national accounts publications, and those that do so provide little information about the criteria used in deciding whether or not an enterprise is public. From a review of the literature, from discussions at international fora and from correspondence with statistical offices, it appears that considerations of the following kind enter into national definitions of public enterprises:

- (i) *Ownership* is apparently used as the sole criterion in a number of countries—Finland, Panama and Malawi are examples. While generally an unambiguous criterion, difficulties occasionally arise in connection with subsidiaries of publicly-owned enterprises. The United Kingdom treats all subsidiaries of the Public Enterprise Board as private, whereas subsidiaries of all other public enterprises are included in the public sector. Norway, on the other hand, applies a strict ownership criterion where ownership is measured as the product of the public ownership shares of the parent and subsidiary companies. Thus, a subsidiary owned 70 percent by a public corporation that is itself 70 percent owned by government counts as private because 70 percent of 70 percent is less than 50 percent.
- (ii) Some countries, including the United Kingdom and Australia consider the *permanency*, or at least the intended permanency, of government involvement in an enterprise; companies wholly owned and closely controlled by government are not counted as public enterprises if the government intends to return them to the private sector when suitable occasions arise.
- (iii) *Market shares* are also considered in some cases. France, for example, defines a hard-core public enterprise sector consisting of national monopolies or quasi-monopolies (*grandes entreprises nationales*).
- (iv) Some countries apparently refer to the *level of government* involved in the enterprise. For example, enterprises under municipal or local government control are generally excluded from the public enterprise sector in Egypt and Canada.
- (v) Finally, a related criterion of *size* may also be applied. In India only enterprises with more than a certain number of employees are counted as public. The effect of this is to eliminate many local government enterprises.

The variety of criteria that countries use in defining public enterprises inevitably casts doubt on the comparability of the “public sector” data presented in the following sections of this paper. In some cases public enterprises are confined to large state enterprises while sometimes rather broad definitions are used that include even enterprises in which the government ownership share is less than 50 percent. The best that can be claimed is that the data refer to what each country perceives to be a useful public sector concept for its own purposes.

Even assuming that “perceived utility” is indeed a common factor, the element of comparability so imparted to the data is clearly less than would normally be considered acceptable for a cross-country study. But in the absence of internationally agreed standards, it would be unrealistic to expect more.

### III. MEASURING THE PUBLIC SECTOR

The SNA<sup>5</sup> contains a set of production, income and outlay and capital finance accounts for the public sector. The income and outlay and capital finance accounts are to be prepared on a consolidated basis—i.e. the transactions between public enterprises and general government are to be eliminated. To date, however, no country appears ever to have compiled the accounts suggested in SNA, and the Manual on Public Sector Statistics<sup>6</sup> makes rather less ambitious proposals. The MPSS emphasizes the need for a full set of accounts and supporting tables for each *separate* component of the public sector without suggesting any consolidation of transactions between government and public enterprises. The MPSS notes, however, that certain flows can be obtained for the public sector as a whole by *addition* as opposed to *consolidation*, and suggests that it is these flows that are likely to be of main interest. The flows concerned are value-added, compensation of employees, employment, capital formation, saving, and net lending.

In practice, however, these measures have rarely been used in studies of the size and growth of the public sector. As mentioned above, earlier studies have mostly been dealing with either general government or public enterprises. In studies covering only general government, the most common measure has been current disbursements,<sup>7</sup> total expenditure (current and capital) and tax receipts.<sup>8</sup> These measures of the size of government are commonly presented as share of GDP—an unfortunate practice since it erroneously implies that the aggregates are components of GDP. Studies concerning the economic weight of public enterprises have used employment, investment, turnover, and value added.<sup>9</sup> Only a few studies have so far been made of the total public sector and these have all used public sector employment as a measure of its size and growth.<sup>10</sup>

Ideally, this note would have presented estimates of size and growth of the public sector based on all the flows recommended by MPSS. In practice it is, however, difficult at present to find comparable information on compensation of employees for both public enterprises and general government, and public sector savings have also been omitted from the study because data on savings

<sup>5</sup>SNA, Chapter IX.

<sup>6</sup>MPSS, para. 2.6.

<sup>7</sup>Beck, M., *Public Sector Growth: A Real Perspective*, in Public Finance, No. 3, 1979.

<sup>8</sup>OECD, *Public Expenditure Trends*, Paris, 1978.

<sup>9</sup>*L'Entreprise Publique dans la Communauté Economique Européenne*, Annales du CEEP, 1978. François-Mersal, Fr., *Mort ou résurrection des nationalisations* in L'Expansion, February, 1973. Taron, P., *RFA: Le poids des entreprises publiques*, in “Le moniteur du commerce international”, 20 March 1978.

<sup>10</sup>Semple, M., *Employment in the Public and Private Sector*, in Economic Trends, November 1979, London. Martin, John P. *Public Sector Employment Trends in Western Industrialised Countries* in R. H. Haveman (ed.) “Public Finance and Public Employment”, Wayne State University Press, (forthcoming 1982).

of government and public enterprises are not reported on the same basis in all the statistical sources used in this study. On the other hand, an additional measure is introduced—*public sector final demand* consisting of government final consumption expenditure plus gross capital formation of government and public enterprises.

#### IV. SIZE AND GROWTH OF THE PUBLIC SECTOR: OECD COUNTRIES

##### A. *Statistical Sources*

This part of the paper contains statistics on the size and growth of the public sector in OECD countries. Although OECD countries are much richer in economic statistics of all kinds than the developing countries considered in the next section, statistics on all the flows mentioned above are only available for three OECD countries—Australia, France, and the United Kingdom. Nevertheless, using various national and international sources it has been possible to include between 6 and 16 countries in tables showing final demand shares, employment, value added, and net lending. It has only been possible to achieve such a broad coverage by accepting lower standards of comparability than are usual in cross-country studies. Apart from the differences in definitions of public enterprises noted above, some additional problems are that sometimes statistics for “general government” have had to be approximated by data referring to the narrower concept “producers of government services”, gross capital formation sometimes excludes changes in stocks and in a few cases the employment data refer to “full-time equivalents” rather than to the commoner “average number of employees”.

The estimates are mainly based on national accounts data, either from country replies to the joint OECD-UN National Accounts Questionnaire or from national publications. The national accounts data have been supplemented by information from OECD Financial Statistics<sup>11</sup> and from the publications of the Centre Européen de l'Entreprise Publique (CEEP) in Brussels.<sup>12</sup> The employment data are based on a variety of sources available at the OECD. The basic series on gross capital formation in constant prices are in most cases the authors' own estimates, although components already existing in constant prices have been used as far as possible. The Annex “Country Notes” gives the sources and the coverage of the sectors and flows as far as it has been possible to establish it.

All the growth rates shown in this paper are exponential rates ( $r$ ) obtained from the least-squares solution of  $x_t = x_0(1+r)^t$ , where  $x$  is the share of the public sector, government, or public enterprises in a given aggregate, or the absolute value. These rates were preferred to the more usual geometric means

<sup>11</sup>OECD Financial Statistics, 13 Tome I 1979 and supplement 13D, 1980.

<sup>12</sup>CEEP is a multinational association representing public enterprises in the European Communities. It is recognised by the European Commission as one of the representatives of employers and labour on the same basis as the organisations representing private industry, agriculture and workers. The following publications have been used: *Evolution des entreprises publiques dans L'Europe des neuf*, Brussels, 1973 *L'impact économique actuel des entreprises publiques dans La Communauté Européenne*, Brussels, 1975. *L'entreprise publique dans la Communauté Economique Européenne*, Brussels, 1978. *L'entreprise publique dans la Communauté Economiques Européenne*, Brussels, 1981.

because they give equal weight to all observations—an important consideration in studying periods of uneven growth such as the 1970s.

### B. *Final demand*

Public sector final demand shows the part of GDP absorbed by the public sector either as government consumption or as gross capital formation. The shares in GDP in current prices and their growth rates are presented in Tables 1A to 1D. The public sector final demand share in GDP has been increasing since 1960 in the four countries whose series go back that far (cf. Table 1A). Judging by the components consumption expenditure and gross capital formation of general government (Tables 1B and C) the same development has probably taken place also in the other countries. The highest public demand share is found in Sweden—about 35 percent of GDP during the second half of the 1970s. The lowest shares during the same period, under or around 20 percent, are recorded for Japan, France and Portugal.

Government consumption expenditure accounts for the largest part of the final demand share, between 65 and 75 percent in most countries. In Japan, however, it represents only about 50 percent while in the United States it constitutes more than 85 percent of public final demand. Compared with GDP the government consumption expenditure goes from 10 percent (Japan) to 27 percent (Sweden).

Gross capital formation (GCF) of the public sector represents in general less than 10 percent of GDP, with mostly a somewhat higher share for general government than for public enterprises (cf. Tables 1C and 1D). The lowest average share of government GCF is recorded in the United States—about 2 percent, while in Japan, Austria and Sweden it accounts for more than 5 percent of GDP at the beginning of the 1970s. The GCF of public enterprises accounts for less than 1 percent of GDP (United States) and about 5 percent in Austria and Norway. The commonest share lies between 3 and 4 percent.

During the first half of the 1970s public sector shares in final demand were growing in almost all countries, but since 1975 the shares have fallen or risen more slowly in all countries except Sweden.

Government consumption expenditure is of course the largest component of public sector final demand. During the 1970s as a whole government consumption grew as a share of GDP in all countries except the United States. The growth was uneven however with most occurring between 1970 and 1975. Since then shares fell in most countries and grew more slowly in most of the others.

As regards investment, in the majority of countries general government gross capital formation has been growing less rapidly than GDP over the decade as a whole (i.e. the shares fell). Capital formation by public enterprises on the other hand has generally been growing faster than GDP, and in Canada and Norway the rapid growth of public enterprise investment had a noticeable impact on final demand shares for the public sector as a whole. Dividing up the 1970s shows the expected tendency for slower growth or faster decline after 1975; the only exceptions are Japan and Sweden where the shares of government capital formation in GDP grew faster after 1975, and France where the shares for public

TABLE 1  
PUBLIC SECTOR SHARE IN FINAL DEMAND—CURRENT PRICES  
A. Total Public Sector Demand

	Shares				Growth Rate of Shares		
	1960	1965	1970-74	1975-78/79	1970-75	1975-78/79	1970-78/79
Canada	—	—	25.1	26.9	+1.3	-1.3	+0.9
United States	20.1	20.7	21.7	21.3	-0.4	-2.5	-0.7
Japan	—	17.8	17.1	19.4	+4.2	+1.2	+2.7
Australia	18.3	21.5	22.0	24.9	+3.4	-0.0	+2.6
Austria	—	—	25.2	27.9	+2.9	+0.8	+2.3
Belgium	—	—	20.8	23.6	+2.7	+0.1	+2.1
Finland	—	—	23.0 <sup>a</sup>	—	+3.1	—	—
France	—	—	18.8	20.4	+0.8	+0.2	+1.2
Germany	—	—	25.2	26.3	+3.0	-1.7	+0.8
Ireland	—	—	22.3	26.2	+5.1	-1.4	+3.3
Italy	—	—	21.9	22.1	+1.2	-0.6	+0.2
Netherlands	—	—	24.4	24.9	-0.3	-1.1	-0.1
Norway	—	—	27.1	31.1	+2.8	+1.1	+2.6
Portugal	14.4	16.3	18.2 <sup>a</sup>	—	+1.5	—	—
Sweden	—	27.2	32.3	34.4	-0.8	+4.0	+1.3
United Kingdom	22.8	24.7	26.5	28.0	+3.9	-5.0	+0.5

<sup>a</sup>1970-75.

B. Government Consumption Expenditure

	Shares				Growth Rate of Shares		
	1960	1965	1970-74	1975-78/79	1970-75	1975-78/79	1970-78/79
Canada	13.6	14.9	19.1	19.9	+0.2	-0.6	+0.6
United States	17.2	17.0	18.6	18.5	-0.1	-1.4	-0.4
Japan	8.2	8.5	8.2	9.9	+5.6	-0.6	+3.4
Australia	9.7	11.5	13.2	16.3	+5.0	+1.1	+3.9
Austria	—	12.5	15.1	17.8	+3.0	+1.5	+3.0
Belgium	—	13.1	14.5	17.1	+3.3	+0.2	+2.7
Finland	11.9	13.8	15.3	18.4	+2.5	+1.2	+3.1
France	13.0	13.1	13.4	14.9	+1.2	+0.9	+1.6
Germany	13.5	15.3	17.6	20.1	+5.3	-1.1	+2.5
Ireland	—	13.6	15.6	18.7	+4.8	+1.0	+3.4
Italy	—	15.6	15.2	15.5	+1.3	+1.5	+0.7
Netherlands	13.4	15.5	16.6	18.3	+1.7	+0.9	+1.7
Norway	12.3	15.0	17.8	19.9	+2.1	+0.6	+1.9
Portugal	10.9	12.3	13.9	14.5	+1.5	-2.3	+0.5
Sweden	15.8	17.6	22.6	26.6	+1.6	+5.8	+3.2
United Kingdom	16.5	16.8	18.5	21.0	+4.3	-2.4	+1.9

TABLE 1 (continued)  
PUBLIC SECTOR SHARE IN FINAL DEMAND—CURRENT PRICES  
C. Gross Capital Formation of General Government

	Shares				Growth Rate of Shares		
	1960	1965	1970-74	1975-78/79	1970-75	1975-78/79	1970-78/79
Canada	3.9	4.3	3.7	3.3	-0.2	-5.9	-3.0
United States	2.5	3.0	2.4	1.9	-3.2	-11.4	-5.7
Japan	—	4.8	5.2	5.7	+2.8	+5.7	+2.8
Australia	3.9	4.6	4.0	4.2	+2.9	-6.4	+2.3
Austria	—	4.7	5.1	4.9	+2.4	-3.5	-0.4
Belgium	—	2.5	3.6	3.2	-3.5	-0.4	-2.0
Finland	—	—	3.8	3.8	+2.1	-4.1	-0.4
France	—	4.1	3.6	3.2	-1.0	-6.5	-2.9
Germany	3.1	4.3	4.0	3.4	-3.0	-1.4	-2.9
Ireland	—	—	4.0	4.2	+6.3	-2.6	+1.5
Italy	—	—	2.8	3.3	+2.1	-3.8	+1.7
Netherlands	4.0	4.7	4.1	3.6	-3.0	-6.4	-3.6
Norway	—	—	4.7	4.8	+0.5	-1.6	+0.0
Portugal	2.5	2.7	2.3	2.9 <sup>a</sup>	+0.7	—	+3.3 <sup>b</sup>
Sweden	—	5.6	5.6	4.4	-8.2	+1.4	-4.3
United Kingdom	3.3	4.3	4.9	3.6	+1.3	-15.1	-6.4

<sup>a</sup>1975-76

<sup>b</sup>1970-76

D. Gross Capital Formation of Public Enterprises

	Shares				Growth Rate of Shares		
	1960	1965	1970-74	1975-78/79	1970-75	1975-78/79	1970-78/79
Canada	—	—	2.5	3.7	+10.6	-1.8	+6.5
United States	0.8	0.7	0.7	0.9	+2.5	+1.1	+4.7
Japan	—	4.5	3.7	3.8	+2.7	-0.5	+0.9
Australia	4.7	5.5	4.7	4.5	-0.1	-1.4	-0.8
Austria	—	—	5.0	5.3	+2.9	-0.4	+1.2
Belgium	—	—	2.7	3.3	+6.9	+0.0	+3.8
Finland	—	—	3.4 <sup>a</sup>	—	+8.0	—	—
France	—	—	1.9	2.5	+1.9	+5.0	+4.7
Germany	—	—	3.5	2.7	-1.0	-7.0	-4.8
Ireland	—	—	2.7	3.6	+5.7	+2.5	+5.7
Italy	—	—	3.9	3.3	0.0	-7.1	-3.3
Netherlands	—	—	3.5	2.9	-4.3	-7.6	-4.6
Norway	—	—	4.5	6.5	+8.3	+4.4	+7.3
Portugal	0.9	1.3	1.7 <sup>a</sup>	—	+4.7	—	—
Sweden	—	4.0	4.1	3.5	-3.9	-0.3	-2.9
United Kingdom	3.0	3.6	3.1	3.5	+4.0	-9.4	+0.3

<sup>a</sup>1970-75



enterprise capital formation grew substantially faster towards the end of the decade.

Table 2 shows the growth rates of public sector final demand and its components in constant prices. These growth rates refer to their absolute values, not to shares in GDP. The table confirms the pattern noted above of slower growth in the public sector final demand after 1975. Perhaps the main interest of the table is that it identifies the countries where public final demand has fallen in absolute (real) terms rather than only as shares in GDP. For the periods shown in the table, real public sector demand has fallen in only one country—the United Kingdom. Government consumption expenditure in real terms grew in all countries throughout the period. Real gross capital formation by the public sector however declined in several countries. These declines were particularly marked for government capital formation; public enterprise investment has continued to rise throughout the 1970s in most countries.

### C. *Value Added*

It has been possible to make estimates of public sector contributions to GDP in current prices for six countries although some of the estimates are only approximations. The shares shown in Table 3 are given only as an illustrative example. They cannot be considered comparable. They are based on factor cost for Australia, Germany and the United Kingdom, and on market prices for the remaining countries. Producers of government services have been used as a proxy for general government except for Australia, France and the United Kingdom which in principle means an underestimation of general government. The data for Australia, France and the United Kingdom are based entirely on the countries' own national accounts.

The total contribution to GDP by the public sector was on average about 25 percent in Australia and between 25 and 30 percent in the United Kingdom. The public enterprises represented about 40 percent of public sector value added in these two countries. In the case of France a wider concept of public enterprises, namely all enterprises owned by government instead of "les grandes entreprises nationales" used here, would double the public enterprise contribution to GDP. In Australia the general government share has been growing faster than the public enterprise share while the opposite seems to have occurred in the United Kingdom. The exceptionally high contribution to GDP by public enterprises in Austria, almost 20 percent, is probably partly due to overestimation of value added of financial enterprises.<sup>13</sup>

### D. *Employment*

The data presented in Table 4 on public sector employment are, in many cases, based on production sectors rather than institutional sectors, or on a mixture of both. In a majority of countries the data for general government refer to producers of government services and so underestimate general

<sup>13</sup>It seems that the CEEP data for Austria correspond more to a service charge concept than value added. Value added per employee was in 1975 almost three times higher in financial enterprises than in non-financial enterprises.

TABLE 2  
GROWTH RATE OF PUBLIC SECTOR FINAL DEMAND—CONSTANT PRICES

	Total Public Sector Demand			Government Consumption Expenditure			Gross Capital Formation					
							General Government			Public Enterprises		
	1970-75	1975-78/9	1970-78/9	1970-75	1975-78/9	1970-78/9	1970-75	1975-78/9	1970-78/9	1970-75	1975-78/9	1970-78/9
Canada	5.3	3.6	4.2	3.9	1.3	2.9	4.4	-3.0	0.8	15.7	1.4	10.5
United States	0.8	1.6	1.2	1.2	2.4	1.7	-2.7	-6.2	-4.1	0.9	1.3	4.2
Japan	5.0	5.2	4.6	5.0	4.3	4.8	6.3	2.7	7.2	6.2	5.6	5.1
Australia	5.3	2.4	4.5	5.8	4.3	5.8	4.5 <sup>a</sup>	-2.0 <sup>a</sup>	2.0 <sup>a</sup>	—	—	—
Austria	4.5	3.3	4.5	4.6	3.4	4.3	6.8	-0.1	3.7	5.7	4.1	4.8
Belgium	4.7	3.8	4.2	5.1	4.3	4.7	-1.5	2.4	0.4	10.4	2.9	6.8
Finland	6.2	—	—	6.2	4.2	5.4	2.5	-0.3	1.1	10.2	—	—
France	2.9	3.4	3.5	2.9	3.3	3.3	1.5	-1.2	0.6	6.0	9.5	8.5
Germany	3.8	1.4	2.4	5.0	2.4	3.7	0.5	1.1	0.2	2.1	-3.8	-1.7
Ireland	7.3	3.4	5.8	8.7	3.9	5.5	9.0	0.4	3.8	7.8	5.6	8.0
Italy	3.0	1.2	2.1	3.8	2.4	3.0	3.8	-0.9	2.8	-0.7	-2.6	-2.5
Netherlands	1.0	1.1	1.4	2.1	3.4	2.8	-3.0	-5.5	-2.9	0.0	-5.0	-1.2
Norway	6.6	5.4	6.4	5.1	4.9	5.3	5.8	2.8	4.6	13.4	9.0	12.3
Portugal	8.2	—	—	9.7	7.4	9.0	1.1	—	3.1 <sup>b</sup>	5.0	—	—
Sweden	1.1	2.8	2.0	2.8	3.4	3.3	-5.0	1.6	-2.1	-1.1	-0.6	-1.1
United Kingdom	3.0	-1.3	1.4	3.8	1.2	2.8	-1.0	-10.3	-5.4	4.4	-6.6	1.8

<sup>a</sup>Including public enterprises.

<sup>b</sup>1970-76.

TABLE 3  
PUBLIC SECTOR CONTRIBUTION TO GDP—CURRENT PRICES

	General Government					Public Enterprises				
	Shares		Growth Rate of Shares			Shares		Growth Rate of Shares		
	1970-74	1975-78/79	1970-75	1975-78/79	1970-78/79	1970-74	1975-78/79	1970-75	1975-78/79	1970-78/79
Australia	13.0 <sup>a</sup>	15.3 <sup>a</sup>	+5.3 <sup>a</sup>	+0.7 <sup>a</sup>	+4.3 <sup>a</sup>	10.7	10.9	-0.7	-0.9	-0.1
Austria	11.3	12.9	+2.1	+1.3	+2.4	19.2	16.8 <sup>b</sup>	-0.1	+0.0 <sup>b</sup>	—
France	10.7	12.2	+1.8	+1.5	+2.3	4.6	4.6	-3.1	+1.3	-0.5
Germany	11.7	13.2	+4.8	-0.8	+2.8	8.6	9.1 <sup>c</sup>	+2.4	—	+2.0 <sup>d</sup>
Italy	11.4	11.5	+0.9	+1.6	+0.4	7.2	7.7	+2.6	-1.4	+1.0
United Kingdom	16.7	17.8	+3.0	-3.1	+0.8	10.2	11.4	+1.8	-0.5	+1.7

<sup>a</sup>Compensation of employees of general government.

<sup>b</sup>1976-79.

<sup>c</sup>1975-76.

<sup>d</sup>1970-76.

TABLE 4  
PUBLIC SECTOR SHARE OF EMPLOYMENT  
A. Total Public Sector

	Shares				Growth Rate of Shares		
	1960	1965	1970-74	1975-78/79	1970-75	1975-78/79	1970-78/79
Canada	—	21.9 <sup>a</sup>	24.3	24.4	+0.4	-1.4	-0.1
United States	17.3	18.3	19.3	18.8	-0.4	-2.3	-0.8
Australia	—	22.7 <sup>a</sup>	23.2	25.5	+1.8	+0.6	+1.6
New Zealand	23.6	23.1	23.1	24.3	+0.4	+0.9	+0.9
Austria	—	—	27.9	30.2	+1.9	+1.0	+1.5
Belgium	—	—	19.5	21.6	+1.8	+2.8	+2.1
Denmark	—	—	—	27.1	—	+1.7	—
France	17.2	16.6	18.5	19.6	+1.3	+0.5	+1.1
Germany	—	—	20.0	22.2	+2.9	+0.7	+2.0
Ireland	—	—	18.0 <sup>b</sup>	19.7	—	+1.4	—
Italy	—	—	17.6	20.3	+4.5	+1.0	+3.0
Luxembourg	—	—	13.5	14.3	-0.1	+2.2	+1.0
Norway	16.9 <sup>c</sup>	17.9	21.7	23.9 <sup>c</sup>	+2.8	+1.7 <sup>c</sup>	+2.5 <sup>d</sup>
Sweden	—	—	30.0	34.5 <sup>c</sup>	+3.8	+3.9 <sup>c</sup>	+3.8 <sup>d</sup>
United Kingdom	23.9 <sup>f</sup>	23.7	27.1	29.6	+1.7	+0.5	+1.5

<sup>a</sup>1966

<sup>b</sup>1971-72

<sup>c</sup>1975-77

<sup>d</sup>1970-77

<sup>e</sup>1962

<sup>f</sup>1961

B. General Government

	Shares				Growth Rate of Shares		
	1960	1965	1970-74	1975-78/79	1970-75	1975-78/79	1970-78/79
Canada	—	17.6 <sup>a</sup>	19.9	19.9	+0.3	-1.5	-0.2
United states	15.7	16.7	17.7	17.2	-0.4	-2.2	-0.8
Australia	—	—	—	—	—	—	—
New Zealand	17.4	17.4	17.8	18.7	+0.4	+1.1	+0.9
Austria	10.8	12.0	15.0	17.8	+3.6	+2.3	+3.3
Belgium	12.2	13.2	14.3	16.3	+1.7	+3.7	+2.6
Denmark	—	13.3	19.1	23.8	+6.3	+1.9	+5.0
France	12.1	11.6	14.0	15.2	+2.0	+0.9	+1.6
Germany	8.0	9.8	12.1	14.3	+4.4	+1.3	+3.2
Ireland	—	—	11.9	14.0	+3.6	+1.6	+3.0
Italy	8.1	9.9	12.0	13.9	+4.2	+1.9	+3.3
Luxembourg	—	—	9.6	10.6	+0.7	+3.3	+1.8
Norway	12.7 <sup>b</sup>	13.8	17.6	20.0	+3.3	+2.4	+2.8
Sweden	12.8	15.3	22.8	27.7	+4.2	+4.0	+4.0
United Kingdom	14.9 <sup>c</sup>	15.7	19.1	21.4	+2.7	+0.4	+2.0

<sup>a</sup>1966

<sup>b</sup>1962

<sup>c</sup>1961

TABLE 4 (continued)  
PUBLIC SECTOR SHARE OF EMPLOYMENT  
C. Public Enterprises

	Shares				Growth Rate of Shares		
	1960	1965	1970-74	1975-78/79	1970-75	1975-78/79	1970-78/79
Canada	—	4.3 <sup>f</sup>	4.4	4.5	+1.0	-1.4	+0.3
United States	1.5	1.6	1.6	1.6	+0.9	-3.1	-0.8
Australia	—	—	—	—	—	—	—
New Zealand	6.2	5.7	5.3	5.6	+0.4	+0.4	+0.8
Austria	—	—	12.9	12.4	-0.1	-1.0	-0.7
Belgium	—	—	5.1	5.2	+1.9	-0.4	+0.5
Denmark	—	—	—	3.3	—	+0.0	—
France	5.1	5.0	4.5	4.4	-0.6	-0.7	-0.6
Germany	—	—	7.8	7.9	+0.8	-0.6	+0.0
Ireland	—	—	6.3 <sup>c</sup>	5.7	—	+1.2	—
Italy	—	—	5.6	6.4	+5.3	-0.5	+2.7
Luxembourg	—	—	3.9	3.7	-1.9	0.0	-1.1
Norway	4.2 <sup>e</sup>	4.1	4.1	4.2 <sup>b</sup>	+0.6	+0.0 <sup>b</sup>	+0.6 <sup>d</sup>
Sweden	—	—	7.1	8.0 <sup>b</sup>	+2.5	+3.2 <sup>b</sup>	+2.9 <sup>d</sup>
United Kingdom	9.0 <sup>a</sup>	8.0	7.9	8.2	-0.5	+0.7	+0.4

<sup>a</sup>1961

<sup>b</sup>1975-77

<sup>c</sup>1971-72

<sup>d</sup>1970-77

<sup>e</sup>1962

<sup>f</sup>1966

government employment and it is not clear how far the employees of government unincorporated enterprises (departmental enterprises) are covered by the data on public enterprises. The data for France and the United Kingdom refer, however, to institutional sectors.

Employment is expressed in average number of employees, except Norway, where employment is measured in man-years. The effects which the use of different measures of employment may have on the general government share of employment are illustrated below.

The highest share of public sector employment is recorded in Sweden, about 35 percent after 1975. Luxembourg has the lowest public sector share measured by employment, less than 14 percent. In half of the countries covered by this study, the public sector employed less than 20 percent of the employed population in the beginning of the 1970s. After 1975 the modal share had grown to between 20 and 25 percent.

General government accounts for 70-80 percent of the public sector employment in half of the countries. In the United States it represents almost the whole of the public sector, namely, 92 percent of the public sector employment. Compared with total employment, the number of government employees varies between 10 percent (Luxembourg) and more than 25 percent (Sweden after 1975). The most common share is between 14 and 20 percent.

Public enterprises as they are covered in this paper are responsible for between 3 and 8 percent of total employment in most countries. In the United States the share is as low as 1.5 percent. In Austria, on the other hand, public

enterprises seem to be an unusually important employer. Their employees represent almost 13 percent of total employment. Using a wider concept of public enterprises for France than the “grandes entreprises nationales”, the number of persons employed by public enterprises would increase by 30 percent.

The shares in Table 4 would be representative of public sector shares of total labour input insofar as employment conditions were the same in the public and private sectors—e.g. with regard to part-time employment. In many cases, however, this seems not to be the case. About a third of Sweden’s high share of employees in the public sector consists of part-time employees, while in the private sector part-time workers are only one-sixth of the labour force. In the United States, part-time employees in the public sector accounted for one-seventh of public employment.<sup>14</sup> If data adjusted for part-time employment are used for the United States and Sweden, the level and growth rate of government share in total employment would be as follows:

	Shares		Growth in Shares		
	1970– 74	1975– 78/79	1970– 75	1975– 78/9	1970– 78/9
<i>United States</i>					
Full-time equivalent employees	16.2	16.1	–0.4	–2.5	–0.6
<i>Sweden</i>					
Hours worked	20.3	24.3	+4.0	+3.8	+3.8

These shares are a little more than 1 per cent lower for the United States and about 3 percent lower for Sweden than the shares given in Table 4B. The growth rates are less affected than the shares—by only a downward small adjustment in both cases. Thus, the impression this limited experiment gives is that growth rates of the shares in Table 4 probably are more significant than the shares themselves.

Public sector employment was growing faster than total employment during the first half of the 1970s, in all countries included in Table 4, except in the United States where the public share has been declining since 1970, presumably because of the rundown in armed forces after the Vietnam War. The public employment share continued to grow after 1975 except in Canada. The growth rate of the share was, however, less than before 1975 in a majority of countries. The data on general government employment show similar trends to those on total public employment with, however, higher growth rates in half the number of countries.

The public enterprise share of total employment seems to have been relatively stable in a majority of countries with annual growth rates of  $\pm 1$  percent over the whole period considered. Shifts from positive to negative growth or vice versa have, however, occurred between the first and second half of the decade in 6 out of 12 countries.

<sup>14</sup>OECD, Public Sector Employment Trends, Paris, June 1980, paragraphs 27–28.

The growth of general government employment and of government consumption expenditure are sometimes compared. Such a comparison on the basis of the data for this study shows that government consumption expenditure in constant prices has been growing faster than the number of government employees since 1970 in most countries. Exceptions are Austria, Italy and Sweden.<sup>15</sup> This may mean an increase in either output of government services per employee or in intermediate input per employee.

#### E. *Net lending/borrowing*

The economic significance of net lending by the public sector as a whole partly depends on the extent to which public enterprises are free to raise funds directly on the capital market. Public sector net lending will have a special significance for countries where public enterprises borrow either directly from government or with government guarantees.

Table 5 summarizes the net lending data available for eight countries. In most of these countries the total public sector has been a net borrower since the beginning of the 1970s. The public sector in France, however, had a lending capacity up to 1974 and a few more countries were net lenders for 1 or 2 years during 1970–74. After 1973–74 public sector borrowing has been increasing except in the United States where it has been declining after a peak in 1975. The increase in net borrowing seems to have been especially high in Canada, Japan, and the United Kingdom, representing between 5 and 7½ percent of GDP on average for the period 1975–79. In Japan the public sector borrowing reached 9 percent of GDP in 1978.<sup>16</sup> In some countries one can perhaps detect a tendency to a stabilization of net borrowing after the peak in 1975, but at a level higher than during the first half of the 1970s.

During the first four or five years of the 1970s, the net borrowing of the public sector was mostly caused by the public enterprises; general government had in general a lending capacity during this period (cf. Table 6). In all eight countries public enterprises have been net borrowers during the 1970s. Their net borrowing has been increasing in absolute values in all countries except the Netherlands, and after 1975, the United Kingdom. They have been growing faster than GDP in most cases up to 1975, although there is some evidence that the growth rates stabilized after 1975 in some countries. After 1974, the general government too became a net borrower in these countries, and their net borrowing seems to have been growing faster than that of public enterprises except in the United States.

#### F. *Some Concluding Remarks*

To the question “How big is the public sector?” rather different answers can be provided depending first on whether “public sector” is taken to mean just government or to include public enterprises as well, and secondly, on the particular measure of size selected. The following examples illustrate this:

<sup>15</sup>If hours worked are used instead of number of employees for Sweden, the growth rates of government employment and consumption expenditure would be almost the same.

<sup>16</sup>The borrowing requirements for Japan may be somewhat overestimated because public enterprise net borrowing is not adjusted for capital transfers.

TABLE 5  
PUBLIC SECTOR NET LENDING (+) OR NET BORROWING (-)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
<i>A. Absolute values</i>										
Canada	-379	-1,171	-1,415	-1,073	-327	-9,740	-8,699	-11,210	-13,552	-11,051
United States	-9,614	-18,637	-3,410	-8,384	-626	-65,103	-34,506	-18,927	232	—
Japan	-270	-987	-2,460	-2,042	-3,859	-9,834	-11,772	-12,680	-18,350	-15,391
Australia	-332	-384	-711	-566	-2,638	-2,962	-3,142	—	—	—
France	4,008	2,698	1,976	4,931	-4,179	-51,546	-26,800	-38,465	-66,995	-53,716
Netherlands	-3,523	3,630	-2,190	720	-690	-6,370	-6,700	-4,000	-7,160	—
Portugal	4,429	3,738	-95	2,067	-8,264	-20,664	—	—	—	—
United Kingdom	681	-300	-1,547	-2,764	-4,695	-7,505	-8,413	-5,865	-8,048	-8,308
<i>B. As percentage of GDP</i>										
Canada	-0.44	-1.23	-1.33	-0.86	-0.22	-5.84	-4.51	-5.29	-5.80	-4.16
United States	-0.98	-1.76	-0.29	+0.64	-0.04	-4.26	-2.04	-1.00	+0.01	—
Japan	-0.37	-1.22	-2.67	-1.82	-2.88	-6.64	-7.10	-6.87	-9.06	-7.03
Australia	-0.93	-1.02	-1.67	-1.11	-4.31	-4.10	-3.80	—	—	—
France	+0.51	+0.31	+0.20	+0.44	-0.33	-3.55	-1.60	-2.05	-3.14	-2.21
Netherlands	-3.07	+2.80	-1.49	+0.43	-0.36	-3.04	-2.79	-1.53	-2.39	—
Portugal	+2.50	+1.88	-0.04	+0.73	-2.44	-5.49	—	—	—	—
United Kingdom	+1.34	-0.53	-2.45	-3.80	-5.68	-7.21	-6.78	-4.11	-4.92	-4.39



TABLE 6  
PUBLIC ENTERPRISE AND GENERAL GOVERNMENT NET LENDING (+) OR NET BORROWING (-) AS PERCENTAGE OF GDP

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
<i>Public Enterprises</i>										
Canada	-1.37	-1.36	-1.41	-1.87	-2.10	-3.41	-2.84	-2.74	-2.76	-2.45
United States	-0.45	-0.54	-0.40	-0.38	-0.55	-0.74	-0.54	-0.75	-0.54	—
Japan	-2.19	-2.52	-2.82	-2.60	-3.24	-3.87	-3.33	-3.13	-3.13	-2.72
Australia	-3.16	-3.26	-2.54	-2.88	-3.87	-2.76	-2.84	—	—	—
France	-0.40	-0.43	-0.58	-0.50	-0.95	-1.31	-1.11	-1.24	-1.35	-1.38
Netherlands	-2.27	-2.31	-1.47	-0.68	-0.27	-0.35	-0.43	-0.10	-0.35	—
Portugal	-0.26	-0.25	-0.74	-0.67	-0.82	+0.04	—	—	—	—
United Kingdom	-1.13	-1.90	-0.62	-0.33	-1.85	-2.46	-1.81	-0.68	-0.62	-1.12
<i>General Government</i>										
Canada	+0.93	+0.14	+0.08	+1.01	+1.88	-2.43	-1.67	-2.56	-3.04	-1.71
United States	-0.53	-1.22	+0.11	+1.02	+0.51	-3.52	-1.50	-0.25	+0.55	—
Japan	+1.82	+1.30	+0.15	+0.74	+0.37	-2.78	-3.77	-3.75	-5.93	-4.30
Australia	+2.23	+2.24	+0.87	+1.77	-0.44	-1.34	-0.96	—	—	—
France	+0.91	+0.74	-0.78	+0.94	+0.62	-2.24	-0.48	-0.80	-1.79	-0.83
Netherlands	-0.08	+5.11	-0.02	+1.11	-0.09	-2.69	-2.36	-1.43	-2.04	—
Portugal	+2.76	+2.13	+0.70	+1.40	-1.62	-5.53	—	—	—	—
United Kingdom	+2.47	+1.38	-1.83	-3.61	-3.83	-4.74	-4.97	-3.43	-4.29	-3.27

\* The United States has a "medium sized" public sector when measured by government consumption expenditure or government employment, but one of the smallest if one uses total public sector final demand or total public sector employment.

\* Measured by final demand shares Norway has the second largest public sector, but its employment share puts it in the middle range of countries.

The use of only one measure limited to one part of the public sector as well as the way in which it is used may also give an incomplete picture of the growth of the public sector. The data presented here show, for example, that government consumption expenditure has been growing faster than government employment in absolute terms in most countries. On the other hand, the share of government consumption expenditure in GDP has in general shown a lower growth rate than the government share of total employment. To limit the measurement of public sector growth to government consumption expenditure instead of using total public sector final demand would under- or over-estimate the growth depending on the country. In Norway, for example, the growth of the public sector is due more to public sector gross capital formation than to consumption expenditure, while in Sweden the opposite is true. The general impression, however, which both public final demand and employment give is that the growth of the public sector has slowed down since 1975 in most countries. The final demand share even started to decline in many countries, and, in a few cases, this decline had already begun before 1975.

As regards net lending, the inclusion of public enterprises gives a different picture of public sector net borrowing. While public enterprises made the public sector into a net borrower at the beginning of the 1970s, the increase in the net borrowing after 1973-74 was mostly due to general government, especially central government.

#### V. SIZE AND GROWTH OF THE PUBLIC SECTOR: DEVELOPING COUNTRIES

For developing countries the definitional problems of measuring the public sector are compounded—or in a sense simplified—by an almost total lack of statistics. Information available to the authors indicate that India, Taiwan and the United Republic of Tanzania are the only developing countries that distinguish public enterprises separately in their own national accounts publications. A further four however provide sufficient data in the U.N. national accounts questionnaire to calculate public sector final demand. The shares and growth rates are shown in Table 7.

In general the final demand shares for the developing countries in Table 7 are similar to those calculated for the OECD countries in Table 1 above. For the total public sector, the Philippine share is substantially below average for all years covered, but the shares for the other six all fall inside the OECD range. As regards the individual components the shares are again similar to OECD countries except for gross capital formation of public enterprises which is substantially higher in all countries except the Philippines. The growth rates of the shares are generally larger than for OECD countries and more volatile—

mainly because they are calculated from lower base values. The growth rates show a tendency for lower growth in final demand shares after 1975, reflecting the world-wide nature of the 1974 oil shock.

The only other data available on public sectors in developing countries comes from the I.M.F. *Government Finance Statistics Yearbook*. Although the statistics in this publication refer only to central government, each country section contains lists of the various bodies included in the "public sector" as a whole. Public enterprises are separately listed and Table 8 below shows the distribution of 40 countries—20 OECD and 20 developing countries—according to the number of public non-financial enterprises reported to the IMF for the 1980 Yearbook.

The table tends to confirm that in developing countries public enterprises play a somewhat larger role in the economy than in developed countries. Developing countries (underlined in Table 8) are more likely to appear in the lower half than the upper half of the table, and the 20 developing countries reported an average of about 70 public enterprises each compared to under 40 per OECD country. Information in the I.M.F. publication can also be used to (roughly) determine the kinds of activities of public non-financial enterprises. The main differences between developing and OECD countries are that in developing countries a larger proportion of public enterprises are engaged in manufacturing—34 percent against 23 percent—while in the OECD countries a larger proportion are in transport and communication—30 percent against 17 percent. The explanation appears fairly obvious. Almost by definition developing countries are short on indigenous entrepreneurial skills, and so governments have sought to fill the gap by setting up public enterprises, notably in food processing, beer and spirits, textiles and clothing, building materials and other light manufacturing. The larger share of OECD public enterprises in transport activities is explained by greater government involvement in railways and intra-urban transport. Most developing countries missed out on the 19th century railway boom and so have inherited fewer railway systems needing government support. As regards intra-urban transport this seems to be provided by private enterprises in most developing countries—mammy-wagons, taxis, pedicabs, etc.

## VI. SUMMARY

The public sector is defined here to include government plus public enterprises—both financial and non-financial. Historically, statisticians and economists have been more concerned with its separate components than with the public sector as a whole but it is suggested that the public sector may be an appropriate concept for studying several current problems of economic policy. These include the public sector's role in national wage bargaining, the impact of public sector deficits, and public sector "crowding out" of business investments.

The most difficult aspect of defining the public sector is deciding what makes an enterprise "public". The present SNA definition is somewhat ambiguous and although the draft U.N. Manual on Public Sector Statistics (MPSS) provides clearer guidelines, its recommendations have not yet been implemented by many

TABLE 7  
PUBLIC SECTOR FINAL DEMAND SHARES IN SEVEN DEVELOPING COUNTRIES

	Shares										Average Shares		Growth Rates of Shares		
	1965	1970	1971	1972	1973	1974	1975	1976	1977	1978	1970-74	1975-78	1970-75	1975-78	1970-78
<i>India</i>															
GCF: Public enterprises	7	5	6	6	6	6	9	9	7	—	6	8	8.2	-6.8	6.9
Government	2	1	2	2	2	2	2	2	2	—	2	2	9.0	-3.2	5.8
Government consumption	10	9	10	10	9	9	10	10	10	—	9	10	0.3	—	0.9
Total Public Sector	19	15	18	18	17	17	21	21	19	—	17	20	1.6	-4.2	1.9
<i>Kenya</i>															
GCF: Public enterprises	—	—	—	4	5	5	5	5	4	7	5	5	6.9	16.4	4.5
Government	—	—	—	4	4	4	3	4	2	3	4	3	6.8	-13.8	-9.1
Government consumption	—	—	—	18	17	17	18	17	17	19	17	18	—	6.0	0.6
Total Public Sector	—	—	—	26	26	26	26	26	24	29	26	26	0.3	4.5	0.7
<i>Panama</i>															
GCF: Public enterprises	1	1	2	7	4	3	10	12	11	—	3	11	38.0	4.9	35.8
Government	2	3	4	5	3	5	6	5	5	—	4	5	9.8	-9.8	7.2
Government consumption	11	14	14	15	15	14	16	16	16	—	14	16	1.0	3.4	2.1
Total Public Sector	14	18	21	26	22	22	31	33	32	—	22	32	8.1	1.8	8.5

<i>Philippines</i>															
GCF: Public enterprises	—	—	—	2	2	2	3	4	3	3	1	3	83.5	-2.7	40.2
Government	2	1	1	2	2	3	4	4	4	4	2	4	36.0	-0.8	23.4
Government consumption	9	8	9	9	9	9	10	10	10	10	9	10	4.1	0.6	2.9
Total Public Sector	11	9	10	13	14	14	18	18	17	17	12	17	14.0	-1.8	8.4
<i>Taiwan</i>															
GCF: Public enterprises	4	8	7	7	7	9	9	11	8	8	7	9	4.0	-13.2	2.7
Government	1	3	3	2	2	3	4	3	5	4	3	4	4.1	7.0	16.0
Government consumption	17	15	18	17	15	15	17	17	17	17	16	17	-6.2	0.4	2.9
Total Public Sector	22	26	28	26	24	26	30	30	30	29	26	30	1.2	-1.3	1.9
<i>South Africa</i>															
GCF: Public enterprises	7	8	9	9	8	9	11	12	11	10	9	11	4.7	-4.6	4.1
Government	4	4	5	5	4	4	5	5	4	4	4	5	9.6	-12.1	10.2
Government consumption	11	12	13	12	12	12	14	15	15	14	12	14	1.6	0.4	2.7
Total Public Sector	22	23	27	16	23	25	30	31	30	27	25	30	2.8	-3.2	2.7
<i>Tanzania</i>															
GCF: Public enterprises	1	7	12	11	9	7	7	5	5	—	9	6	-5.3	-12.6	-8.3
Government	3	5	4	4	4	4	3	3	3	—	4	3	-6.1	3.2	-8.1
Government consumption	10	13	14	13	15	16	17	17	15	—	14	16	5.2	-6.1	3.5
Total Public Sector	14	25	30	28	28	27	27	25	23	—	27	25	0.2	-8.4	-1.8

TABLE 8  
NUMBER OF PUBLIC NON-FINANCIAL ENTERPRISES AS REPORTED TO THE  
INTERNATIONAL MONETARY FUND IN 1980: 40 COUNTRIES

No. of Enterprises	Countries	No. of Countries
1 to 10	France, Italy, Luxembourg,	3
11 to 20	United States, Belgium, Netherlands, Malaysia, Malawi,	5
21 to 30	Canada, New Zealand, Finland, Ireland, Argentina, Colombia, Cameroon, Ghana, Korea, Philippines,	10
31 to 40	Japan, Denmark, Greece, United Kingdom, Benin, Singapore	6
41 to 50	Germany, Norway, Senegal, Sudan	4
51 to 100	Austria, Sweden, Brazil, Egypt, Ethiopia, Kenya	6
101 or more	Portugal, Spain, India, Iran, Mexico, Tanzania	6
		40

*Source: Government Finance Statistics Yearbook, 1980, International Monetary Fund, Washington, D.C. 1980*

countries. Some countries apparently define public enterprises solely on the basis of ownership, while others use ownership plus some other criterion such as the degree of monopoly power or the circumstances in which the enterprise came under public ownership. The variation in country definitions of public enterprises is identified as one of the main problems in making international comparisons for the public sector.

The SNA suggests that countries should prepare *consolidated* accounts for the public sector but so far as is known, no country has ever attempted to do this. The MPSS rejects consolidation and suggests that the size and growth of the public sector can be adequately measured by certain aggregates that can be added to give meaningful totals without having to eliminate intra-sectoral transactions. In this paper the following measures are used: public sector final demand, value added, employment and net lending. Because of the lack of comparable data for a sufficient number of countries, it was not possible to show data on two other measures proposed in the MPSS—compensation of employees and saving.

Public sector *final demand* is the sum of government consumption expenditure plus gross capital formation by government and public enterprises. In OECD countries, public sector final demand appears to have been rising more rapidly than GDP in most countries since 1960, and by the end of the 1970s public sector final demand accounted for between a fifth (Japan and France) and a third (Sweden) of GDP. Government final consumption expenditure generally accounts for between two-thirds and three-quarters of total public sector final demand with government capital formation the next largest component. In general, the growth of public sector final demand shares has been levelling off since 1975 in OECD countries, and there have been actual declines in several countries. This was due mainly to slower growth or declines in gross capital formation, especially of general government.

Data on public sector *value added* are available for six OECD countries although there are known to be several problems of comparability. In four countries the public sector contributed between 20 to 25 percent of total value added during the 1970s; in Austria and the United Kingdom it was around 30 percent.

Data on public sector *employment* have been assembled for 15 OECD countries although there are again some doubts about comparability. Public sector shares in total employment have been rising throughout the period for all countries except the United States and Canada. By the end of the 1970s at least one employee in every five was working in the public sector in 13 of the 15 countries covered, and in Sweden, the United Kingdom and probably Austria, the ratio was nearer one in three. The growth in public sector employment shares appears to have slowed down somewhat since 1975, mainly as a result of slower growth in general government employment which typically accounts for well over 70 percent of public sector employment.

Statistics of public sector *net lending* are available for eight OECD countries for the period 1970 to 1978. In a few instances, public sectors were net lenders prior to 1975, but for most of this period and for all years since then they have been net borrowers. General government was usually a net lender up to 1974, but became a consistent net borrower after that; public enterprises were net borrowers throughout the 1970s.

In concluding the discussion of OECD countries, it is pointed out that there is rarely a unique answer to the question "How big is the public sector?". For most countries judicious selection of measures and careful definition of the public sector will produce very different conclusions about the size and growth of the public sector.

Because of the lack of data it is not possible to analyse public sectors of developing countries in the same detail as OECD countries, and of the 4 measures discussed above, *final demand shares* is the only one for which data are available for a reasonable number of countries. Developing countries are a much less homogeneous group than OECD countries, so that generalizations are clearly more dangerous. The evidence suggests, however, that while public sectors as a whole are about the same size in developing and OECD countries, public enterprises play a more important role. During the 1970s the shares of gross capital formation by public enterprises were generally higher and growing more rapidly compared with OECD countries. Statistics on the numbers of public non-financial enterprises in 40 countries shows that there are more of them in developing countries; compared with OECD countries they are more often engaged in manufacturing and less common in the transport sector.

## ANNEX: COUNTRY NOTES

When no special source is mentioned, the data are based on *National Accounts of OECD Member Countries* or the *United Nations Yearbook of National Accounts Statistics* for non-OECD countries.

### CANADA

#### *Gross capital formation of public enterprises*

Source: OECD Financial Statistics.

Definitions: Gross physical investment.

#### *Public sector employment*

Source: Private correspondence.

Definition: Number of employees.

The data are derived from the labour force surveys and should be considered as only a rough approximation of employment on a national accounts basis.

#### *Net lending of public enterprises*

Source: OECD Financial Statistics.

Definition: Net financial saving minus statistical adjustment item.

### UNITED STATES

#### *Public sector employment*

Source: UN/OECD National Accounts Questionnaire.

Definition: Number of employees. (Data are also available in man-hours or in number of full-time equivalent employees).

### JAPAN

#### *Net lending*

Net borrowing of public enterprises is estimated from national accounts data (saving plus consumption of fixed capital minus gross capital formation). Public enterprises net borrowing estimated in this way gives, together with national accounts data on net lending of general government and the rest of the world, a private sector net lending which corresponds rather well to net lending of private non-financial enterprises and the personal sector according to OECD Financial Statistics.

### AUSTRALIA

#### *Public sector final demand*

Source: Partly *National Accounts of OECD countries*, partly Australian National Accounts: National Income and Expenditure 1978/79.

#### *Value added*

Source: Australian National Accounts: National Income and Expenditure 1977/78.

Definition: Value added at factor cost. Value added of general government includes only compensation of employees.

#### *Public sector employment*

Source: Private correspondence.

Definition: Number of employees.

The data are derived from Civilian Employees and Labour Force Survey.



## **NEW ZEALAND**

### *Public sector employment*

Source: "Public Expenditure and Its Financing, 1950-79", New Zealand Planning Council.

Definition: Number of employees.

Local authority employment in electricity, gas and water (N.Z. Yearbook) have been included in public enterprise employment.

## **AUSTRIA**

### *Gross capital formation of public enterprises*

Source: CEEP publications.<sup>17</sup>

Definition: Gross fixed capital formation.

Coverage: Legally independent enterprises where the public authorities have a majority participation: nationalised enterprises, public utilities and local government enterprises, state enterprises and monopolies. Austrian Central Bank, saving banks, owner-operated enterprises (airports, etc.), radio and television, are also included. The enterprises are found in ISIC branches 1, 3-8.

### *Value added*

Source for public enterprises: CEEP publications.

Definition: Value added at producer prices. It has been assumed that CEEP data are based on this valuation. Value added of financial enterprises seems to refer to a concept comparable to service charge.

Coverage: Same coverage of public enterprises as for GCF. The data for general government refer to producers of government services.

### *Public sector employment*

Source: For general government: Osterreichisches Institut fur Wirtschaftsforschung. For public enterprises: CEEP publications.

Definition: Number of employees (in the case of public enterprises, number of workers).

Coverage: It is unclear if the data for general government refer to producers of government services or general government. Same coverage of public enterprises as for GCF.

## **BELGIUM**

### *Gross capital formation of public enterprises*

Source: CEEP publications

Definition: Gross fixed capital formation.

The data for public sector GFCF in the CEEP publications seem to include, beside public enterprises, also GFCF of public authorities. The public enterprise share has therefore been estimated as total public sector GFCF according to CEEP less general government GFCF according to OECD national accounts. The data for 1970-72 have been adjusted to the level 1973-75. The enterprises are mostly found in ISIC branches 4, 7 and 8.

<sup>17</sup>Evolution des entreprises publiques dans l'Europe des neuf, Brussels, 1973; L'impact économique actuel des entreprises publiques dans la Communauté Européenne, Brussels, 1975; L'entreprises publique dans la Communauté Economique Européenne, Brussels, 1978 and 1981.

### *Public sector employment*

Source: General government: UN/OECD National Accounts Questionnaire.

Public enterprises: CEEP publications

Definition: Number of employees.

Coverage: The general government data refer to producers of government services. The public enterprise data cover ISIC branches 3, 4, 5, 7 and 8. 1970–72 data adjusted to the level of 1973–75.

## **DENMARK**

### *Public sector employment*

Source: Danmarks Statistik.

Definition: Number of employees.

Coverage: Producers of government services is used as proxy for general government. Public enterprises are found in ISIC branches 4 and 7.

## **FINLAND**

### *Gross capital formation*

Source for public enterprises: OECD Financial Statistics.

Definition: Gross physical investment.

Coverage: Central government corporations.

## **FRANCE**

### *Gross capital formation of public enterprises*

Source: OECD Financial Statistics

Definition: Gross physical investment

Coverage: Les Grandes Entreprises Nationales.

### *Value added*

Source: Rapport sur les Comptes de la Nation. Collection C de L'INSEE.

Definition: Value added at producer prices.

Coverage: General government. Les Grandes Entreprises Nationales

### *Public sector employment*

Source: Rapport sur les Comptes de la Nation. Collection C de L'INSEE. Les Grandes Entreprises Nationale, 1959–76, Collections de l'INSEE.

Definition: Number of employees

Coverage: General government and Les Grandes Entreprises Nationales.

### *Net lending of public enterprises*

Source: OECD Financial Statistics. The data equals data in French national accounts.

Definition: Net financial saving minus statistical adjustment item.

Coverage: Les grandes entreprises nationales.

## **GERMANY**

### *Gross capital formation of public enterprises*

Source: CEEP publications

Definition: Gross fixed capital formation.

Coverage: Enterprises where the government participation is more than 50 percent (nominal capital or voting rights), and whose balance sheet total is more

than 75 million DM, owner-operated enterprises, banks and insurance companies irrespective of legal form, Deutsche Bundesbahn, Deutsche Bundespost and Volkswagenwerk AG and UEBA AG. (General government participation 40 respectively 43.75 percent). Public enterprises are found in ISIC branches 3, 4, 7 and 8.

*Value added*

Source for public enterprises: CEEP publications

Definition: Value added at factor cost.

Coverage: See gross capital formation with regard to public enterprises. Producers of government services is used as a proxy for general government.

*Public sector employment*

Sources: UN/OECD national accounts questionnaire. CEEP publications

Definition: Number of employees.

Coverage: Producers of government services. See gross capital formation with regard to public enterprises.

## **IRELAND**

*Gross capital formation of public enterprises*

Source: CEEP publications

Definition: Gross fixed capital formation

Coverage: Commercial and some non-commercial state-sponsored bodies. The non-commercial bodies are in the research and development area. The commercial bodies are found in ISIC branches 3, 4, 7 and 8.

*Public sector employment*

Sources: Data for general government: private correspondence.

“An examination of strategies in the public service for adapting to changing patterns of employment.” P. Humphreys, Institute of Public Administration, provided the data on public enterprises defined as “State-sponsored enterprises”.

Definition: Number of employees.

## **ITALY**

*Gross capital formation of public enterprises*

Source: CEEP publications

Definition: Gross fixed capital formation.

Coverage: Any organization which institutionally practises a direct activity in the production and/or in the exchange of goods and services under legal and economic public control. Public enterprises are found in ISIC branches 2–8.

*Value added*

Source: CEEP publications for public enterprises.

Definition: It has been assumed that the CEEP data on gross product refer to value added at producers' prices.

Coverage: Producers of government services. With regard to public enterprises, see gross capital formation.

*Public sector employment*

Source: Data for general government: Private correspondence. Public enterprises are based on CEEP publications

Definition: Number of employees.

## *LUXEMBOURG*

### *Public sector employment*

Source: UN/OECD National Accounts Questionnaire. CEEP publications

Definition: Number of employees.

Coverage: Producers of government services. Public enterprises are found in ISIC branches 4, 7 and 8.

## *NORWAY*

### *Gross capital formation*

Source: Norges Offisielle Statistikk B141 National Accounts 1968–79.

Definition: Gross fixed capital formation of publicly owned industries and producers of government services.

### *Public sector employment*

Source: Private correspondence

Definition: Man-years.

## *PORTUGAL*

### *General government employment*

Source: UN/OECD National Accounts Questionnaire.

Definition: Number of employees of producers of government services.

## *SWEDEN*

### *Gross capital formation*

Source: Statistical Reports N 1980: 4.4, National Accounts 1970–1979.

Definition: Gross fixed capital formation of general government corporate enterprises and central government quasi-corporate enterprises. Gross capital formation of general government.

### *Public sector employment*

Source: Statistical Reports N 1980: 4.4, Appendix 5, Employment 1970–79. National Authorities for public enterprises.

Definition: Number of employees of producers of government services and public enterprises. (Data exist also on hours worked for producers of government services).

## *UNITED KINGDOM*

### *Value added*

Source: National Income and Expenditure.

Definition: Value added at factor cost.

Coverage: General government and Public Corporations.

### *Public sector employment*

Source: National Income and Expenditure and Economic Trends.

Definition: Number of employees.

Coverage: General government and Public Corporations.

## *INDIA*

### *Public sector final demand*

Source: National Accounts Statistics 1970–71 to 1977–78, New Delhi, 1980.

**TAIWAN**

*Public sector final demand*

Source: Statistical Yearbook of the Republic of China, 1980, Taipei 1980.

**UNITED REPUBLIC OF TANZANIA**

*Public sector final demand*

Source: The Economic Survey, 1977-78, Dar-es-Salaam, 1979.