

MEASUREMENT OF THE ROLE OF THE PUBLIC SECTOR IN THE FINNISH ECONOMY

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Following the growth of the public sector traditional measures of the size of the public sector have appeared to be inadequate for policy purposes. In the article the role of the public sector in the Finnish economy is described first by using some traditional methods and indicators. The historical background of the development is briefly discussed. After that some specific problems of the measurement are discussed. These problems include measurement of output and productivity, definition of appropriate balance of the public sector, different measures to describe the size and scope of the public sector, role of tax reliefs and subsidies, different organizational arrangements, public sector regulation etc.

The growth of the public sector takes many different forms and it appears to be more difficult than formerly to obtain a comprehensive picture of the scope of the public sector. For different purposes different indicators have to be used. At the end of the paper the implications of the changing emphasis in the public policy are discussed.

1. INTRODUCTION

This paper analyses the development, scope and statistical measurement of the public sector in the Finnish economy. First a brief summary of the development of the public sector is given. After that some of the methodological and conceptual problems of measurement will be discussed. The changing role of the public sector creates new challenges for its statistical measurement.

2. SOME HISTORICAL BACKGROUND ABOUT THE DEVELOPMENT OF PUBLIC SECTOR

The expansion of the public sector has greatly affected the need to develop the information basis of the public sector for policy purposes. Historically speaking public goods, such as general administration, legislation, law and order and defence, formed the basis of the public sector activity. The liberalist state was most concerned to create favourable preconditions for economic development. During the Second World War—due to the regulation needs created by the war—the public sector expanded rapidly. From 1938 to 1948 the number of employees in the public sector doubled.

After the war there was an urgent need for reconstruction, continuation of some of the regulations created during the war, payment of the war reparations, etc. During the 1950s the controls created during the war were relaxed little by little. Foreign trade was liberalized and the market regulations eased. Problems of economic growth and fluctuations were central in economic policy.

During the 1950s the first signs of the coming welfare state were to appear, but most of the bigger reforms in this area were introduced in the 1960s and at the beginning of the 1970s. The most important reforms concerned education,

pensions, health and general social security. The national pension system had already been introduced in 1938 but its role was still fairly modest. In 1962 extensive reforms were introduced in the form of the workers' pension system. The national sickness insurance system was also established in 1962, and it was complemented by the law of the national health system in 1971.

The general basic education system was created in the second half of the 19th century. Secondary and higher level education started to expand rapidly during the 1950s and the bigger reform in the basic education was introduced in 1972. These are some examples of the expanding role of the public sector services and transfers which reflect ideas of the welfare state during the 1960s and in the first part of the 1970s.

Transfer expenditures have on the average grown somewhat faster than consumption and investment expenditures. Transfers to households have grown particularly fast, whereas the GDP share of subsidies, which we include in transfer expenditures, has declined in long-term perspective, even though in recent years subsidies to the agricultural sector, which have always been relatively important in Finland, have again grown substantially.

Public enterprises and public corporations in Finland are mainly concentrated in some basic industries and areas where the needs for capital formation and therefore also risks have been so large that it has been recognized that it would be difficult to find the requisite private capital for these ventures. Among the public enterprises railways and postal services have traditionally been important. Later the role of public enterprises has been expanded to e.g. automatic data processing for government purposes.

The state owns a majority of shares in around 20 industrial corporations, most of them large. Among corporations there are some in paper and woodworking, basic metals, oil refining and other chemical industries where the role of the public sector has been important. The role of these corporations has been fairly stable in the aggregate over the longer period even though there have been important structural changes in these corporations.

3. THE MOST RECENT DEVELOPMENTS

In the first half of the 1970s the growth in public expenditures was quite rapid. Since the middle of the decade an aim of economic policy has been to limit this growth. To some extent this effort has succeeded, the shares of public consumption and investment expenditures in GDP have declined in the most recent years. But if the growth is measured by the share of labour input, the public sector has still continued its growth.

The issue of various kinds of norms for social regulation and control has historically been an essential element in the activities of the public sector. Recently various types of controls and regulations based on different types of norms have extended notably beyond the more easily quantified service and transfer systems. This control with norms is directed first to the central government itself, its own operations. Secondly it is directed to lower level government entities, like communities. Thirdly the purpose of the norms is to regulate private activity, both of firms and households.

In Table 1 some indicators of the scope of the public sector in Finland for the years 1960–79 have been collected. This is the period for which the calculations according to the new SNA are available. In addition in Table 2 some of the most recent developments are described, showing the results of the efforts to curb the size of the public sector.

Even though all indicators broadly show long-term growth in the size of the public sector, the exact description of the growth of the public sector depends to some extent on the indicator which is chosen. As was mentioned earlier the war period caused a very strong increase in the public sector. This is roughly in

TABLE 1
SOME INDICATORS OF THE SIZE OF THE PUBLIC SECTOR IN FINLAND

	1960	1965	1970 (Percentages)	1975	1979
1. Share of public sector value added of GDP (at factor cost)					
1.1. General government	8.7	10.3	11.7	13.0	14.0
– Central government	3.6	4.1	4.6	4.6	4.4
– Local government	5.1	6.2	7.1	8.5	9.6
1.2. General government and public unincorporated enterprises	14.0	15.3	16.3	17.3	19.1
– Public enterprises	5.3	5.0	4.6	4.3	5.1
2. Share of public sector employment of total employment	7.8	9.3	12.1	14.7	18.0
– Central government	3.5	4.0	5.3	5.5	6.2
– Local government	4.3	5.3	6.8	9.1	11.8
3. Share of public final demand of GDP (at market prices)					
– Public consumption	11.9	13.8	14.7	17.5	18.3
– Public capital formation	4.2	4.8	3.3	3.6	3.1
– Public consumption at fixed prices (1975 prices)	15.1	15.6	15.6	17.5	18.7
4. Current receipts of the public sector as a percentage of GDP (at market prices)	33.3	36.5	37.9	44.6	45.1
– Direct and indirect taxes	23.5	24.8	27.0	29.5	29.6

TABLE 2
THE MOST RECENT DEVELOPMENT OF THE SIZE OF THE PUBLIC SECTOR IN FINLAND

	1975	1976	1977	1978	1979
	(Percentages of GDP)				
1. Exhaustive (consumption and investment) expenditures	13.0	14.1	14.4	14.4	14.0
– Central government	4.5	4.7	4.7	4.6	4.5
– Local government	8.5	9.4	9.7	9.8	9.6
2. Employment	14.7	15.8	16.8	17.8	18.0
3. Current receipts of the public sector	44.6	48.7	48.4	46.4	45.1
– Direct and indirect taxes	29.5	32.5	31.9	30.2	29.6
4. Current receipts in the central government budget	24.6	27.9	27.6	28.9	26.9

accordance with the Peacock–Wiseman hypothesis [19] which argues that social crises are an important reason for the growth of the public sector.¹

From 1948 up till the present the real expenditures of the public sector have grown about fivefold. During the 1950s the relative size of the public sector did not grow very much. From the middle of the 1960s to the middle of the 1970s, however, the growth accelerated. Public consumption grew 4.4 per cent annually in the period 1948–60 whereas in the period 1960–76 the average annual growth was 5.5 per cent. Part of the explanation of this acceleration may be that the income elasticity of public sector services is greater than one. One may note also that part of the expansion is due to the fact that some previously private activities have been transferred to the public sector. In some cases this has happened when government has at first allowed financial aid to some private activity, and later, when the importance of the aid has become crucial, government has itself started to operate the activity. Examples are some private universities, which have been transformed to public institutions by this process.

One way to characterize the growth of the various components of the public sector is to calculate their GDP elasticities. These are shown in Table 3.

TABLE 3
GDP ELASTICITIES OF SOME COMPONENTS OF PUBLIC
EXPENDITURES, 1948–76

Transfers	1.2
– Income transfers	1.3
– Subsidies	1.15
Real capital formation	1.05
Public consumption expenditures	1.2
– General government and defence	1.1
– Education	1.25
– Health	1.4
– Other social services	1.15
– Transportation services	1.0

Clearly, public expenditures have grown faster than GDP. Among consumption expenditures, health has been the fastest growing component, and education next. Income transfers have also grown fairly rapidly, mainly in the last 10–15 years. In the 1950s public capital formation grew relatively fast, but later the growth of this component has slowed down so that over the total period this component has grown almost at the same rate as the GDP.

A remarkable feature of the growth is also the fact that central government expenditures have grown at a much slower rate than local government (municipalities and their associations) expenditures. At the beginning of the 1950s central government employment was bigger than that in the local governments combined but now local governments employ almost twice as many people as the central government.

¹Due to the space limitations we have to neglect the examination of various theories of growth of the public sector in the case of Finland. Those theories may include the productivity hypothesis by Baumol [3], the budget process approach by Wildavsky [25], and elasticities approach as applied by e.g. Musgrave [13] and Bergstrom and Goodman [4].

The trend is due to the fact that the central government has enacted laws requiring local governments to carry out certain public services (e.g. health and education services). These have been financed partly by grants from the central government. One may doubt, however, that the method of financing has encouraged municipalities to expand their activities, perhaps more than what was initially intended. At the moment the system of financing local government activities in the areas of health and social services is under review.

4. PLANNING AND INFORMATION

We see that the modern public sector is active not only in producing traditional public goods and maintaining the basic social infrastructure but in producing many individualistic or private-type services, re-allocating various incomes, and as an entrepreneur and a regulator of social development in many different social functions.

Since the operations of the public sector can only to a limited extent be based on the price system the main method of allocation has to be planning. The most important component of the planning system is the annual budget. The expansion of the public sector has created new needs for information which largely depend on the nature and characteristics of the planning system. During the 1960s quite an extensive development of planning for different operations of the government was launched.

The emphasis of the development of the planning system was initially on macroeconomic issues and the central coordination of the state activities. The development of the first macroeconomic models during the 1960s gave impetus to the development of the national accounting system. Planning-programming-budgeting ideas were used to initiate planning in administrative units. These were reflected e.g. in the introduction of the planning systems in the various administrative units in the course of the 1970s. But the process of development of the planning system itself changes the preconditions of its further development and therefore the most recent emphasis has been on efforts to decentralize planning and also on the regional aspects of planning.

The development of the modern national accounting system started in 1948. The methods of national accounting were strongly developed in the 1950s (e.g. the first input-output table concerned the year 1956). This can be seen as an answer to the information needs generated by the more active role of the government in the economy. It has been argued, however, that the development of the system was initially supply oriented: the development of the national accounting created the demand for it, not the other way round. I think this has to be interpreted to mean that the development of this kind of information system is to such an extent a technical issue that there will not be a specific demand for the system if the statistical authorities do not play an active role in directing the demand. Therefore the role of the statistical authorities is very important in the creation and promotion of the development of statistical information systems for policy purposes.

The planning process also creates new sources of information decentrally and therefore the needs of "central" planning may change. For example in recent

discussions emphasis has been on the need for the follow-up information concerning various kinds of social reforms that have been executed earlier. Also efforts have been devoted to developing micro-based simulation models for planning purposes.²

Quite recently in the policy discussions much emphasis has derived from the concern that the public sector has grown too big. These concerns stem mainly from two sources. First, it is being thought that the high level of taxation impairs work incentives, risk-taking and saving in the economy. Secondly there is concern about bureaucratization of the production of public services and over-regulation of private economic activity.

Traditionally the role of public sector has been seen more as a necessary and favourable element connected with the development of the modern welfare state. In view of the more critical approach to the public sector this view has lost some of its ground in recent debate.

From the point of view of the development of information this means that more emphasis has to be placed on the measurement of the scope of the public sector and the consequences of the expanded size of the public sector.

5. SOME SPECIFIC PROBLEMS OF PUBLIC SECTOR ACCOUNTING

5.1. *Measurement of Output*

The measurement of output independently of inputs is only possible for public enterprises. Output of general government services is based on the measurement of labour input. The problem of output measurement has been a long-term concern. For example, at the beginning of the 1970s there was a committee working on social indicators (Quality of Life [22]). One of its purposes was to enhance the measurement of the productivity of public sector activities.

The problem can be broadly divided into two types of analyses:

- the measurement of productivity of government activities in analogy to other sectors in the national accounts
- welfare oriented output measurements, like attempts to develop social indicators

Recently there have been some proposals to separate the output measurements from the welfare oriented measurements. Productivity measurement has been considered problematic because it is conceptually difficult to draw the dividing line between outputs, social indicators and welfare measurements. The problem of social indicators is the lack of appropriate general theory and the impossibility of measuring social welfare. Therefore, in spite of efforts to develop social indicators, only minor progress has been achieved in this area.

Recently Sintonen [23] has examined different approaches to productivity measurements.³ On the basis of survey of the literature he has formed a typology of different types of measurement, as shown in Table 4. (One has to read the

²These efforts have been described by Pihlatie [20].

³As the table shows there are a number of concepts like productivity, effectiveness, efficiency etc. which are used in this context.

TABLE 4
 VARIOUS CONCEPTS OF OUTPUT AND PRODUCTIVITY IN THE PUBLIC SECTOR. (SOURCE: SINTONEN, 1981)

	Actual Input	Actual Action(s)	Actual Output	Actual Outcome
Planned input	(1) Resource effectiveness (Deniston <i>et al.</i> [8])			
Actual input	/	(2) Resource efficiency (Deniston <i>et al.</i> [9])	(3) Productivity: program efficiency (Deniston <i>et al.</i> [9]); efficiency (Navarro [17]; Anderson & Williams 1975); productivity (Pitkänen [20]; productive efficiency (Bannock <i>et al.</i> [2]); effectiveness concept No. 1 (Møller [14]))	(4a) Efficiency; program efficiency (Deniston <i>et al.</i> [9]); efficiency (Cochrane [6]; Culyer [7]; effectiveness concept No. 1 (Møller [14])) (4b) Efficiency
Planned action(s)		(5) Activity effectiveness (Deniston <i>et al.</i> [8])		
Actual action(s)	(6) Average cost of activity (Deniston <i>et al.</i> [9]);	/	(7) Activity efficiency (Deniston <i>et al.</i> [9]); effectiveness concept No. 2 (Møller [14])	(8) Activity efficiency (Deniston <i>et al.</i> [9]); effectiveness concept No. 2 (Møller [14])
Planned output			(9) Program effectiveness (Deniston <i>et al.</i>); organizational effectiveness (Stein <i>et al.</i> [23])	
Actual output	(10) Average cost/unit of output (Deniston <i>et al.</i> [9])	(11) Activity/unit of output (Deniston <i>et al.</i> [9])	/	(12) Effectiveness (Pitkänen [20]); service effectiveness (Stein <i>et al.</i> [23])
Planned outcome				(13) Program effectiveness (Deniston <i>et al.</i> [8]); agency effectiveness (Stein <i>et al.</i> [23])
Actual outcome	(14) Average cost/unit of outcome (Deniston <i>et al.</i> [9])	(15) Activity/unit of outcome (Deniston <i>et al.</i> [9])	/	

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table so that it describes different quotients, the numerator being in a column and the denominator on a row).

The table illustrates the abundance of concepts used to describe output, productivity and efficiency in the public sector. It also shows that almost identical terms have been used to describe different concepts or that almost the same concepts have been described by different terms. In the literature there seems to be little consensus about the terms used in this context.

It seems clear that the quality of services is an important component of the output measurement in public services. The number of inpatient days in a hospital, for example, can be a very biased measure of output if not accompanied by a measurement of the quality of these days. It seems therefore obvious that analysis of the output of public sector services has to include not only the number of transactions, but also an evaluation of the quality of these events.

The quality component is technically difficult and operationally costly to evaluate. This is perhaps the most important reason why there has been so little progress in the operational measurement of output. Some have even suggested that it is quite a futile effort to try to operationalize these measurements. Another difficulty, which perhaps is a more delicate matter, is the argument that since public organizations are usually in a monopolistic position in providing their services they have very little incentive to develop output measurements that could be used to evaluate the efficiency of these organizations critically.

Progress may be possible along the lines proposed by Hill [11] and Hjerppe [12]. One of the main points in these papers was that output should be measured analogously in the private and public sectors and the attempt to measure welfare in the national accounting framework should be avoided. It is quite possible that one would find negative productivity development in some sectors of public services by using the proposed approach.

There are numerous examples of services which can be performed either in the public or the private sector. Therefore, it would seem natural to evaluate physically similar services as elements of output in both cases. The principal difference and difficulty, however, is in the valuation of the service. In the case of the private sector one usually can assume that the consumer evaluates the service in the market by its price and the utility—if the service is bought—at least equals the price. The problem with a free public service is that this kind of test does not exist, even if the service is physically identical to that in the case of private production.⁴

5.2. Evaluation of Uses of Government Output and Implications for the Balance of the Public Finances

SNA, in measuring government activities, divides final use only into public consumption and capital formation. The latter component in Finland consists typically of roads, other transportation structures and government buildings.

⁴An analogous criterion in the public sector was proposed by Hicks [10]: when the parliament has accepted an outlay the utility value produced is at least equal to the outlay, otherwise the parliament would not have accepted the outlay. Due to various technical issues in the preparation of the budgets, this view can easily be criticised.

Capital formation therefore consists only of real capital formation (fixed capital and the change in inventories).

It may be argued, however, that for some purposes it would be useful to classify some public services as contributing to human capital formation. The most obvious services in this sense are health and education services. If one includes e.g. all educational services and half of health services as investment expenditures, the capital formation component of government expenditures would rise considerably. (One may think that part of the health expenditure does not affect a person's ability to produce. Since there is no exact ground for calculating this part it has been taken as half of health expenditures for illustrative purposes.) This is illustrated by the following figures:

	1975	1979
	millions of Fmk	
(1) 50% of health expenditures	1867.4	3157.5
(2) Education expenditures	4905.7	8119.3
(1)+(2), the human capital component	6773.1	11276.8
(3) General government gross capital formation (fixed capital and increase in inventories)	4247.6	5599.7
(4) GDP	101882.3	161319.1
(3) as a percentage of GDP	4.2	3.5
(1)+(2)+(3) as a percentage of GDP	10.8	10.4

In this way we can come to the conclusion that the human capital component of the government expenditures was about 60 percent greater in 1975 than gross real capital formation in general government and more than double in 1979. These types of calculation affect not only the assessment of the role of capital formation in the economy but they have interesting implications also for the interpretation of the proper balance in the public sector budget. Forgetting for a moment the role of borrowing in stabilization policy, one may discuss the proper amount of borrowing to finance public expenditures in general. The state budget in Finland consists of all current and capital (real or financial) expenditures. In this case the requirement that all budget expenditures be financed from current taxation and government fees is a very strict balancing requirement indeed. One may admit that sound government financing may include some borrowing for capital expenditures. But here one may use very different concepts of capital expenditures and may therefore end up with quite different views about the proper balance of the budget.

The concept of the balance of the budget is further complicated by the fact that the return on government investment expenditures may sometimes be very low and even negative in some cases (some interest-subsidized financial loans in inflationary periods). The issue of "sound" finance is often very important in policy discussions. As we can see, this kind of discussion is inherently quite a flexible one and the appropriate rule or recommendation depends heavily on the theoretical framework applied. For example, Keynesian fiscal analysis bases the appropriate concept of balance on the current cyclical conditions of the

economy, whereas monetarist theories would argue for continuous balancing of the budget.

5.3. *The Measurement of the Size of the Public Sector*

It is well known that there is no unique way to measure the size of the public sector. Therefore in defining the scope of the sector one must always keep in mind the purpose of the analysis. It also seems that the measures which have been emphasized in public discussions have changed to reflect the concerns of public policy. Therefore, the gross rate of taxation is now a quite often quoted measure instead of the exhaustive (consumption and investment) expenditures which were typical measures earlier.

Some of the most common indicators in measuring the extent of the public sector have been:

- the share of public sector value added in the GDP (factor cost);
- the share of public sector labour input in total labour input;
- the share of public consumption and investment expenditures in the total expenditures (market prices);
- the share of public incomes and expenditures in the GDP (market prices);
- various measures of the gross rate of taxation (all taxes) or all government income as a percent of the GDP;
- central government budget as a proportion of the GDP.

Among the most common broad analytical purposes where these measures can be used are:

- to analyse the role of the public sector from the point of view of production and resource allocation
- to analyse the role of the public sector from the point of view of primary income distribution and income redistribution
- to analyse the role of the public sector from the macroeconomic viewpoint (stabilization policy and growth studies)
- to analyse the role of the public sector in the regulation and control of private activities.

These broad categories, which, except for the last one, are based on the classification of Musgrave [14], may of course include a host of different more detailed and specific analytical questions. Depending on the analytical purposes one can select different measures to describe the scope of the public sector. The scope is, of course, affected by the institutions included. The three most important institutional groups are:

- general government, which mainly produces services without charge or or at prices which do not fully cover, nor are intended to cover, the full costs of production,
- public enterprises, which are totally government owned unincorporated enterprises and which in principle sell their products to cover their operating costs,
- public corporations, which are totally or partly owned by the government.

There are some difficult problems in defining the institutions to be included in the concept of public institutions. The most problematic cases are of two types:

- entities which are partly financed by grants from government but which may nominally or originally have been private entities;
- corporations where the public sector owns only part of the shares.

The definitions in the Finnish national accounting are in principle based on the recommendations of the new SNA. However, for certain cases the purpose of the analysis should be the most important criterion to determine whether a unit should be included into public sector or not.

5.4. Changing Emphasis on the Measures of the Size of the Public Sector

Earlier it was quite usual to refer to public consumption and investment expenditures when describing the scope of the government activities in the economy. During the past five years or so more emphasis has been put on the gross rate of taxation as a measure of the size of the public sector. It is a practice of national accountants that some components of the gross rate of taxation do not belong to the concept of income but mainly reallocate the purchasing power in the economy. The reasons which may have affected this new concern with the rate of taxation as a proper measure for policy purposes reflect the following concerns:

- there has been a need for a broader measure of government activities than earlier;
- there is more concern about the incentive effects of taxation on the economy than earlier (this is reflected in the recent discussions of supply-side economics);
- concern about the possible growth of the “hidden” economy due to the high rates of taxation;
- transfer expenditures are now relatively more important in public budgets than earlier, and this justifies a broader measure than just the exhaustive expenditures.

In principle, at least for control purposes, there is a need to have the broadest possible definition of the scope of the public sector.

The concern over the gross rate of taxation has caused government to adopt as one of its economic policy targets the maintenance of a constant rate of taxation. There are many reasons for debating the reasonableness of this objective, but this measure has one particular advantage in economic policy debates: it is very easily comprehended by the general public.

However, the selection of the gross rate of taxation as one of the target indicators of economic policy can be interpreted to mean that the emphasis of the policy has shifted from the concept of the welfare state to the problems of incentive effects of taxation. There are problems connected with the use of this kind of an indicator as a policy target from the point of measuring the scope of

the public sector, including:

1. the adequacy of this indicator for measuring the size of public activity;
2. the sensitiveness of this indicator to various accounting procedures;
3. the behavioral implications of using this kind of target indicator.

A categorial use of the rate of taxation as a policy indicator may neglect aspects of social cost-benefit analyses of various projects as an underlying approach to policy problems. However, I do not want to discuss this aspect of the problem further here.

Instead we may note that the gross rate of taxation does not adequately reflect e.g.:

- that part of total expenditures which are financed by borrowing. This may be a partial explanation for the failure to reduce the rate of borrowing during the recent upturn of the Finnish economy. It may be argued that the proper measure of the size of the public sector should be total expenditures;
- the effects of the possible increasing tax expenditures (tax reliefs which are made over and above the normal tax structure);
- the growth of other possible off-budget expenditures and funds;
- the scope of the regulation introduced by the government.

Problems arising in the use of tax rate as a measure of the size of the public sector can perhaps best be illustrated by some examples. One well known example is the case where family allowances are replaced by tax reliefs. The broad economic policy intentions may be roughly the same in both cases, but the size of the public sector will be reduced. In both cases there are incentives to allocate resources in the same direction. There are, of course, differences in incidence: family allowances tend to be more equally distributed than tax reliefs, which favour those in high marginal tax rate categories.

Another example may be taken from an organization which has to maintain certain services to customers. If there is a need to expand this service activity there are many different possibilities which show up differently in the public budgets and the measured size of the public sector.

1. Policy makers may grant more resources to expand the services. This will show up as an increase in expenditures and in the size of public sector.
2. Policy makers may form an enterprise, which covers its operations by payments, to extend the services. The effect on the size of the public sector depends on the accounting procedures used for public enterprises.⁵
3. The public authority may increase the prices of the services provided. This may reduce the demand for the services and will show up in the budget as a change in income from charges.
4. The public authority may concede tax reliefs for private entrepreneurs who expand this service capacity. This expansion does not show up as

⁵In Finland the operating loss or surplus of public enterprises is shown in the central government budget. In the national accounts the expansion of public enterprises is recorded in their value added.

an increase in public activity but may show up as a decrease in the service charges and a loss of income.

5. Instead of tax reliefs the public authority may grant loans to private entrepreneurs. How these show up in the budget depends on e.g. the amount of the interest rate subsidy etc.
6. The public authority may also use guarantees for private enterprises. These guarantees do not show up at all in the budget.
7. The public authority may try to control and regulate the use of services. This affects the size of the budget only to the extent that administrative costs are involved in the regulation.

Although all these measures are different they could have a similar effect on the use of resources in the economy. These effects are all induced by the government but they imply different sizes of the public sector measured by the gross rate of taxation. There are in principle two different problems involved here. There is a problem of following the allocation of scarce resources in the economy, which differs from the need to control public expenditures and budget. Therefore, one should be very careful when using measures like the gross rate of taxation for analytical purposes. It is not satisfactory for the description of the allocation of resources but it is also deficient for the purposes of controlling budgetary or public expenditures.

5.5 Public Sector Regulation

One of the important functions of the government has always been regulation of the economy by issuing various types of norms for control purposes. It has been argued that this kind of activity has expanded during the last decade. It is obvious that only part of the costs of regulation is included in the public sector accounting procedures, namely those consisting of the operating costs of the regulatory agencies.

The effects of the regulation on the economy can be classified in three categories :

1. Increasing paperwork in both public and private sectors. Part of the resources in the private sector has to be allocated to planning the regulatory activities and therefore these resources cannot be used for other purposes. Regulation allocates resources directly.
2. Regulation changes relative prices of different goods and services and therefore allocates resources indirectly, via the price system. The basis for regulation is typically some kind of externality, the effects of which may be difficult to assess. The total costs and benefits of the regulation are very difficult to determine.
3. The third effect is connected with the attempts to avoid the regulation or the effects of regulation. This is particularly clear in taxation, where it is argued that the increase in taxation has caused an expansion in the "hidden" or informal economy. These effects can be seen as elements in the discussions which have dealt with the problem of over-bureaucratization in government.

There are no overall studies available on the effects of regulation in Finland. Some interesting examples can, however, be found. It has been e.g. estimated that the fairly complicated rules on corporate taxation have induced high administrative costs, to such an extent that administrative costs in government and firms together are about one-fourth of the total revenue derived from the corporate income tax.

Another example can be found in the construction of private houses. It has been estimated that people who build their own houses on own-account have avoided taxation in about two thirds of the cases. As a third example there is currently work going on to estimate the amount of paperwork caused for the private sector by various public inquiries. Also the norms issued by the central government authorities to local governments are currently under examination.

It seems clear that more attention than earlier will be devoted to regulatory activities. This sets up a challenge to develop an accounting procedure for these purposes. In this kind of accounting difficult conceptual issues are involved, the basic problem being how to define regulatory activities, which may consist of e.g. protection of working conditions, environmental control etc., many activities that are socially considered highly important.

5.6 Needs of the Policy for Income Redistribution and Accounting for Subsidies

We noted earlier that transfers have been one of the fastest growing components of public expenditures in recent decades. It is possible to interpret this to suggest that the question of income distribution has become relatively more important lately than e.g. the problems of economic fluctuations and growth, which traditionally have been central concerns of economic policy. Although there has been some clear progress in the development of the statistics of income distribution during the 1970s there still remain many important problems for further development. As examples the following problems will be noted:

1. There is a need to assess the distributional implications of public services provided free of charge. In Finland there are some estimates of the use of public services in national household surveys. These form an interesting base for this type of analysis. This information is available from the year 1976. The incidence of public services can be approached from different perspectives:
 - who receives the factor income from the production of the services;
 - on whose behalf the services have been done;
 - what effect these services have on the prices and factor incomes in the economy and the final implications of these for income distribution.It is clear that the last problem requires a general equilibrium analysis and cannot be easily answered by statistical analysis.
2. There is a need to integrate micro and macro data together for policy analysis. For example in Finland some simulation models have been developed to analyze the effects of transfer programs and taxation. In these problems there is a need to combine individual data, constructed

either on the basis of tax and transfer laws or newly proposed laws, with data from household surveys, income distribution statistics and national accounting. Fortunately new technological development favours this kind of progress. One can see that the combination of micro and macro data is one of the most important areas for the development of statistics for policy purposes. One may mention that this kind of data analysis also has very important potential use in the context of incomes policy planning.

3. There is a need to combine the data on transfers and subsidies with the data on different types of tax expenditures in order to assess the total impact of the public sector on the distribution of income. It has been found e.g. that in housing the tax deductions and interest rate subsidies are by far the most important elements in housing policy.
4. For policy purposes there is also an urgent need for more detailed data e.g. about financial subsidies to firms. The development of policy has been such that various supporting activities have become both more numerous and more specific. This has happened even though the relative importance of the subsidies has declined if measured by their share in GDP. What has happened is that the policy measures have become more specialized, detailed and varied. Examples can be found e.g. in regional policy and energy policy. This also creates a need to combine micro and macro data.

6. CONCLUSIONS

The question about public sector statistics for policy purposes is a very extensive one and in a short paper only a few problems can be covered. In this paper I have first described the main features of the development of the public sector in Finland, especially in the period after the Second World War.

The interconnection between the development of the planning system and the development of the requisite information system is essential and illustrated in the paper. Initially, the development of the national accounting system was to some extent supply oriented and created its own demand. With the growing role of the public sector in the economy the information needs multiply. Particularly there appears a need for information which can be used to evaluate the effectiveness, efficiency and productivity of public sector activities. On the other hand only a limited success has so far been achieved in these areas. The increasing role of transfers in the economy has created a heavy demand for data on the distribution of income. The provision of public services and the emphasis on the income distribution are typical features in the development of the welfare state. In the most recent development of the public sector more attention has been paid to the incentive effects of the tax-transfer system. The gross rate of taxation and other indicators which describe the size of the public sector were discussed and criticized. The overall assessment and the control of public expenditures create also a need to develop information about tax expenditures and public sector regulation. In the latter part of the paper these areas where further progress is needed were discussed.

ANNEX
TABLE 1
SHARES OF SELECTED COMPONENTS OF PUBLIC EXPENDITURES AND INCOME IN GDP
(Percentages)

	Value added				Real Expenditures (3)+(4) (5)	Public Consumption Expenditures at Fixed (1975) Prices (6)	Income of General Government (7)	Income of Central Government Budget (8)
	General Government (1)	General Government and Public Unincorporated Enterprises (2)	Public Consumption Expenditures (3)	Public Capital Formation (4)				
1960	8.7	14.0	11.9	4.2	16.1	15.1	33.3	24.4
1961	8.7	13.6	11.8	3.8	15.6	14.8	32.5	22.8
1962	9.1	14.0	12.6	3.9	16.5	15.6	34.1	24.8
1963	9.6	14.6	13.5	4.0	17.5	16.2	33.6	22.0
1964	10.1	15.2	13.6	4.5	18.1	15.7	35.4	24.4
1965	10.3	15.3	13.8	4.8	18.6	15.6	36.5	26.2
1966	11.1	16.2	14.5	4.5	19.0	16.0	38.1	26.4
1967	11.9	17.1	15.1	4.5	19.6	16.4	40.1	25.7
1968	12.3	17.2	16.0	4.3	20.3	16.9	40.4	27.0
1969	11.9	16.6	14.7	3.9	18.6	16.0	39.3	26.8
1970	11.7	16.3	14.7	3.3	18.0	15.6	37.9	25.1
1971	12.1	16.6	15.5	3.3	18.8	16.2	41.0	24.7
1972	12.1	16.5	15.6	3.7	19.3	16.3	41.1	24.9
1973	11.8	15.9	15.3	3.3	18.6	16.2	41.7	24.2
1974	11.6	15.5	15.5	3.3	18.8	16.4	41.7	23.7
1975	13.0	17.3	17.5	3.6	21.1	17.5	44.6	24.6
1976	14.1	18.9	18.5	3.3	21.8	18.4	48.7	27.9
1977	14.4	19.5	18.9	3.4	22.3	19.1	48.4	27.6
1978	14.4	19.6	18.8	3.3	22.1	19.4	46.4	28.9
1979	14.0	19.1	18.3	3.1	21.4	18.7	45.1	26.9

Source: Revised national accounts 1960-78. Central Statistical Office, Helsinki 1981.

TABLE 2
STRUCTURE OF PUBLIC CONSUMPTION EXPENDITURES IN SELECTED YEARS
(Percentages)

	General Administration	Defence	Education	Health	Social Security and Welfare	Transport and Communi- cation	Total
1950	29.4	13.0	25.1	14.4	9.2	8.9	100.0
1955	24.7	10.9	30.8	16.0	10.1	7.5	100.0
1960	23.9	11.5	31.8	17.2	8.9	6.7	100.0
1965	23.9	11.3	30.6	19.7	7.9	6.6	100.0
1970	24.0	9.4	30.2	22.7	8.1	5.6	100.0
1975	24.1	8.8	30.5	22.6	9.0	5.0	100.0

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