

Political Budgeting: A Framework for an Institutional Analysis of Swedish National Accounts

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Budget making within the public sector may be approached by means of a systems analysis. The processes and results of budget making may be identified as a system, consisting of variables and relationships. The system of political budgeting is a conceptual framework for a quantitative analysis of basic budget facts concerning inputs, processes and outputs. The article outlines the framework and applies it to the public sector in Sweden on the basis of data derived from Swedish national accounts.

1. Introduction

Political budgeting is the process through which public bodies attract and allocate resources.

The activities through which public bodies attract and dispose of resources for the achievement of political goals may be identified as a system, called the system of political budgeting (S). Such a system may be examined by means of systems analysis, identifying the various parts or variables of S and stating some functional relationships between these. A systems analysis of S may proceed on various levels of abstraction. The simple model may be used to identify some main characteristics of the system of political budgeting in various countries over time, or the systems analysis may state some general properties of this kind of system.

The main variables of the system S are demonstrated in Figure 1.

- A. Resource mobilization, i.e. the mechanisms through which resources are collected.
- B. Agents of political budgeting, i.e. those institutions active in the process of attracting and disposing of resources.
- C. Resource allocation, i.e. the functions fulfilled by the disposition of resources.
- D. The environment, i.e. the relationships of the system S to the private sector and to the international setting.

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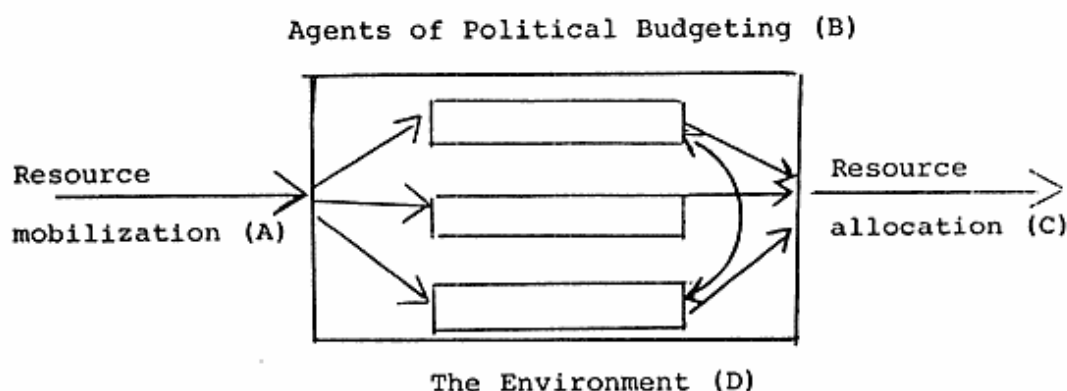


Figure 1. A Simple Model of Political Budgeting.

The primary task of a systems analysis of a system S is to identify the values of the variables A , B , C , and D . If these values are available for a series of years, then S may be described for that time interval. A time description of S would amount to a statement of the values of the variables of S with regard to some time unit – preferably on a yearly basis, i.e. $S_T = (A_x, B_y, C_z, D_w)$.

The second task of a systems analysis of a system S is to identify functional relationships diachronically as well as synchronically. If the values of the variables of S are known for a time interval, functional statements may be tested:

$$(1) S_T = F(S_{T-1})$$

Moreover, it is equally valid to search for synchronic relationships between the variables, i.e.

$$(2) A_x = F(B_y, C_z, D_w) \text{ etc.}$$

If there is reason to analyze the variables of the system in terms of subvariables the functional relationships between the subvariables may be pursued in a similar fashion, stating for example how A_1 is dependent on the set (A_2, A_3, A_4) . To move one step further, if a subvariable is to be broken down into subvariables $A_{11} - A_{1n}$ the same functional procedure may be employed, stating the value of A_{11} diachronically or as a synchronic function of the values of the other subvariables.

We now proceed to describe a system of political budgeting during a specified time interval. We shall identify the main variables of that system and describe their values in terms of an institutional analysis of national accounts. What follows are some steps towards a quantitative statement of political budgeting. It should be stressed that the application is only tentative: the more sophisticated quantitative analysis remains to be done.

2. Resource Mobilization (A)

The values of the variable A (resource mobilization) consist of the yearly total income of the public bodies making up variable B (agents of political budgeting) measured in current prices. The subvariables of A (i.e. A₁–A_N) include the various factors that in aggregate form make up A.

The development of the income of the public sector is shown in Figure 2. Both the absolute and relative figures point to a heavy increase in the public sector during the post-war period. Since 1945 the total income of the public sector has doubled as a percentage of GNP. Since 1975 the public sector has attracted more than 50% of the GNP.

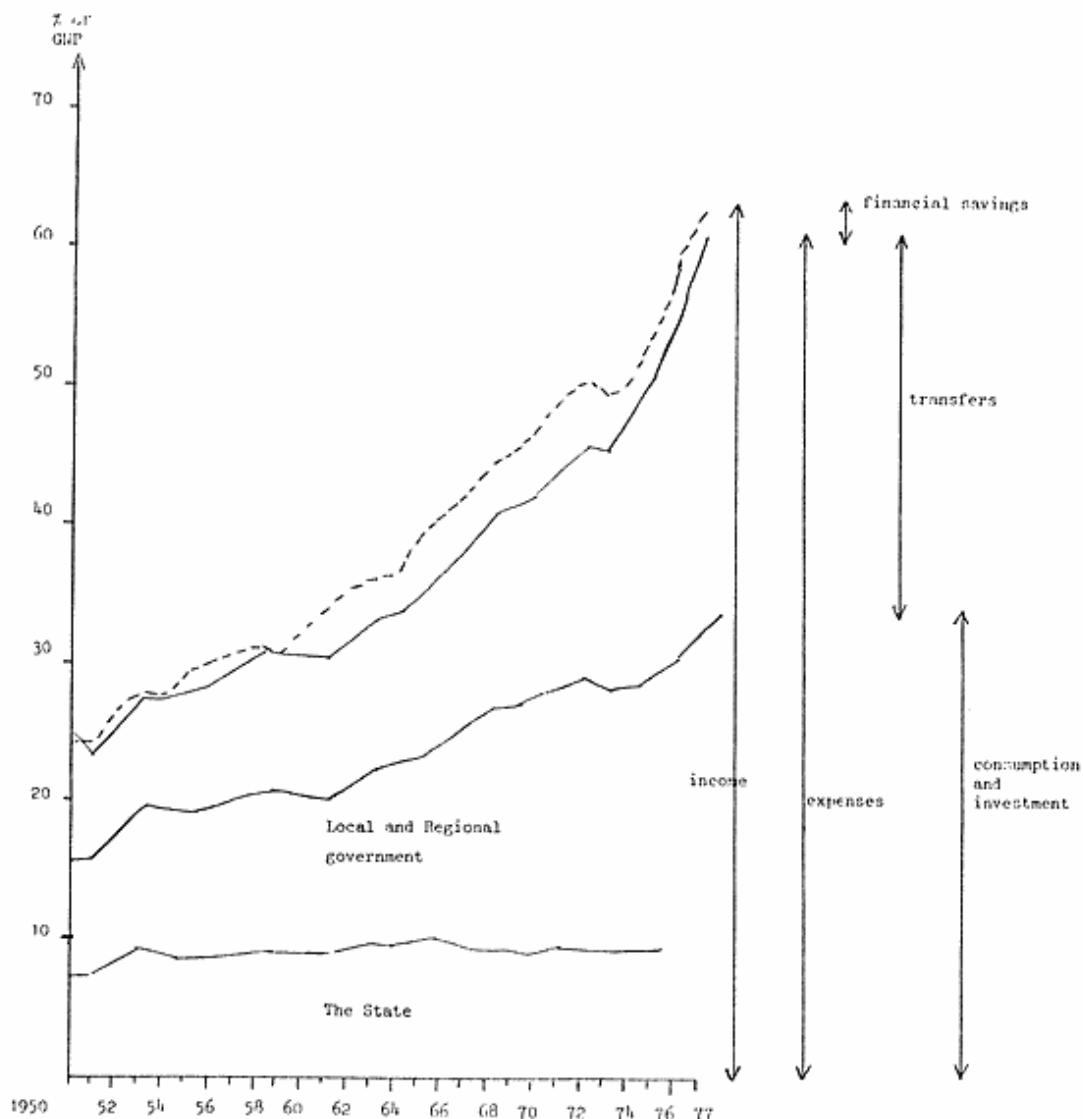


Figure 2. The Growth of the Public Sector in Sweden 1950–1977 (Current Prices)

Source: Swedish National Accounts

A number of questions concerning the growth of the variable A may be raised, all relating to a quantitative explanation, i.e. a statement of the determinants of the income expansion. What kind of mathematical formula could express the various growth rates, both the yearly ones and those for certain periods? What predictions about the relative distribution of resources between the public and the private sector could be made in relation to various assumptions about growth rates?

The expansion of the public sector income may be used as an indicator of the widening influence of the public sector within social life in general. The distinction between the public sector and the private sector may be made in two different ways:

- (1) By means of the indicator resource mobilization: the public sector is as large as the percentage of GNP attracted to public bodies
- (2) By means of the indicator resource utilization: the public sector is as large as the percentage of GNP made up of consumption and investment of the public bodies

If analyzed by means of indicator (2), the growth of the public sector is less dramatic. A significant part of the income of the public sector was returned to the private sector for utilization. Though roughly 41% of the income of the public sector was returned to the private sector in 1975, the public sector nevertheless absorbed as much as 54% of GNP and allocated as much as 52% of GNP, the difference being made up of the financial savings part of the public sector.

The variable A may be broken down into its subvariables, the growth of which may also be analyzed in a quantitative fashion. The components of the income of the public sector are indicated in Table 1.

Table 1. Resource Mobilization Variables 1950–1975 (in percentage).

Year	Individual income tax			Indirect taxes	Residual
	The State	Local & Regional Governments	Social security charges		
1950	23	24	–	32	21
1955	25	25	–	29	21
1960	22	23	5	32	18
1965	22	23	9	30	16
1970	20	26	14	26	14
1975	20	26	25	23	6
1977	16	26	29	24	4

Source: SOU 1977:91

The input side of the system of political budgeting in contemporary Sweden consists of three main parts: individual income tax, indirect taxes, and social security charges. The enterprise tax constituting 14% in 1950 used to be a significant portion of income, but by 1965 it had declined to 5%. The importance of private property and inheritance taxes has decreased, from 3% in 1950 to 0.5% in 1977. It is sometimes maintained that the importance of indirect taxes has increased. Table 1 does not support such a statement since these taxes have decreased as a percentage of the total income in spite of the introduction of new types of consumption taxes. The picture is, of course, different if absolute figures are examined instead of percentages (Table 2).

Table 2. Indirect Taxes 1950-1977 (Absolute Figures, in Billion).

	Value-added tax	Energy tax	Road Vehicle tax	Taxes on tobacco and alcohol	Residual
1950	-	0.4	0.1	1.0	0.5
1955	-	0.6	0.4	2.0	0.6
1960	1.0	1.5	0.5	2.5	1.0
1965	4.0	2.0	1.0	3.0	2.0
1970	7.0	3.0	1.5	4.5	2.0
1975	16.0	4.5	2.5	6.5	1.5
1977	24.5	6.0	3.5	8.0	1.5

Source: SOU 1977:91

The large increase in value-added tax has occurred at the same time as other kinds of consumption taxes have been raised. The general sharp increase in the input to the public sector can be seen in the development of the taxes on tobacco and alcohol. In 1950 they contributed 16% of the overall income, but only 4% in 1977 even though the revenues from these taxes were eight times higher in 1977 than in 1950.

The fastest growing contribution to the input side has come from the levies connected with social security. Their growth was particularly striking in the 1970s. In 1970 they made up 14% of the total input; by 1977 they amounted to 29%. As of 1977 the social security charges were comprised of four major components: supplementary pension (8%), general pension (8%), health insurance (7%), and a special tax on labor, the general employers' charge (4%). It may be pointed out that there is a difference between the individual income tax and the indirect taxes on the one hand and the social security charges on the other.

These two subvariables of A, individual income tax and indirect taxes, have in common that they do not per se place any restrictions on the alternative uses of the resources collected. Of course, there may be some restrictions on indirect taxes, tying specific tax levies to definite items of spending. However, in Sweden no such restrictions occur in relation to these two types of input variables, i.e. they offer per se a high level of manoeuvrability to the public bodies charged with the task of allocating

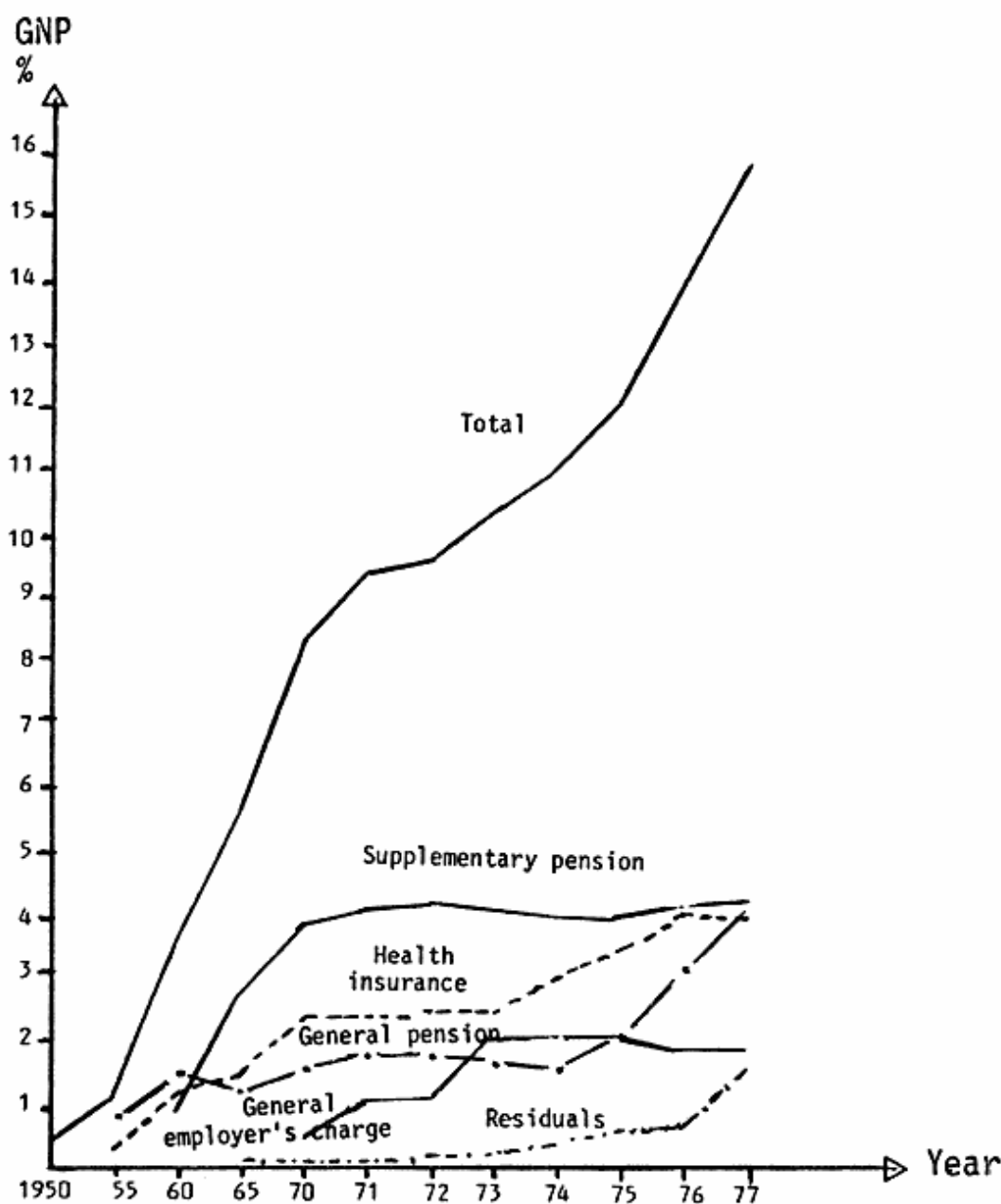


Figure 3. The Development of the Social Security Charges 1950-1977 in Percentage of GNP. Source: SOU 1977:91

these resources. The last main subvariables of A, social security charges, place by their very nature restrictions on the freedom of action of public bodies. These levies, or the main bulk of them, are tied to particular purposes. In Sweden the government decides the size of these charges, while the administration of the funds generated by means of these charges is handled by public social insurance institutions.

Even though the ultimate destination of the resources collected by means of these charges is predetermined, they do present possibilities to the public bodies within the capital market. In fact, the larger the funds generated by means of the charges, the greater the potential influence of the social insurance institutions. Of course, the freedom of action of these institutions may be severely restricted by various regulations as to where the funds should go, as is the case in Sweden. An increase in all the social security charges except that on labor signifies more responsibility on the part of the public sector but less general freedom of action, because these resources go to predetermined items of expenditure. The creation of large funds through the social security charges does increase the manoeuvrability of the public sector within the capital market. This implies that the effect of a growth of the input variable may differ depending on which subvariable of A grows fastest in relation to the others. Since the social security part of the input side is the part of the variable A that grows relatively fastest this means that the manoeuvrability of the general system of public budgeting in Sweden has decreased at the same time as its responsibility has increased. It has collected more and more resources from the private sector at the same time as its revenues have been more connected in advance to special items of expenditure. The same process has had the effect that the control over the capital market of the public sector has increased.

In conclusion, we suggest that the development of the various parts of the variable A may be analyzed in a quantitative theory of the growth of the input side of the public sector. The various growth rates may be derived for each major category and compared in a systematic fashion. Predictions as to the value of A may be made on the basis of alternative assumptions of the development of its subparts.

3. Agents of Political Budgeting (B)

An analysis of the principal components of the system of political budgeting may proceed by identifying the parts which may be divided into

subparts. The division of the variable B, agents of political budgeting, into units depends, of course, on the nature of the political system. In some political systems there may be several principal units engaged in the processing of inputs into outputs.

There are three major agents involved in the system of political budgeting within the Swedish public sector:

- (a) The state
- (b) The regional and local governments
- (c) The social insurance institutions

The data in Table 3 constitute a basis for a preliminary statement of the budgetary relationships between these agents.

Table 3. Input and Output Sides of the Public Sector 1950–1975 in Percentage of GNP.

	1950	1960	1965	1970	1975	1977
Income						
The State	15	20	23	24	27	28
Regional & Local Governments	8	9	11	15	16	18
The Social Insurance Institutions	1	4	6	9	11	16
Sum	24	33	40	48	54	63
Expenditures						
The State	12	13	14	13	16	19
Regional & Local Governments	9	13	15	22	23	27
The Social Insurance Institutions	4	5	6	8	13	15
Sum	25	31	35	43	52	61
Financial Savings						
The State	-1	2	5	5	2	2
Regional & Local Governments			3	.2	-1	-2
The Social Insurance Institutions			-1	-1	-1	0
			3	4	4	4

Source: Swedish National Accounts

The possession of resources is certainly not the only indicator of power. However, we use the data on resource distribution to present *one* picture of the power distribution in society, though we are aware of the simplification implied in such an approach. The post-war period has generally implied a strengthening of the power of the bodies that make up the public sector. All three major components of the system have significantly in-

creased their shares of the total amount of resources available in society. The relationship between the public and the private sectors, analyzed in terms of resource mobilization, has been turned upside down. Alongside the growing power of public bodies there has been a sharp increase in the power of the state. The state today possesses almost 1/3rd of the total resources compared to less than 1/6th in 1950. The significant differences between the input and the output sides indicate the expansion of state power. Whereas regional and local governments have doubled their possession of resources since 1950, they have become ever more dependent upon the allocation of state resources simply in order to maintain their activity levels. At the same time as the state has expanded its possession of resources, it has become more involved in moving resources to other public agents instead of spending these resources itself. In 1950 the state attracted 15% of GNP and itself disposed of 12%, but in 1977 the corresponding figures were 28% and 19%! There has thus been an increase in the interactions between the three major components of the system, making regional and local governments more dependent on state allocation than earlier. Since the social insurance charges are determined by the state, the state today has a higher degree of control over the activities within the public sector. Look at the two figures that summarize the changes in relationships between the public and the private sectors as well as between the major agents of political budgeting (Figures 4 & 5)! The public sector has increased its relative share of the mobilization of societal resources from 24% to 63%, thus decreasing the relative proportion of the private sector correspondingly. Although a significant portion of these resources are allocated to the private sector, they are not allocated in a neutral fashion, which means that the resource utilization of the private sector is affected by the reallocation of the agents of political budgeting. Had the public sector confined itself to collecting what it needs for its own consumption and investment the private sector would look different because the reallocation of resources to the private sector does affect its structure. Only 37% of the societal resources in 1977 were left untouched by the public sector agents, whereas the corresponding figure in 1950 was 76%. We can state that within the system of budgeting in 1977 the state was in a much more powerful position than it was in 1950. It attracted a significantly larger portion of resources than in 1950 and it reallocated substantial amounts to the other agents, making them dependent on the state in a way that had no parallel in 1950. The quantitative statement as to the development of these relationships remains to be expressed, of course. What is attempted here is only a preliminary outline.

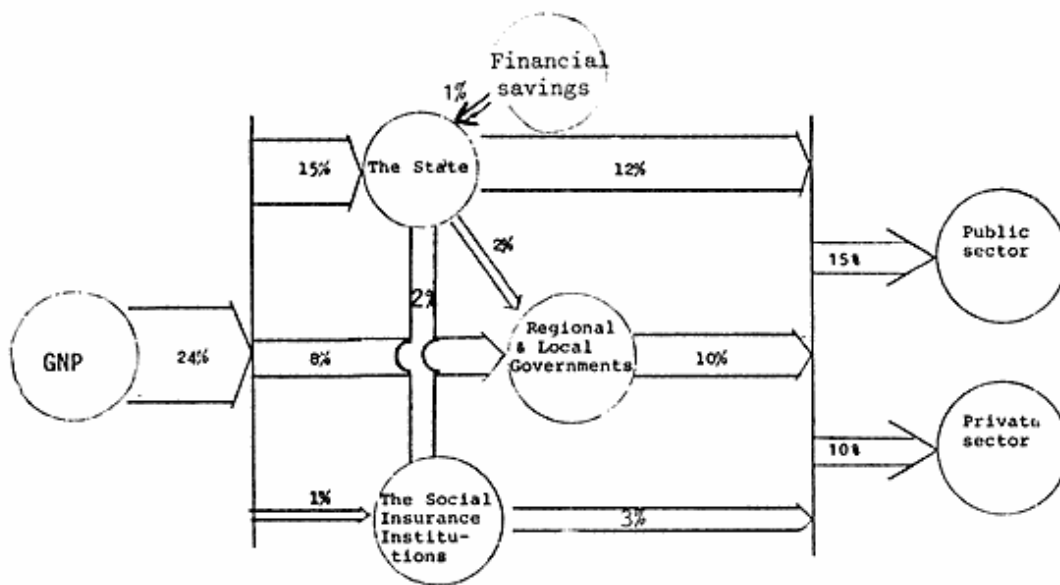


Figure 4. The Public, the Private and the Agents of Political Budgeting in 1950 (Resources in Market Prices as a Percentage of GNP)

Source: Swedish National Accounts

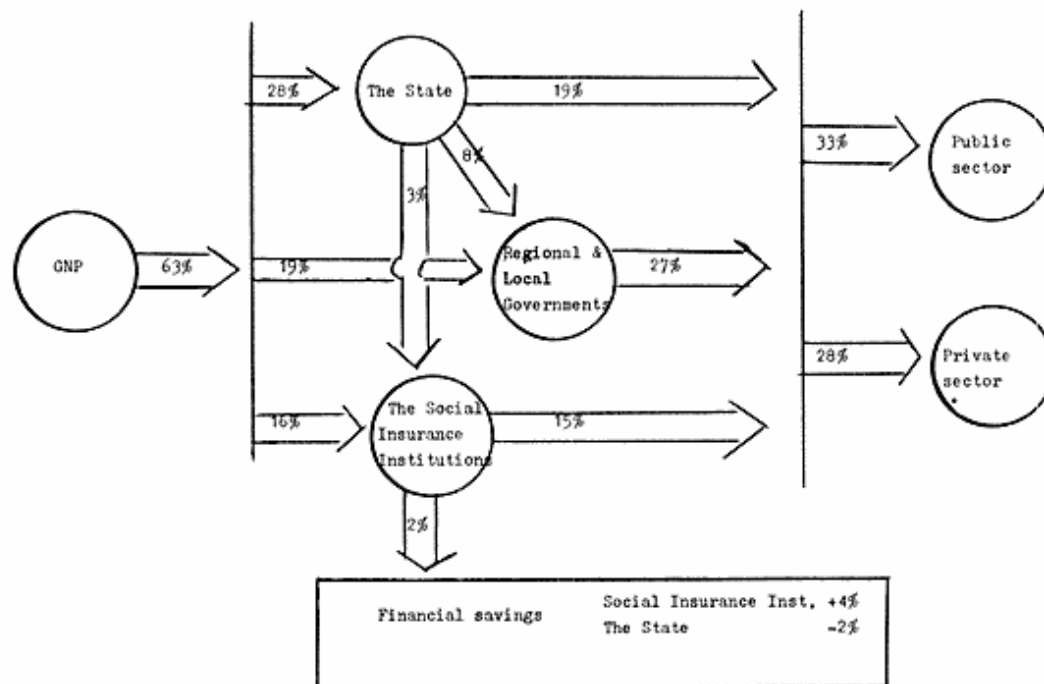


Figure 5. The Public and Private Sectors, and the Agents of Political Budgeting in 1977 (Resources in Market Prices as a Percentage of GNP)

Source: Swedish National Accounts

The various agents attract various kinds of income, as is stated in Table 4.

Table 4. The Income Items of the Various Agents 1950–1975 (in Percentage)

Income item	Agents	Portion of total income of the public sector (%)				
		1950	1960	1965	1970	1975
Indirect taxes	The State	29	29	28	25	25
	Regional & Local Governments	2	1	1	1	1
	Sum	31	30	29	26	26
Direct taxes	The State	25	25	24	22	21
	Regional & Local Governments	23	20	20	21	21
	Sum	48	45	44	43	42
Social insurance charges	Social Insurance institutions	6	11	14	16	17
Other income	The State	7	6	5	4	4
	Regional & Local Governments	7	8	7	8	7
	Social Insurance Inst.	1	0	1	3	4
	Sum	15	14	13	15	15
Sum total		100	100	100	100	100
Sum total (million kr.)		7.796	24.067	45.753	81.713	155.541

Source: Swedish National Accounts

While the state has used indirect taxes and direct taxes as its two main sources of income, the regional and local governments have used direct taxes and state support to pay for their activities. The social insurance institutions use the social insurance charges as their main source of income; they used to receive a significant portion of their resources from the state, but they have grown less dependent on state money.

We know of no attempts to analyze the generation of the various income items and output items of the various agents within the Swedish system. A mathematical statement of the determinants of various taxes and various appropriations is at the same time a theory of budgetary behaviour. Perhaps appropriations grow at a fairly steady rate according to incremental norms whereas revenue behavior does not always display the same continuous properties. Moreover, there may be significant differences between the revenue and the spending behaviour of different agents. These variances may be revealed by a mathematical treatment of the development of the various input items and the various output items of the different agents and their subparts.

4. Resource Allocation (C)

The output side of the system of political budgeting displays a similar kind of network of various items that may be subjected to a diachronic analysis. There are a number of distinctions that must be made in any mathematical treatment of the output side, some of which seem to depend on the political system selected. With regard to the Swedish system, the following categories are crucial: consumption, investment, and transfers. The public sector uses part of the resources extracted for its own consumption and investment, while other resources are allocated back to households and enterprises which these units use for their own consumption and investment. What has happened since the beginning of the 1970s is that transfers have grown at a greater rate than either consumption or investment.

Today transfers constitute roughly one half of the output of the public sector, whereas they made up 1/3rd during the 1950s and 1960s. During these two decades the rate of growth for consumption and investment was greater than that of transfers, while the reverse is true of the 1970s. The

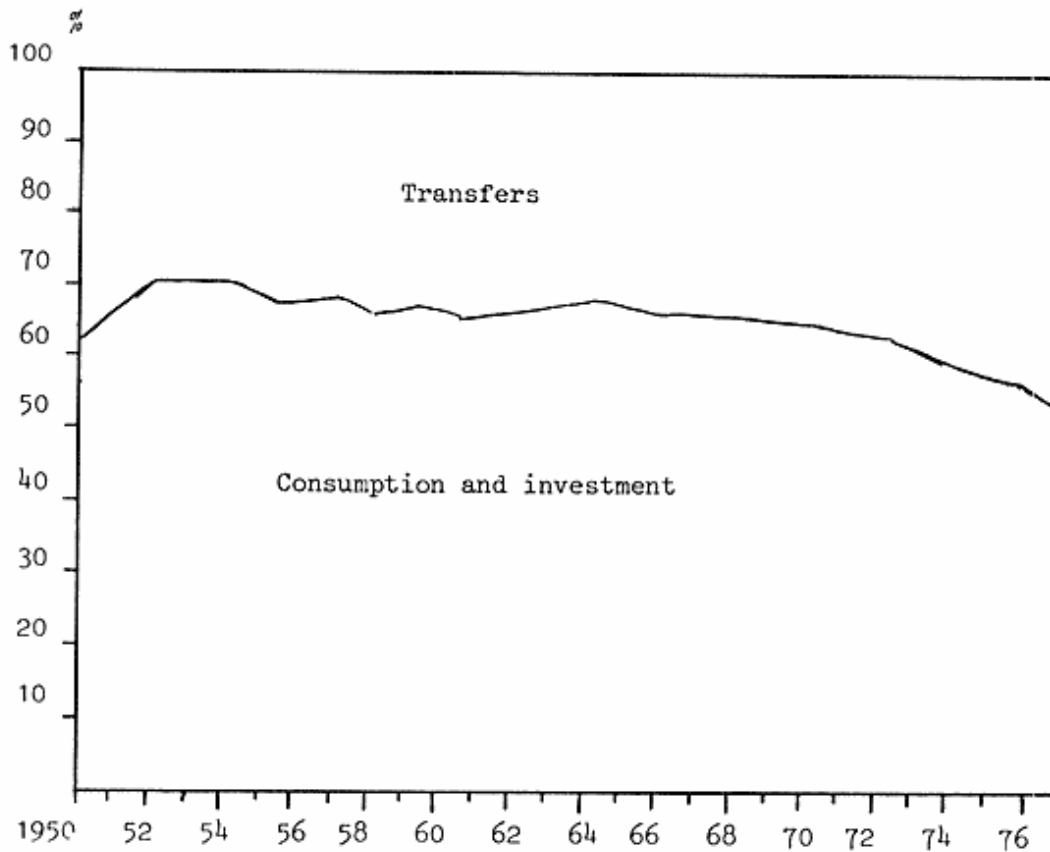


Figure 6. Public Expenditure 1950-1977

Source: Swedish National Accounts.

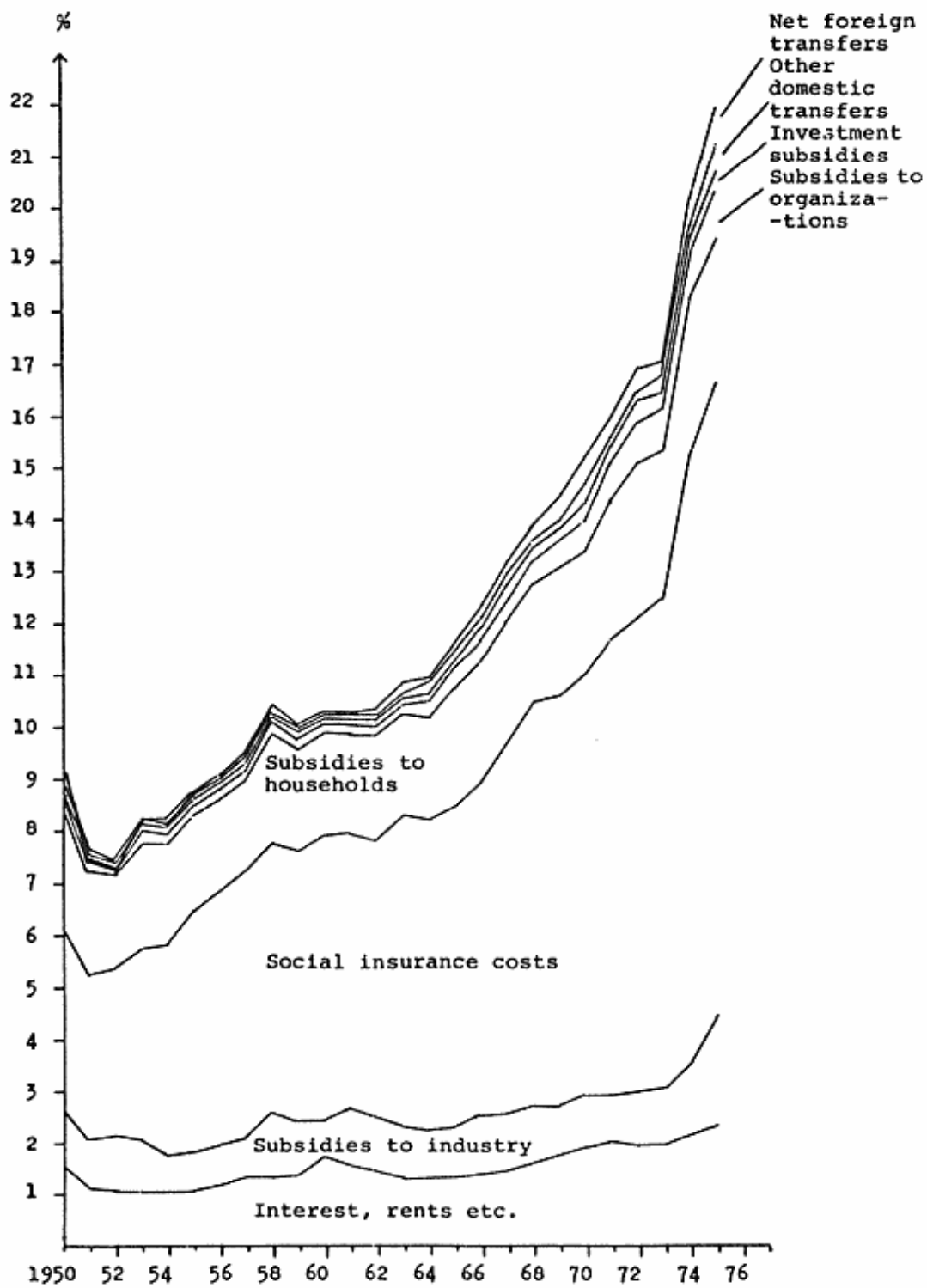


Figure 7. Transfers from the Public Sector in Percentage of GNP 1950-1975.

Source: Swedish National Accounts

changing relationship between consumption and investment on the one hand and transfers on the other signifies a shift in the orientation of the activities of the public sector. Public bodies may engage in two types of action or in some combination of the two; on the one hand a public body may carry out activities on its own, i.e. *administrative action* or, alternatively, it may restrict itself to the regulation of activities, i.e. *regulative action* (Lane 1977). Consumption and investment are indicators of administrative action while transfers are indicators of regulative action. The public sector has increasingly become interested in activities which influence the activities of society without itself taking over these activities. More and more aspects of the life that is not organizationally part of any public body have become dependent on the intervention of public bodies. The various items that comprise transfers are shown in Figure 7.

The sharp increase in transfers is due to the rise in the number of and costs of social insurance programmes. 3% was allocated to such programmes in 1950 whereas by 1975 the corresponding figure had risen to 12%. However, at the same time the public sector has moved towards accepting greater responsibility for industrial life as well as other kinds of organization. Subsidies to both industry and to investment programmes now make up a significant part of the transfers, while the subsidies to private households have increased at only a moderate rate. The expansion of the costs of social insurance programmes shows the interdependency between the

Table 5. Social Insurance Payments 1976.

	%
Pensions	60
Supplementary pensions	16
Basic pension (state)	40
Basic pension (communal)	4
Social Insurance	37
Sickness benefits	27
Medical care	3
Private dental service	2
Drugs	3
Residual	2
Industrial Injury	1
Unemployment Benefits	2
Sum	100

Source: SCB (unpublished material)

public sector and society. The changes in demography and health have transformed the activity structure of the public sector, because the increase in the number of old people and sick people have made such programmes more costly (Table 5).

What goes in must come out. In the process of political budgeting the result is the allocation of resources to various items of expenditure. The main headings on the outcome side are: (a) consumption, (b) investment, (c) transfers, (d) financial savings.

The categories (a) and (b) may be analyzed into functions. Sometimes transfers are not included as proper parts of the public sector, because they are resources that in the final analysis are not disposed of by the public bodies. In any case a quantitative analysis of the resource utilization proper of the public sector may provide some insight into the growth of the public sector. Any theory that would account for the behavior of the public sector would require some kind of mathematical statement as to the growth rates of various functions and the programmes that make up these functions. Current theories concerning the dynamics of the public sector have been based on observations of simple statistics on the overall development of the public sector. A more refined theory about the growth of the public sector might show first how various programmes grow differently for different decades, and second how the rate of growth of one programme is related to the rate of growth in others as well as to that of GNP. Some programmes may pull other programmes along with them or alternatively may be dependent upon certain performance levels of other programmes.

Periods of decline and zero-growth may be analyzed in a quantitative fashion, isolating indicators of maturity of various programmes. The levelling off of some programmes may occur as a function of changes in GNP or of changes in other kinds of programmes. The distribution of allocation resources among the various parts of the public sector may, of course, be analyzed in a similar way.

One indicator of the expansion of the public sector is the rise in levels of public consumption: since the 1950s the rate of growth in public consumption has been rapid. There was a period of growth during the two World Wars, but nothing comparable to developments since 1945. (Fig. 8.)

The expansion of the public sector consists to a certain extent of an increase in traditional public obligations. Maintaining foreign and domestic security are, however, not the kind of activities that have expanded their share of the resources. The rates of growth in defence appropriations

Public consumption

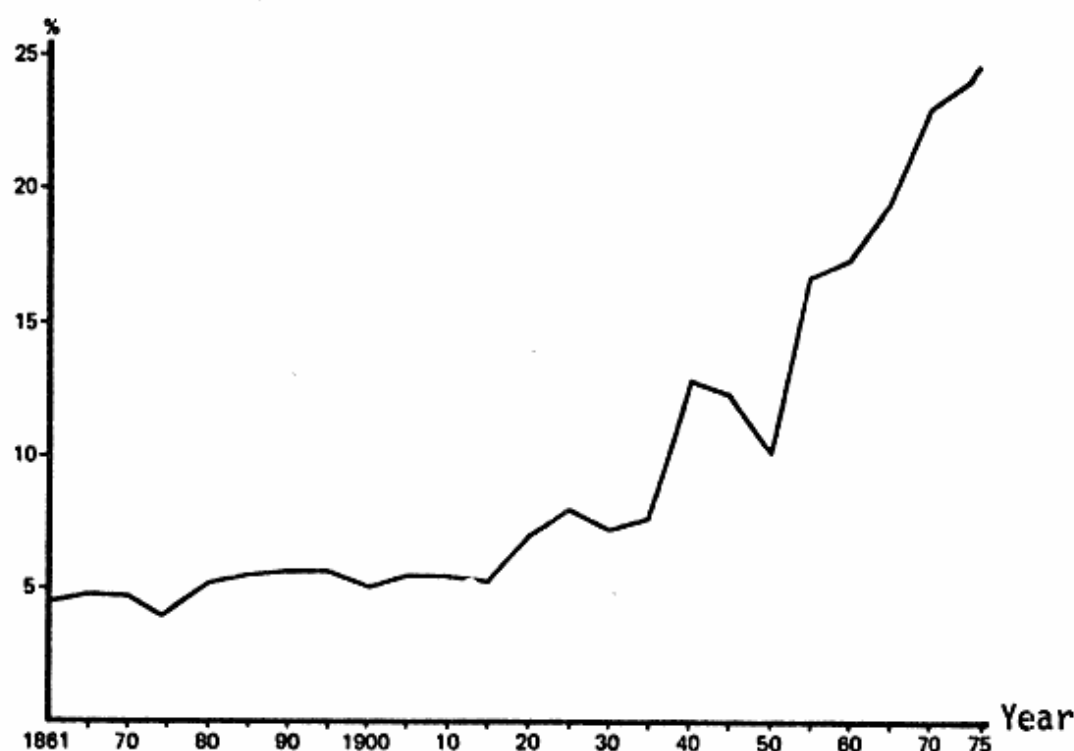


Figure 8. Consumption of the State and the Regional and Local Governments as a Percentage of GNP 1861–1975.

Source: Welinder, 1976

have been significantly lower than the general growth of the public sector, but spending on civic order has increased at the same rate as the increase in public consumption. In 1975 1/5th of the total consumption expenditures of the public sector was allocated to the traditional function of maintaining internal and external order. Since most of these costs are borne by the state, 52% of state consumption was absorbed by that function. (Fig. 9.)

Services such as internal and external order are typical of the public sector, because they are genuine public goods. A large part of the Swedish public sector is, however, oriented towards consumption purposes that have not been regarded as inherently part of public sector activities. Education, health care, and cultural activities can be part of the private sector. In Sweden various public agents are responsible for such functions, and these responsibilities explain most of the expansion in public consumption since the Second World War. Between 1963 and 1975 public

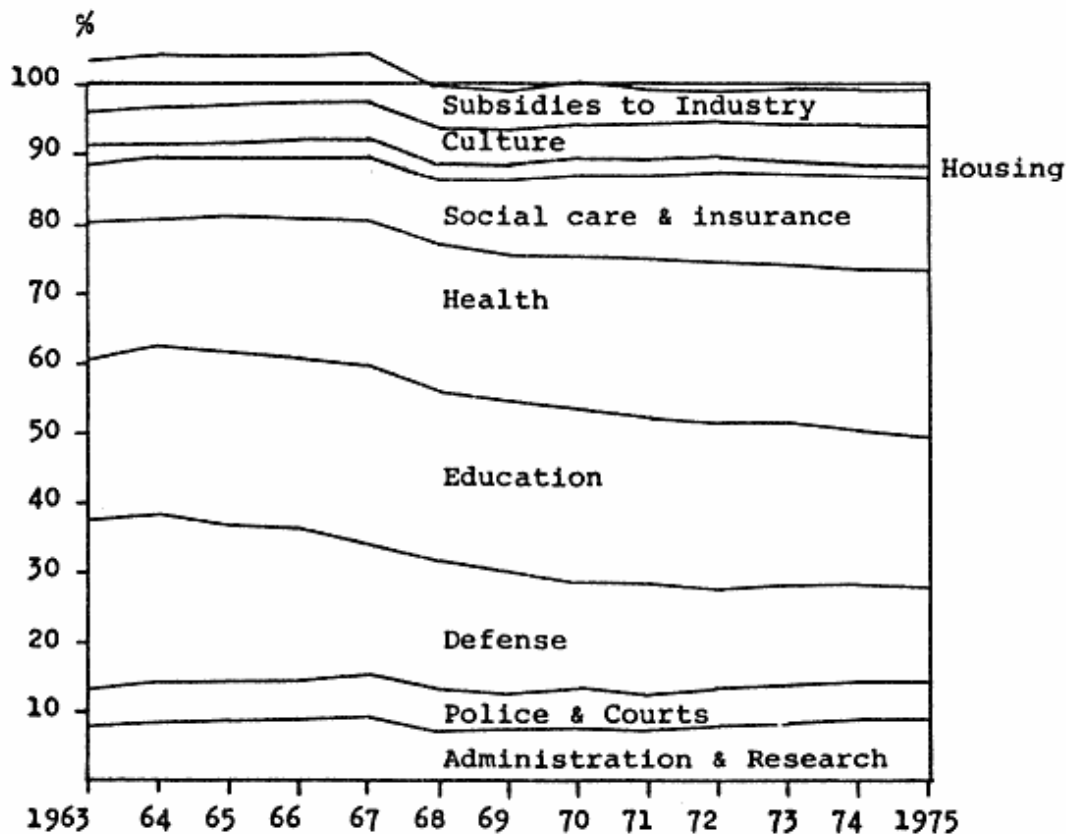


Figure 9. Consumption Purpose of the Public Sector 1963-1975.

Source: Swedish National Accounts.

consumption grew by about 8% of GNP and 6% of the latter went to social care, health care, and education. In 1975 public consumption amounted to 25% of GNP and these three functions made up 15% of GNP.

The regional and local governments are heavily involved in welfare functions, while the state divides its consumption on a roughly equal basis between traditional objectives and the welfare functions. Some 80% of the consumption at the regional and local levels is oriented towards social care, health care, and education. Since the rate of growth of social care and health care expenditures is greater than that of other programmes, the allocation pattern involving the state and the regional and local governments has changed over time. The investment structure within the public sector is roughly parallel to the consumption patterns described previously and it does not significantly change the expansion of resource utilization at the regional and local levels at the expense of state resource utilization.

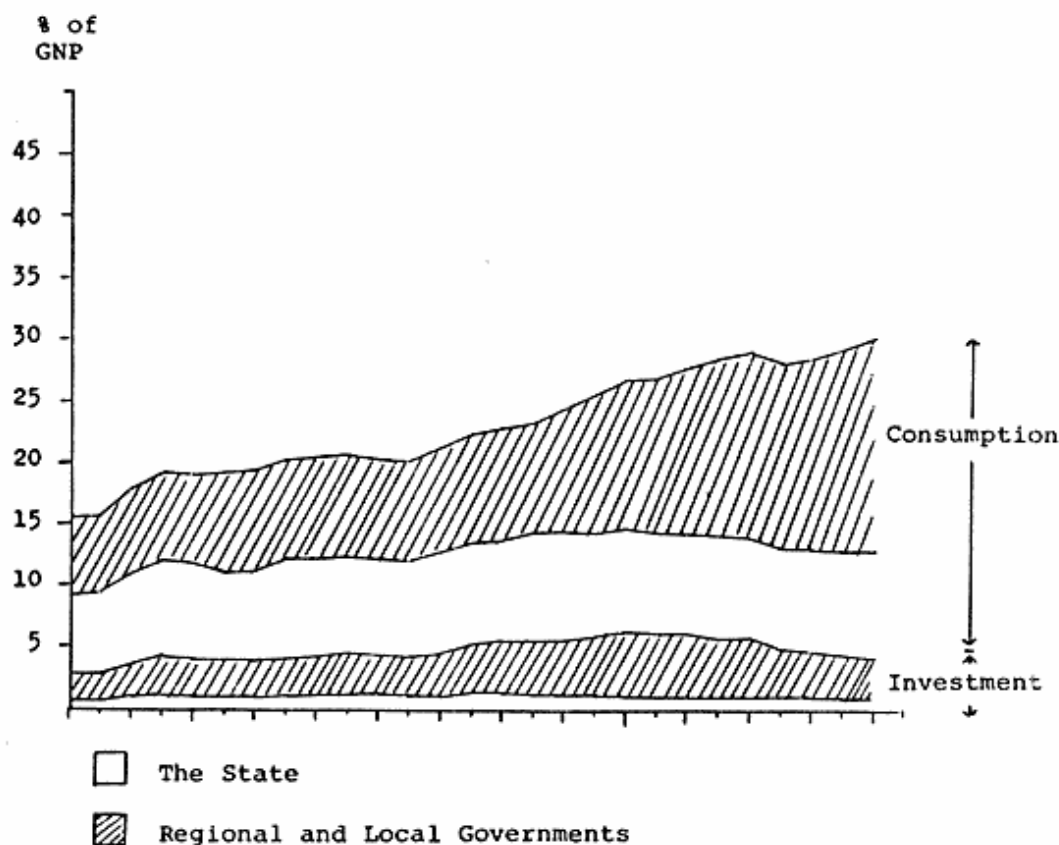


Figure 10. Consumption and Investment of the Public Sector 1950-1976 in Percentage of GNP.

Consumption and investment by regional and local governments have increased at a faster rate than state consumption and investment. Since 1950 state consumption as a proportion of GNP has increased by only a few percentage units, whereas the non-state part of public consumption has tripled. (Fig. 10.)

Thus, public resource utilization has increased as a percentage of GNP, and that growth is a function of the rise in consumption and investment of the regional and local governments. Because health care has grown to become the largest consumption item the regional governments have become large consumers. (Fig. 11.)

5. Conclusion

The behavior of the public sector is an interesting area for administrative research, because the unit for investigation is anything but static. Quan-

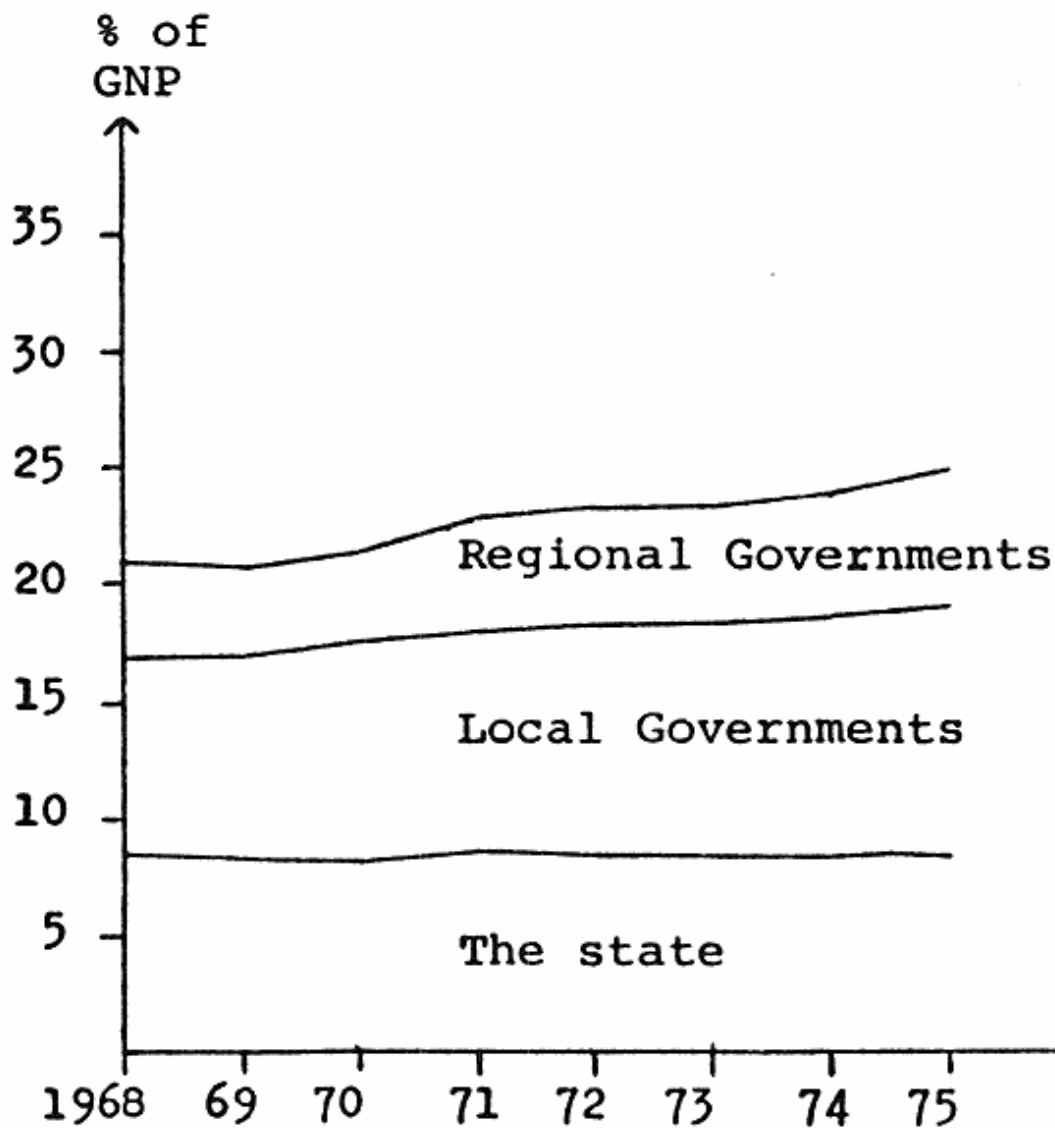


Figure 11. Public Consumption in Percentage of GNP 1968–1975.

titative data on the public sector may be handled in a scientific way, i.e. treated by means of general 'lawlike' statements, which express various properties of the unit. Quantitative information on growth rates of various functions indicates the development of societal preferences. Data on the input side of the system of political budgeting illustrate the changing relationship between the public and the private sectors. Data on the movement of resources within the public sector between various agents and their subagencies indicate one aspect of the transformation of power in society. By means of a system of equations expressing determinants of some of the major variables of the system of political budgeting, its

behavior may be explained and predicted. The public sector may be approached as a system of political budgeting, extracting resources, moving them around within the system, and finally disposing of them. Such a system is an administrative system, behaving in an orderly fashion which may be expressed by quantitative statements, because the unit of measurement is money. The system of political budgeting is a conceptual structure for the analysis of the public sector as an input and output system. Its main variables include:

S = the system of political budgeting

I = taxes and charges

O = services and transfers

A = agents involved in the processing of inputs into outputs

E = the environment of S

Macroproperties of S = size and growth of I, O and A; the determinants of size and growth and so on; transformation of inputs into output; the development of the relationships of the various agents;

Microproperties of S = size and growth of the various parts of I, O and A; the determinants of taxes and charges as well as the different appropriations

Phenomena so diverse and complex as these may be approached in terms of several different models. One of the many possible perspectives is the one outlined here stressing the way the public sector administrates resources as measured in money. It is hoped that such administrative behaviour may be expressed by quantitative statements and analyzed in a scientific way.

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Macroproperties of S = size and growth of I, O and A; the determinants of size and growth and so on; transformation of inputs into output; the development of the relationships of the various agents;

Microproperties of S = size and growth of the various parts of I, O and A; the determinants of taxes and charges as well as the different appropriations

Phenomena so diverse and complex as these may be approached in terms of several different models. One of the many possible perspectives is the one outlined here stressing the way the public sector administrates resources as measured in money. It is hoped that such administrative behaviour may be expressed by quantitative statements and analyzed in a scientific way.

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