FINANZARCHIV

BEGRÜNDET VON

GEORG VON SCHANZ

FORTGEFÜHRT VON

HANS TESCHEMACHER

HERAUSGEGEBEN VON

FRITZ NEUMARK

NEUE FOLGE

Band 23

Mit 14 Abbildungen

1963/64

J.C.B. MOHR (PAUL SIEBECK) TÜBINGEN

FINANZARCHIV

Begründet von
GEORG VON SCHANZ

Fortgeführt von
HANS TESCHEMACHER

Herausgegeben von
FRITZ NEUMARK

NEUE FOLGE

Der Band umfaßt 3 Hefte von je 180–200 Seiten
Abonnementspreis des Heftes DM 24.–, Einzelpreis DM 27.–

Die Aufnahme von Beiträgen und Besprechungen geschieht unter der selbstverständlichen Voraussetzung, daß der Verfasser nicht in einer anderen Zeitschrift denselben Gegenstand behandelt. – Anfragen und Manuskriptsendungen sind zu richten an: Prof. Dr. Dr. h. c. Fritz Neumark, Frankfurt/M., Humperdinckstraße 9

Mit der Überlassung des Manuskripts überträgt der Verfasser dem Verlag auch das Recht, die Herstellung von fotomechanischen Vervielfältigungen in gewerblichen Unternehmen zum innerbetrieblichen Gebrauch nach Maßgabe des zwischen dem Börsenverein des Deutschen Buchhandels und dem Bundesverband der Deutschen Industrie abgeschlossenen Rahmenabkommens vom 14. 6. 1958 zu genehmigen. Das Abkommen sieht vor, daß 50 Prozent des Reinerlöses zugunsten eines Urheberfonds verbucht werden.

©

J. C. B. Mohr (Paul Siebeck) Tübingen 1963

Alle Rechte vorbehalten. Fotomechanische Vervielfältigungen zum innerbetrieblichen oder beruflichen Gebrauch sind nur nach Maßgabe des zwischen dem Börsenverein des Deutschen Buchhandels und dem Bundesverband der Deutschen Industrie abgeschlossenen Rahmenabkommens 1959 und des Zusatzabkommens 1960 erlaubt. Werden die Gebühren durch Wertmarken der Inkassostelle für Fotokopiegebühren beim Börsenverein des Deutschen Buchhandels e.V. entrichtet, so ist für jedes Fotokopierblatt eine Marke im Betrag von 0,30 DM zu entrichten.

Printed in Germany

Satz und Druck H. Laupp jr Tübingen

Widmung. Von Professor Dr. Dr. h. c. Fritz Neumark, Frankfurt/M. – New York/USA 1

ABHANDLUNGEN

Zur jüngeren Entwicklung der Wohlfahrtsökonomik. Von Professor Dr. Theodor Wessels, Köln 3

Über das Objekt wirtschaftlichen Handelns und der Nationalökonomie. Von Professor Dr. Boris Ischboldin, St. Louis/USA 11

Das Verhältnis zwischen gesellschaftlicher und steuerlicher Gerechtigkeit bei Adolph Wagner. Von Professor Dr. Woldemar Koch, Tübingen 36

Das Gerechtigkeitspostulat in der Besteuerung. Von Professor Dr. Günter Schmölders, Köln 53

Lassalles Steuer-Streitschrift, 1863–1963. Von Professor Dr. Dr. h. c. Fritz Neumark, Frankfurt/M. – New York/USA 66

Fortsetzung auf Seite 3 des Umschlages

The Growth of Government Expenditure in Germany since the Unification

by

Suphan Andic and Jindřich Veverka*

I. Introduction and Summary 169
II. Conceptual and Statistical Problems 172
III. The Secular Growth of Government Expenditure 178
IV. Changes in the Structure of Government Expenditure 197
V. Conclusions 213
VI. Statistical Appendix 223

I. Introduction and Summary

The collectivisation of economic decisions is one of the most important phenomena of our time. While economic theory deals mainly with the market orientated behaviour of the individual, between a third and a half of the total output is controlled by public authorities in an economically developed country. The purpose of this paper is to *measure the growth of the public sector in Germany from its period of unification until today.*

The problem of measuring secular changes in economic aggregates can be divided into three parts: firstly, the determination of the concept; secondly, the collection of the data; and thirdly, their interpretation. We have abstained from a general discussion of the concept of government expenditure as we

* The authors are respectively Assistant Professor of Economics, University of Puerto Rico, and Lecturer in Econometrics, University of Glasgow. The bulk of the manuscript was prepared under the guidance of Professor *Alan T. Peacock* (now at the University of York) at the University of Edinburgh, and the whole study was made possible by a grant from the Ford Foundation.

The authors wish to express their indebtedness to Professors *Peacock* and *Wiseman,* joint directors of the project which covers the study of long-term changes in government expenditure in a number of countries. They acknowledge the help received from a number of German specialists in public finance and from public officials, notably Professors *Neumark* and *Senf,* Dr. *Otto Schörry* and Frl. *Ingeborg Sievers,* and the library of the Statistisches Bundesamt.

have adopted that of other studies[1]. The conceptual problems discussed in the first part of the paper are mainly limited to those arising out of particular conditions specific to Germany. The subsequent parts of the paper deal with the interpretation of the statistical findings; aggregate expenditure is considered first and the changes in the composition later. The empirical evidence is then discussed against *Wagner*'s "Law of Increasing Extent of State Activity"[2] as an example of a general theory of government expenditure, and the size and the structure of government expenditure is subsequently explained by reference to the ideological evolution and the nature of the political process, as well as to secular changes in the average size of the production and the consumption unit. The description of the sources and of the computational procedures have been left for the Statistical Appendix at the end of the paper, which also includes detailed statistical tables.

The statistical findings are limited to the expenditure side of the spending process of public authorities. Although the aggregate expenditure is identically equal to the aggregate revenue, *no attempt has been made to obtain a statistical picture of the revenues,* and this might be regarded as a serious shortcoming. It was the problem of how to finance given expenditure rather than that of how to spend the available resources which determined to a great extent the evolution of many political institutions. The importance of revenue is recognised in the explanatory hypothesis offered by *Peacock* and *Wiseman* for the growth of public expenditure in Britain[3], which relates the changes in expenditure to the displacement of the "tolerable" burden of taxation. It can be argued that the problem of financing government expenditure determined the political life in Germany to a much greater degree than elsewhere. The political developments prior to 1913 were greatly influenced by the struggle between the Reich and the Länder for the sources of revenue, and the repercussions from the methods of financing expenditure during the First World War and even before, continued to be felt in the inter-war years[4]. Although the sources used for our expenditure estimates give, in most cases, the corresponding information about revenue, the task of estimating revenue is far from straightforward. This is due to the complicated system of sharing different revenues, best described by the German term "Finanzausgleich". The collection and interpretation of revenue estimates presupposes a detailed discussion of these financial relationships which is beyond the scope of this paper[5].

The limitations of the statistical findings to expenditure estimates hinders the formulation of a general hypothesis explaining the growth of the pu-

---

[1] For a detailed discussion of the concept of government expenditure see *Alan T. Peacock* and *Jack Wiseman:* The Growth of Public Expenditure in the United Kingdom, N.B.E.R., Princeton 1961, pp. 3–9.

[2] *Adolph Wagner:* Grundlegung der politischen Ökonomie, 3. Auflage, Leipzig 1892, p. 895.

[3] Op. cit., pp. 24–28.

[4] These methods were partly responsible for the post-war inflation as well as class antagonism. See *Otto Schwartz:* Finanzpolitik in Reich, Staat und Gemeinde, Stuttgart 1919, p. 14.

[5] This is the subject of a paper by the authors, now in preparation.

blic sector in Germany. But even in the case of our findings including the revenue figures, such a hypothesis would have to take into account all relevant political, social, and economic factors. The impossibility of constructing at this stage of the development of social sciences an exhaustive model of the socio-economic system does not prevent us from relating the changes in government expenditure to other statistical indicators of economic growth, or, in the end, to secular tendencies of non-economic character. The growth of government expenditure will be discussed against a background of a changing population and of a growing output. Since the territorial delimitation of Germany has been altered twice as a result of the upheavals of war, our estimates are not directly comparable between the various periods of different geographical size. It is not only government expenditure that was affected by these changes, but also our two other series. However, we have assumed that government expenditure per head of population or alternatively the proportion of government expenditure to total output is directly comparable between different periods. The changes in territory may, of course, bring about an increase, or a reduction, in the government expenditure per head, or in the proportion of government expenditure in the G.N.P. The effects of changing territory on government expenditure are not analysed in this study as the conceptual and statistical difficulties are insurmountable. Some of this expenditure cannot be allocated to any particular territory, while for others there are no estimates available. The deflation of current estimates of government expenditure for price changes presents formidable difficulties of both conceptual and statistical character. The conceptual difficulties are due to the absence of market valuations of government output. The necessity to value this output at some values observed in the private sector introduces an element of ambiguity about the actual amounts of services provided by the public authorities. This difficulty is additional to the general index number problem which is not to be neglected in comparisons over such long periods. The statistical difficulties are due to the paucity of price information, especially in the earlier years. It proved impossible to deflate different components of government expenditure by appropriate individual indexes, and the use of a single index reflects rather the availability of information than any conceptual consideration.

Between 1881, the first year for which we have complete estimates for all levels of government, and 1958, the *total expenditure* rose from 1.6 to 86.5 billion DM[1]. In 1872, the first full year of the existence of the new German Reich, the expenditure must have been running at a higher level, probably no less than 2.2 billion DM. But 1872 was exceptional as almost half of that amount was financed out of the payment extracted from defeated France. We have adopted 1.2 billion DM as the level of permanent expenditure in 1872. The rise in government expenditure since then can be partly accounted for by the *depreciation of the currency*. The price level, however, does not seem to have risen more than three times. Real government expenditure went up more

[1] Throughout the text we have used billion as equal to thousand million, and the abbreviation DM for the currency unit valid in any given period.

than thirty times between 1872 and 1958, in spite of the reduction in the territory by more than half. The growth of the public sector was not an isolated phenomenon – a considerable increase in output was accompanied by *rising population*. The population of the reduced territory in 1958 was one-fifth above that of the Reich at the time of its foundation, and the total output, measured in real terms, had increased almost six times. Thus the average citizen in the Federal Republic in 1958 was producing and consuming more than four times as many goods and services as his counterpart some ninety years earlier. But out of a thousand DM worth of additional goods, more than half was either received from the government or was financed from government transfers. This does not take into account the amount of goods and services he was purchasing from enterprises run by the government. More exactly, the additional government expenditure represented 54% of additional output. The share of government expenditure in the G.N.P. had risen, during that period, from less than 10% to 44%. The citizen of the newly created Reich might not have been surprised if these findings had been revealed to him. About the same time *Wagner* discovered his Law[1]. But he would have shown an extraordinary foresight if he had guessed that his British contemporary, known to him as the defender of the laissez-faire doctrine, would take the same proportion of additional output in the form of government expenditure[2]. We shall not pursue this parallel between the two countries which in many other respects have been so unlike. The parallel, however, might not be purely accidental. The extension of the quantitative studies of the growth of public sector for other countries, now under preparation under the direction of the two authors of the British study, might reveal other similarities important to the student of both political developments and economic growth.

II. Conceptual and Statistical Problems

Before the reader is presented with the statistical findings we propose to discuss briefly a limited number of problems encountered in the evaluation of government expenditure in Germany. An exhaustive discussion of the statistical and conceptual problems arising from such studies is not aimed at. Some of them will be mentioned in the discussion of the sources and methods in the Statistical Appendix, although it will be limited to the extent necessary for the explanation of the computational procedures adopted. In this section we shall consider in more detail four separate points which are in our view of special importance in the German case, namely (1) the definition of govern-

---

[1] According to *Herbert Timm, Wagner* formulated his Law for the first time in 1863. See *Timm*'s detailed discussion of the Law under the title "Das Gesetz der wachsenden Staatsausgaben", Finanzarchiv, N.F. Band 21, 1961, pp. 201–247.

[2] Between 1870 and 1955, the average income per inhabitant in the U.K., valued at 1900 prices, rose by £ 43, out of which £ 23 went towards government expenditure. This calculation is based, for 1870, on estimates from a forthcoming study by *J. Veverka:* The Growth of the Public Sector in 19th Century Britain, and for 1955 on estimates given by *Peacock* and *Wiseman,* op. cit.

ment and the distinction between trading services and non-trading services; (2) the comparability of the estimates before and after 1913; (3) the effects of the territorial changes and per capita estimates; (4) the elimination of price changes and the productivity assumption.

1. The definition of government and the distinction between trading and non-trading services

The definition of the public sector can be based either on a legal or an economic criterion. As it has been argued elsewhere[1] the *legal* definition is irrelevant for our purpose unless it has an operational significance, i.e. unless public authorities behave in a manner different from that of private decision-making units. The difference in their behaviour is a consequence of their legal and fiscal sovereignity – they are not subjected to the condition of budget restraint. It cannot, however, be assumed that other bodies of different legal status do not act in a similar way. The *economic* criterion of the absence of budget restraint is then wider than the legal one, and the distinction between the private and public sector becomes blurred. A clear separation of the two sectors has been historically achieved only in some countries and at the end of a long political development. This distinction was alien to the feudal conception of political and social organisation and has been once more confused in modern totalitarian systems of whatever complexion. The extension of the public sphere in such systems is brought about not only by the outright extension of the sovereignity of public authorities, but also by the integration of private organisations into the government apparatus. Neither the Nazi Party in Germany nor the Communist Party of the Soviet Union could be classified as "governments", and yet who would doubt their sovereignty? This confusion affects the estimates for the 1930's. The Nazi government carried out many of its functions through non-governmental organisations such as "Arbeitsfront", "Winterhilfswerk", and others. We have not included them in our estimates and consequently it could be claimed that we have underestimated the size of the public sector during that period[2].

The second problem connected with the definition of the public sector is the exact obverse of the first. Although sovereign, a public authority can provide goods and services through the market. The legal characteristic is not followed by the economic characteristic, for sovereignty does not remove the budget restraint. This is taken into account in the usual procedure of excluding trading services from government expenditure. Current expenditure on trading services is offset by current revenue, and only deficits and expenditure on capital account are included. But a clear distinction between trading and non-trading services can only be drawn if public authorities consciously aim at maintaining such a distinction. Although the government of the states were

---

[1] *J. Veverka,* op. cit., Chapter I.

[2] *Otto Nathan* estimated the revenue of these non-governmental organizations in 1938 at no less than 10% of total government revenue. See his "Nazi War Finance and Banking", N.B.E.R., New York 1944, pp. 59–64.

not unaware of the existence of profits in public enterprise[1] the paternalistic and militaristic mood of the old Reich could hardly fail to penetrate into this sphere of government activities. Profitability could hardly have been the only criterion for managing the railways, for example. Many other considerations influenced the decisions of Railways Directorates, such as defence requirements or social considerations. Where such non-commercial considerations are predominant, the cost of such services should be included in government expenditure. Our estimates of government expenditure, which excludes as far as possible all current expenditure on trading services, may thus underestimate the actual extent of the public sector.

2. The comparability of the estimates before and after 1913

The lack of comparability between the periods before and after 1913 has both *statistical* and *conceptual reasons*. As will be discussed in more detail in the Statistical Appendix, there is a break in the available statistical sources around 1913. The estimates until 1913 include items which should not properly appear there, such as some double counting and a considerable amount of current expenditure on trading services. These items could only be removed with great effort, if at all. But there is an additional problem introduced by the change in the definition of public sector around 1913 which is, moreover, complicated by a reduction in the territory. Prior to 1913, most of the trading services provided by public authorities were not separated from their budgets. For example, the railways and postal services were included in the budgets of the state governments which were also responsible for a great many other productive enterprises. The first set of estimates, given in Appendix Tables A. 6 to A. 30, includes, therefore, all capital expenditure by state governments prior to 1913 which amounted to a considerable proportion of capital formation. After the First World War most of the public enterprises became autonomous and their accounts disappeared from the budgets and from the Financial Statistics. But the change in most cases was purely formal and did not affect the decision-making process. We have, nevertheless, not attempted to add capital formation by trading enterprises to the inter-war estimates, one of the reasons being the difficulty of obtaining data. On the other hand, we have computed "adjusted" estimates of government expenditure for the years until 1913 which exclude all capital formation by trading enterprises. These estimates, given in Appendix Table A. 35, seem to us to reflect better the long-term trend and we have therefore adopted them in the main text. The text tables also reproduce the "adjusted" estimates. Had we been able to exclude the other items mentioned above, i.e. double counting and some current expenditure on trading services, such series would be directly comparable with the remaining estimates. As this is impossible we have assumed that the per capita expenditure in 1913 on the total territory was equal to that on the 1925 territory. We have therefore increased the post-First World War estimates for

---

[1] Trading profits represented before the First World War between 40 and 60% of the total revenue of state governments. See *Otto Schwartz,* op. cit., p. 54.

1913 which refer to the reduced territory for the additional population of the old Reich. The total obtained in this manner still appeared substantially lower than the estimate of government expenditure, exclusive of capital formation by trading enterprise, based on pre-1913 sources[1]. We have then reduced the estimates for all the years prior to 1913 by the same proportion. The assumption of constant expenditure per head of population in 1913 for both old and reduced territory brings us to the next problem of territorial changes and of the meaning of per capita estimates.

3. Effects of territorial changes and per capita estimates

The major difficulty in the discussion of the secular growth of public sector in Germany is introduced by the territorial changes. The break in the statistics around 1913 is complicated by the reduction in the territory, and the Second World War brought an even greater change. The changes in territory can affect the level of governmant expenditure in two ways. Those expenditures which are linked to a particular territory are changed directly. At which level of government the expenditure becomes unallocable depends on the extent of the territorial change, but a great deal of the expenditure of central government cannot be allocated at all as the services provided are consumed collectively. Only the direct affects of a territorial change on allocated expenditure can be evaluated if the data are available. Although the expenditure on collective services cannot be allocated to any particular territory, we can eliminate the change by expressing it in terms of population (or alternatively of national income) on the assumption that the expenditure is distributed on the territory before the change in the same way as population (or national income). But even if this assumption is realistic enough, we have to take into account the indirect effects of a territorial change on expenditure in the interpretation of such estimates. Such a change shifts the equilibrium of economic and political factors determining the level of government expenditure. For example, a loss of important agricultural areas may result in a shift of political balance from agricultural to industrial interests. In consequence, subsidisation of agriculture may be reduced. Thus the direct change in the amount of agricultural subsidies paid out according to area or output is accompanied by a policy change, which is itself a consequence of the territorial change.

Neither time nor the necessary data were availabe to analyse the effects of the territorial changes on the level and composition of government expenditure in Germany. In the absence of any alternative, the interpretation of estimates proceeds on the assumption that the territorial changes have not affected per capita estimates. We have even based the "adjusted" series for the period before World War I on this assumption. The estimates actually obtained from the available statistics for 1913, old territory, are too high in

---

[1] In the case of state expenditure, the expenditure per inhabitant according to post-war estimates amounted to 85% of pre-war estimates, reduced by expenditure on capital account. In the case of local expenditure, the difference was lower, amounting to 11%.

comparison with those for the reduced territory. Even after deduction of capital formation in trading services, the change of definition and the loss of territory together would give a reduction of state expenditure by 24% and of local expenditure by 21%. The change in definition must have accounted for more than half of the reduction, yet the assumption of constant expenditure per head before and after the change is also not realistic, as the average expenditure per head in Eastern territories lost after World War I must have been different from the average in the rest of the Reich. But even if the first change in the German territory had no material effects on the level of expenditure, the changes after 1945 must have had such effects. Germany came out of World War II not only substantially reduced but also profoundly modified in its economic and social structure. The losses after 1918 amounted to 13% of the territory and 11% of the population as against 52% of the territory and 44% of the population lost after 1945. The lower average population density of the lost territories indicates that they were not average in other respects too. That these areas were actually less developed in comparison with the remaining territories is demonstrated by the effects of the division on the Gross National Product. In the first case, the G.N.P. was reduced by 8% and in the second, by 41%. On the assumption that the marginal income elasticity of demand for services provided by government is approximately unity or greater, the losses of territory shifted the per capita estimates upwards[1]. This impairs the comparability of the per capita estimates between periods of changing territory.

The adjustment of total expenditure for population changes is only meaningful if there is a causal relationship between the two aggregates. Obviously such a relationship exists. As we shall argue later, the growth of population in towns is one of the permanent factors explaining changes in the size of the public sector[2]. But the timing of the changes in the two aggregates becomes important once the estimates refer to relatively short periods such as one year. Rapid changes in population, such as the influx of refugees into the Federal Republic, bring about a considerable change in expenditure per head unless it is immediately followed by a corresponding change in total expenditure. In such a situation the per capita estimates themselves introduce changes in government expenditure which cannot be explained by reference to the factors determining the level of expenditure. This consideration is relevant for the period after 1945 when the population of the Federal Republic suddenly expanded with the influx of refugees. Though we shall be using the per capita estimates as the indicators of the secular growth of the public sector, these considerations must be kept in mind.

---

[1] As the official estimates calculated according to the same method do not cover both original and reduced territory either in 1913 or 1938, it is impossible to evaluate the effects of the territorial changes on the level of government expenditure. The only indication that these changes have actually shifted the secular trend in government expenditure upwards is implied in the estimates of expenditure on the territory of the Federal Republic for 1936, reproduced in O.E.E.C. "Statistics of National Product and Expenditure", No. 2, Paris 1957, p. 62.

[2] The concept of "permanent" influences on government expenditure is discussed in detail by *Peacock* and *Wiseman,* op. cit., pp. 21–24.

4. The elimination of price changes and the productivity assumption

Current estimates of government expenditure reflect the real amount of public services only imperfectly as the unit of measurement changes over a time. The elimination of these changes comes up against two sets of problems, namely the statistical problem of the availability of the appropriate price indexes and the index number problem. Further, in the case of government expenditure, we encounter an additional problem introduced by the absence of any direct valuation of the output of public services.

The first step in the elimination of price changes is *the choice of a suitable price index.* An index of prices of government inputs is usually not available, and that of outputs conceptually impossible. The practice of using an index derived from other series, which can be considered as being subjected to the same price movements, is not only quite usual but often the only possible method. Thus most of the study of government expenditure uses either a cost-of-living index or an index of wholesale prices. This is a very crude method[1] and a certain degree of refinement can be obtained by using separate indexes for individual components of government expenditure[2]. Our choice of the price index for the period until 1925 was dictated by the absence of any price information other than that for a limited number of commodities, with foodstuffs predominating. The index reflects the secular trend of the price of government output only approximately, and introduces distortions of its own into the estimates as it may be expected to show a larger short-term fluctuation than an "ideal" index. Thus, for example, the index fell by almost a third in one decade after 1872 which certainly exaggerates the growth of real expenditure during that period. The index used for the period after 1925 may be expected to be better at least in this respect, producing fewer oscillations. For that period we have used the index implied in the current and constant estimates of national income. As far as the long-term trend is concerned, it will be correct if the productivity and the factor rewards in the public and private sector have changed to the same degree. Assuming that competition has kept the factor rewards more or less equal in both sectors and that the factor proportions have not changed, the relative prices of the two respective outputs would remain constant. In such a case the price index of private output would reflect the prices of the public output if such output were valued in the market. All studies, using an index of private outputs for deflating government expenditure, implicitly or explicitly assume *identical productivity changes in the private and public sectors.* Has this assumption any empirical basis? If not, we must adjust the price index for the productivity discrepancy in the two sectors. On the extreme assumption of constant productivity in the public sector, such an adjusted price index would be identically equal to the price

---

[1] *Solomon Fabricant* (The Trend in Government Activity in the United States since 1900, N.B.E.R., New York 1952, p. 217): "the frequently used expedient of converting government expenditure to constant value dollars by a consumer price index is likely to produce considerable distortion".

[2] This method was used by *Peacock* and *Wiseman,* op. cit., pp. 155–158.

index for government inputs, e.g. wages in public employment[1]. That the productivity in the public sector is a purely conceptual quantity does not diminish its importance. Later on we shall argue that the relative productivity changes have accounted partly for the secular growth of the public sector.

III. The Secular Growth of Government Expenditure

The growth of the public sector in Germany since the creation of the Reich in 1871 will be discussed in this section. The first question is to what extent the estimates reflect the quantities of publicly provided or financed goods and services as most of the explanatory hypotheses refer to these quantities. The answer depends on changes in productivity. Although these cannot be measured, there is a strong presumption that productivity in the public sector is rising at a slower rate than in the private sector. In such a case the "*productivity lag*" accounts partly for the secular growth of the public sector. We have kept its discussion separately as nothing precise either about its total effect over the whole period or in different periods can be said. The effects of other factors, the most important among them being the growth in income, are discussed for the period as a whole and then subsequently in more detail for individual periods. The changes in the structure of government expenditure will be considered separately in the following section.

1. The "productivity lag" as a growth factor

A series of government expenditure, deflated by an appropriate index, indicates changes in real quantities of goods and services, transferred from the private to the public sector, i.e. it measures government consumption. On the other hand, most of the hypotheses explaining secular changes in government expenditure are formulated in terms of the quantities of goods and services provided by public authorities to the consumer. The estimates of government expenditure do not directly indicate such quantities, but their cost[2]. In comparisons over a time, the series of input diverges from that of output as pro-

[1] Strictly speaking, we should take into account prices of all inputs, yet statistically it is very difficult to obtain price indexes other than for wages. As an approximation such an index is good enough, as between half and three quarters of government expenditure consists of wages and salaries.

[2] It may be argued that the consideration of productivity changes is relevant only for that part of government expenditure which represents government resource use. In transfer payments the cost is identically equal to the amounts provided. Yet when we try to deflate the current amount of transfers this identity does not hold any more. The real amounts of resources which the tax payers have to give up is not identical to the real amount of resources the transfer receivers can purchase, unless the consumption function of the two groups is identical. If the transfer payments are spent on products of those industries where the productivity is lagging behind the national average, the transfer payments must grow in order to keep the "real" amounts of transfers constant. In this sence, the growth of transfer payments may be partly accounted for by a "productivity lag" as in the case of goods and services.

ductivity changes. The general practice of deflating government expenditure by an index of prices of private output implicitly attributes the same increases of the productivity to the public as to the private sector. Nevertheless, there is a strong presumption that in the periods of rapid economic growth connected with the shift of resources from agricultural to industrial employment, *the productivity in the public sector rises at much slower rates than in the private sector.* The numerical value of this "productivity lag" is impossible to establish, but even a "productivity lag" of a very small magnitude would account for an important part of the rise in government expenditure, assuming that the consumer chooses the same proportion of publicly provided goods and services irrespective of their costs. As the total government expenditure, valued at constant prices, had been growing on the average at the rate of 5% annually between 1872 and 1958, a "productivity lag" of a mere 1% would account for one fifth of the increase. A "productivity lag" of 2.5% would have accounted for as much as half the growth. In such a situation the share of publicly provided goods and services in total output would have been relatively diminishing. We do not suggest that this has been actually the case but a "productivity lag" of at least 1% is highly probable.

The actual process of the extension of the public sector shows that public authorities often take over declining sectors of the economy where the productivity may be expected to lag behind other sectors. Recent examples have been the transport system, energy, and agriculture. In most cases the extension of the public control does not take the form of their outright integration into the public sector, the alternative being subsidization or nationalization under the form of a public corporation. In some cases, nevertheless, such integration takes place[1]. The "productivity lag" adds to the relative growth of government expenditure directly through a higher relative cost of providing a given output, and indirectly through a transfer of unprofitable sectors under public control. Although in the discussion of the secular growth of government expenditure in the rest of this paper the "productivity lag" will not be mentioned any more, the reader must keep in mind that the contribution of the other growth factors would be diminished to the extent of this lag[2].

---

[1] An example of such an integration of a declining industry into the public sector was the transfer of roads in Britain from Turnpike Trusts to local authorities after 1830, when the railways took away most of the profitable long-distance transport. Although the reversal of the relative position of the two forms of transport a century later led to the nationalisation of the railway system rather than to the integration into the public sector, it seems probable that ultimately the railways will be partly provided as a public, i.e. non-trading, service.

[2] Another growth factor which contributed to the secular growth of the public sector has been the *shift from unpaid, honorary officials to professional civil servants.* Local administration prior to 1913 depended heavily on such honorary officials. According to *Silbergleit,* out of 87,000 local officials in Prussian cities in 1908, 37,000 were honorary ones (*H. Silbergleit:* Preußens Städte, Berlin 1908, p. 176). Yet as we have been unable to estimate the overall quantitative importance of this shift towards professional civil servants on the growth of the public sector, we have left it out of our discussion.

2. The historical background

The period covered by the estimates fits well into both the history of Germany and that of other countries. In Germany it coincides with the re-establishment of a central authority by *Bismarck*. Although a fully-fledged central administration did not develop until after the First World War and even customs duties were collected for the Reich by fiscal authorities of the States, new function and responsibilities assumed by the Reich contributed decisively to the growth of the public sector. They had a modern character pointing towards the military-welfare states of today. Defence was the main pre-occupation of the Reich from its foundation, and a decade after the unification the central government took first steps towards the welfare state by the social security legislation of 1883 and 1887.

The unification marks a new epoch in the development of the German economy as well as a new ideological situation. Although the original impulses behind the transformation of Germany from an agricultural to an industrial country can be traced back to the integration of the market under the Zollverein in 1833, economic growth accelerated markedly after 1871. According to *Hoffmann,* the rate of growth almost doubled in the 1870's compared with previous decades[1]. At the time of the unification, the agricultural character of Germany had not yet been changed and the main industrialization came much later[2]. The relatively low level of industrial development is reflected in the population structure. Almost two thirds of the population were resident in rural areas and these areas, together with towns of no more than five thousand inhabitants, accounted for about 90% of the total. We thus observe *the growth of the public sector in an economy during the process of industrialization and the related movement of urbanization.* We should therefore be able to draw general conclusions as to the effects of the industrialization on the size of the public sector. Yet the explanation must also take into account political and social factors and their reflection in the ideology of the time. The condition of ceteris paribus is not fulfilled in our case as the process of industrialization was taking place in a period of *declining liberal ideology.*

Liberalism strongly influenced public policy until the 70's. Economic growth was then taking place in a laissez-faire climate as is exemplified by the importance of the private initiative in the construction of the railways[3]. The influence of "statism" which, according to *Gustav Stolper*[4], has been one of the most important characteristics of the German economy, was then small. From the 1870's onwards, liberalism had been losing ground – and votes. A new epoch, characterized by the complementary forces of social reform and imperialism, began and Germany participated in this evolution at an earlier

---

[1] *W. G. Hoffmann:* Long-term Growth and Capital Formation in Germany, in: *F. A. Lutz* and *D. C. Hague* (edit.): The Theory of Capital, London 1961, p. 120.

[2] *F. Lütge:* Deutsche Sozial- und Wirtschaftsgeschichte, Berlin 1952, p. 297 and 373.

[3] In 1875, about half the Prussian railway system was still under private management. See *Gustav Stolper:* German Economy 1870–1940, London 1940, p. 73.

[4] Ibid., p. VIII and pp. 8–12.

date and to a much greater degree than many other countries. The impetus to economic growth after 1871 was closely connected with the outcome of the Franco-Prussian war. The victory brought a wave of optimism favourable to economic expansion as well as other gains, namely the extension of the economic potential through the annexation of Alsace-Lorraine and the capital inflow of five billion Francs in the form of the French War indemnity. The new ideological climate brought about interest in social reform. In 1872, the "Verein für Socialpolitik" was founded, including among its members *Adolph Wagner,* the author of the "Law of the Increasing Extent of State Activities". A decade later, a decisive step in this direction was taken with social insurance legislation.

Thus the growth of the public sector since 1871 reflects the ideological evolution as well as economic expansion. Both social reform and imperialism added directly to government expenditure. Moreover, the growth of the public sector was influenced by the *strong particularism of the constituent states.* This particularism reflected not only their resistance to a loss of power to the central authority but also the struggle between different regional groups and consequently the different economic interests in Germany. We cannot say to what extent the particularism retarded the growth of the public sector. Its influence is limited anyhow to the period prior to 1914 as Germany emerged from the First World War as a unified state.

3. Statistical findings presented

The statistical findings bear out the general characterization of the epoch of the 1870's. As shown in Table I, the "permanent" government expenditure was approximately 1.2 billion DM. This represented less than 8% of total output, which is a very low figure compared with the situation since then or with the share of the public sector reached at that time in the United Kingdom, which was considered the laissez-faire country par excellence of the 19th Century[1]. The expenditure of 1.2 billion DM excluded 1 billion DM financed out of the French indemnity. As the level in later years suggests, without such a windfall the Reich expenditure in 1871 would undoubtedly have been very near to the level of expenditure financed out of more orthodox sources than the indemnity, which we haven taken as the permanent level for the purpose of our discussions[2]. In three generations, economic growth, toge-

[1] In the same year, the proportion of government expenditure to G.N.P. was in the U.K. 10%. Even this must be considered a rather low level for the U.K. as during the first half of the century the proportion was substantially higher. (Based on the estimates by *J. Veverka,* op. cit.)

[2] The expenditure of 1.2 billion DM represents an approximation not only because we have deducted that part of the Reich expenditure which can be considered as directly connected with the French indemnity but also because it is not possible to obtain directly the level of expenditure of state and local authorities prior to 1881. We have assumed that the expenditure of these authorities had grown between 1872 and 1881 at a rate equal to the unweighted average of the rate achieved in the decade 1881–1891, and the rate of increase in Prussian state expenditure during the 1870's. For the latter see *W. Gerloff:* Die Finanz- und Zollpolitik des Deutschen Reiches usw., Jena 1913, p. 154.

make any prediction based on a single or a limited number of variables meaningless. The only general proposition which we can make with some certainty is that the greater the dynamism of the future, the more difficult it is to project the present trend. A slow and constant rate of economic growth, at least in the near future, may not drastically change the proportion of the public sector in total output but the constancy in this rate cannot be expected to hold either in the situation of a fast growth or of an economic stagnation. While the former may very well result in the long run in the reduction of the public share, the latter would lead undoubtedly to the opposite result.

VI. Statistical Appendix

The Statistical Appendix provides a description of the computational procedures and of the sources. It is not exhaustive, and the reader could not reconstruct the estimates for himself, but it gives the principles which have guided the computational procedures and the main steps in applying them, as well as the sources of information.

The presentation of the estimates follows the usual pattern. The tables give figures which have been rounded off to what seemed a significant digit. Thus the components do not necessarily add up to totals. When the estimate is negligible, i.e. less than half of the value of the last digit, we use a dash as the appropriate symbol (–). Leaving the column blank suggests that the category is not applicable or that all the estimates are zero. The two cases are often difficult to distinguish. Is expenditure on defence by local authorities zero in each individual year, and therefore the appropriate symbol a dash, is this category applicable at this level and should the column be left blank? We have chosen in such a case the latter solution. Where the data cannot be computed although it can be assumed that it is not negligible, we have used the symbol (..) for not available.

The statistics presented in the Appendix fall into four groups: demographic statistics, price index, estimates of Gross National Product, and finally estimates of government expenditure. The three former categories are of a subsidiary character, giving the framework for the discussion of the estimates of government expenditure on which our effort has been concentrated. We shall discuss them in that order, dealing briefly with the first three, and then at much greater length with the estimates of government expenditure. First of all, however, there are problems affecting all the statistical series which must be explained. The first of these is the determination of the area to which the statistics refer, and the second that of the time period.

1. Geographical Coverage

As far as possible, all series cover *the actual territory of Germany at each and any period.* The old German Reich remained unchanged during its whole existence, and thus the estimates until 1913 refer throughout to the same geographical area. The inter-war estimates refer to the reduced territory that existed in 1925, allowance being made for the inclusion of the Saar after 1935. After the Second World War, the statistics are limited to that part of Germany which constitutes the German Federal Republic. The exclusion of Berlin and

the Saar from the post-war estimates was dictated by the lack of statistical sources. Where possible, estimates for the same year have been given for a territory before and after the changes.

2. Time Period

Our study covers *the period from the unification of Germany until today.* The first year in the series for which data exist is 1872, and the last covered by the estimates is 1958. We have attempted to provide estimates for each individual year with the exception of those during the war and post-war disturbances. The two gaps extend from 1913–1925 and 1938–1950. Very little data are available for those years, and their interpretation poses difficult conceptual problems which are beyond the scope of this study.

All the estimates refer to *calendar rather than to fiscal years,* with the exception of the estimates of government expenditure for single "benchmark" years prior to the First World War when conversion was impossible. For the remaining years we have followed the usual but imperfect method of converting fiscal into calendar years based on the assumption that expenditure is spread evenly over the whole year.

3. Demographic Statistics

The aggregate population together with an index based on 1901 is given in Table A. 1. The figures are mid-year estimates of the "de jure" population until 1938, and thereafter of the population normally resident in the country. These estimates are among others given in the Statistical Yearbook[1]. The following two tables, A. 2 and A. 3, give information about the changes in the density of population. The first gives the distribution for selected years of total population between rural and urban areas, the latter being subdivided according to the size of the community. Both absolute figures and percentage distribution are given. The second table relates the total population to the area, giving the changes in the average density over the period. Both tables are based on data reproduced by the Federal Statistical Office in a volume dealing with long-term statistical series[2].

4. Price Index

The price index used for deflating all current estimates is given in Table A. 4. It is composed of two parts. Until 1925, it represents the movement of prices of selected commodities, and after this date it is based on the index implicit in the official estimates of the national product at current and constant prices. The first part of the index, that which covers the individual years until 1913 and the price changes between 1913 and 1925, is divided into two. During the 1870's, it represents an index of wholesale prices with shifting

---

[1] *Statistisches Bundesamt:* Statistisches Jahrbuch für die Bundesrepublik Deutschland, published annually since 1952, and a corresponding publication for earlier years.

[2] *Statistisches Bundesamt:* Bevölkerung und Wirtschaft, "Statistik der Bundesrepublik Deutschland", Band 199, 1958, Tables 1 and 3, pp. 10–13.

weights[1], and after that date it is an unweighted geometric average of the former index and a retail index of good prices[2]. The resulting index has the advantages of damping to a certain degree the price fluctuations typical for wholesale prices without giving undue emphasis on price changes of foodstuffs.

5. Gross National Product

The historical statistics of G.N.P. are very incomplete in spite of the fact that the Imperial Statistical Office ("Statistisches Reichsamt") published a national income monograph as early as 1932[3]. On the other hand, as a result of the relatively early use of income tax or similar taxes in the German tax system, the income statistics on which the first estimates of national income are based are available long before 1872 when our enquiry starts. Systematic estimates of national product, based on either the production or expenditure method, are only available after the Second World War. The concept considered most suitable for our purposes is that of the *Gross National Product at Factor Cost,* but it is only since 1950 that it is directly available from the official national income estimates. Until then, official statistics gave estimates of *National Income* rather than of Gross National Product, and the underlying concept was different. The minor conceptual differences can be ignored as they are quantitatively negligible[4]. The major deviation from the concept of national product as it is accepted today is *the treatment of government.* While today government is usually treated as a final consumer, then all expenditure which added directly to individual welfare was considered as expenditure out of private income. Such expenditure is, however, already included in private incomes in the form of direct taxation. It is only that part of expenditure on behalf of the consumer, financed out of indirect taxes, which has to be added to total aggregate income[5]. The adjustment of such a concept of National Income to that accepted today consists of reducing the aggregate to the original level. The estimates of G.N.P. are then obtained by adding depreciation. From 1925 onwards, it is possible to use official national income estimates, since both adjustments have been carried out by the Federal Statistical Office[6]. The series has been given for the pre-war years, alternatively for the territory of the 1925 Reich and of the Federal Republic. For the period prior to 1925, two alternative series of national income estimates are available.

---

[1] This index was calculated by the *Institut für Konjunkturforschung* (Sonderheft No. 37, Berlin 1925).

[2] For the index of retail prices see *Statistisches Bundesamt:* Bevölkerung und Wirtschaft, op. cit., Table 2, p. 84.

[3] *Statistisches Reichsamt:* Das deutsche Volkseinkommen vor und nach dem Kriege, Einzelschrift zur Statistik des Deutschen Reichs Nr. 24, Berlin 1932 (later referred to as Einzelschrift 24).

[4] See in this respect: Die langfristige Entwicklung des Sozialprodukts, "Wirtschaft und Statistik", 6 Jg., Heft 2, February 1954 (later referred to as W. u. S. February 1954).

[5] Einzelschrift 24, op. cit., p. 29, and W. u. S., February 1954, op. cit., p. 63.

[6] W. u. S., February 1954, op. cit.

The 1932 monograph gives estimates from 1891 onwards. A slightly different series going as far back as 1851 is given by *Hoffmann* and *Müller*[1]. Our estimates, given in Table A. 5, are based on the latter series, which is preferable in view of its longer run of estimates and of a higher degree of sophistication in its method. As no estimates of capital consumption in those years are available, we have assumed that the capital depreciation in 1913 was equal to 11% of the national product, i.e. the same proportion as observed in the inter-war period[2]. We have further assumed that between 1891 and 1913, the proportion of capital depreciation in G.N.P. declined by the same relative amount as the share of capital formation in G.N.P. For the years prior to 1891, we have extrapolated the estimates of G.N.P. at Factor Cost on the basis of those of national income.

6. Government Expenditure

The remaining tables in the Statistical Appendix give the estimates of *total government expenditure.* The aggregate expenditure is broken down according to three criteria, namely the *economic category,* the *function,* and the *level* of *government;* and the procedure of obtaining these divisions will be explained in connection with the relevant tables.

The break-down of total government expenditure by different levels of government is often implied in the presentation of statistics. In many countries the only available financial statistics are the separate accounts published by the different government levels. This was the case of Germany before World War I, while for subsequent years we can rely on the consolidated accounts of all levels of government. The discussion of sources and methods will, therefore, fall into two parts, namely that dealing with statistics prior to 1913, and that dealing with the years since then.

The lack of published consolidated accounts prior to 1913 meant that first of all, we had to compute estimates for the different levels of government and combine them afterwards. The estimates for the central government were relatively easy to obtain as the accounts of the Reich government were published regularly[3].

The other two levels of government, namely the governments of the states ("Bundesstaaten" before World War I, "Länder" afterwards) and the local authorities ("Gemeinden" and "Gemeindeverbände") each published their own accounts. We have not attempted to estimate government expenditure for each separate state, although the accounts of the state governments were published separately. It is impossible to do so in the case of the thousands of

---

[1] *W. G. Hoffmann* and *J. H. Müller:* Das deutsche Volkseinkommen 1851–1957, Tübingen 1959.

[2] As there are no estimates of capital depreciation for 1913 and the years prior to that, such an assumption seems to us to minimize any possible error. An evidence in its support, admittedly a very weak one, can be seen in the fact that gross capital formation represented the same proportion of G.N.P. in 1913 as in 1925. See *R. Wagenführ:* Zur Entwicklung der Investitionstätigkeit vor dem Kriege, "Vierteljahreshefte zur Konjunkturforschung", 10. Jg., Heft 4, Teil A, Berlin 1936.

[3] We have used tabulations in the "Statistisches Jahrbuch", op. cit.

local authorities, even though in most of the states some data on local government expenditure were published[1]. The first attempt to present a complete picture of the financial transactions of all public authorities was made in a report accompanying the proposal for finance reform in 1907[2]. Soon after the turn of the century, the central statistical office ("Kaiserliches Statistisches Amt") started to publish at irregular intervals summary financial statistics of the central and state governments[3]. These summaries, together with the "Denkschriftenband" 1908, represent the main source of information for the period until 1913. Whenever we have used additional sources, they will be mentioned in the discussion of individual tables.

For the period from 1913 onwards (i.e. for the year 1913 and the years 1925 and after), we have used statistics prepared by the Imperial Statistical Office and published in the current statistical sources such as the Statistical Yearbook or in special publications ("Einzelschriften zur Statistik des Deutschen Reichs" or part of the "Statistik des Deutschen Reichs"). After World War II, they have been published by the Federal Statistical Office ("Statistisches Bundesamt")[4]. They cover all public authorities, with one exception, namely that of social insurance funds. These are not treated as part of the public sector and so their accounts have been published separately. For our purpose we have used the tabulations given in the Statistical Yearbook.

Table A. 6 gives expenditure of total government for selected years between 1881 and 1913 and annually for the years covered in our study. Current expenditures are then deflated for price changes and both current and constant estimates are given on a per capita basis. Public authorities are defined in the usual manner, including governments and bodies carring out government functions. Governments ("öffentliche Verwaltung") include the government of the "Reich" ("Bund"), those of the states ("Länder"), and the local authorities ("Gemeinden" and "Gemeindeverbände"). All these are included in the Financial Statistics[5]. One category of public bodies, namely those carrying out certain economic or social functions on the territory of several local authorities ("Zweckverbände"), are omitted from the Financial Sta-

---

[1] For a detailed description of available statistics of local finance until 1908 see *O. Most:* Die Gemeindefinanzstatistik, "Schriften des Vereins für Socialpolitik", Band 126 and 127, Leipzig 1908 and 1910.

[2] Denkschriftenband zur Begründung des Entwurfs eines Gesetzes, betreffend Änderungen im Finanzwesen, in 4 Teilen, "Verhandlungen des Reichstages", 1907–1909, Band 249, 250 and 251. The estimates are given in Teil I: "Das Finanzwesen der öffentlichen Körperschaften in Deutschland". In the text below, we shall refer to this volume as "Denkschriftenband 1908".

[3] Die Finanzen des Reichs und der deutschen Bundesstaaten, "Vierteljahreshefte zur Statistik des deutschen Reichs", first published in 1902. Our estimates have been derived from tabulations in the following volumes: 2. Heft 1911, 2. Heft 1913, and 4. Heft 1922.

[4] Statistik der Bundesrepublik Deutschland, "Die öffentliche Finanzwirtschaft in Bund, Ländern, Gemeinden und Gemeindeverbänden in den Rechnungsjahren 1948 bis 1954", first published in 1957, gives consolidated accounts of all public authorities. A separate series, "Staatliche Finanzen", covers central and state authorities, and a series "Kommunale Finanzen" covers local authorities.

[5] For their coverage see "Die öffentliche Finanzwirtschaft", op. cit. p. 5.

tistics and consequently from our estimates. As they provide services in part to the local authorities against payment, they are nevertheless included to that extent under local government expenditure. The omission is more important insofar as public capital formation is concerned; such expenditures are excluded. The only group of non-governmental character included is the semi-public bodies administering the German system of social insurance, which has already been mentioned.

Government expenditure is defined as *expenditures by public authorities of a non-financial character on services which are not sold against specific payments to the private sector.* Each expenditure is to be included only once in the aggregate, transfers between different public authorities and between different accounts of one public authority have to be eliminated. Any expenditure item is allocated to that public authority which is responsible for the provision of a given service whatever the source of finance. In the terminology of the Financial Statistics, our concept is that of "unmittelbare Ausgaben" and not of "Eigenausgaben". The *elimination of internal transfers* within the public sector has already been carried out in the Financial Statistics[1], and no adjustment was, therefore, necessary for the period covered by them. Until 1913, not all transfers could be excluded and the aggregate includes double counting to that extent. We have excluded non-specific transfers ("Überweisungen und Matrikularbeiträge")[2] between the central government and the State governments but not specific grants ("Zweckgebundene Vergütungen aus der Reichskasse") which were negligible[3]. As we have included in the public sector total expenditure on social insurance, that part which was financed out of the general revenue of public authorities had to be excluded. These contributions, which were entirely the responsibility of the central government prior to the Second World War, and, to a minor degree, of the states after that, were deducted.

The existence of inter-governmental payments complicated the problem of excluding *Berlin* from the estimates. The whole amount of expenditure by the Berlin local authorities ("unmittelbare Ausgaben") should not have been excluded since part of it is financed from the resources of the other public authorities in Germany. However, neither the published data nor the information made subsequently available by the Federal Statistical Office give enough detail to warrant its inclusion.

The next step in obtaining the estimates of government expenditure was to *eliminate expenditure items of a purely financial nature.* Lending, for example, is not generally considered part of government expenditure; neither is the purchase of second-hand assets. We have, nevertheless, included the substantial loans ("Gewährung von Darlehen, Inanspruchnahme aus Bürgschaften") by all levels of public authorities, especially by state governments. The majority of these went towards housing and represented capital grants to housing associations. The fact that the provision of housing facilities by the

---

[1] Ibid, p. 7–8. The only exception is the payments from and into reserve funds in the inter-war period. The ensuing error is negligible.

[2] From tabulations in the "Statistisches Jahrbuch", op. cit.

[3] These transfers amounted at most to 85 million DM.

public authorities in Germany was carried out in this way rather than by a direct system of grants or by a direct provision of housing facilities, is, from our point of view, irrelevant. The other major point in this respect is the treatment of loan charges borne by the state and local authorities. As most of the debt has been incurred for productive purposes, we have assumed that the loan charges measure approximately the flow of real services derived from the ownership of capital assets by these authorities. The same assumption cannot be made at the central level. Besides the imputed stream of services, we have the actual payments on debt service at all levels of government. Of this, only the interest has been included, as the repayment of the principal represents a purely financial transaction.

The final, and most difficult, problem has been the *treatment of trading activities*. Over the period as a whole, the trend has been towards their separation from other governmental activities. Prior to 1913, they were mostly not separated from the provision of other services and thus, they represented part of the public sector. They are included in our estimates, as given in the Appendix Tables A. 6 to A. 34[1], to the extent of expenditure on capital account. Expenditure on current expenditure is, of course, excluded as it is offset by the current revenue. However, one part of the current expenditure on trading services, namely the loan charges, proved difficult to separate from the loan charges for non-trading purposes. We have therefore not deducted them at central and local levels. In the former case, they were negligible as the Reich did not participate to a significant extent in economic activities. In the case of the states, which provided not only railways but also many other trading services, we have only succeeded in deducting that proportion of debt which was incurrend in the construction of the railways[2]. After 1913, the greater proportion of trading activities, among them the most important ones such as railways, were carried out by autonomous bodies and thus disappeared from the accounts altogether. This applies not only to current expenditure which is self- liquidating in any case but to capital expenditure as well. Our estimates exclude capital formation even of enterprises which remained under the direct responsibility of the public authorities. This is because of the inter-war practice of including in the Financial Statistics only the net balance of expenditure and revenue on both current and capital accounts. After the Second World War, the usual method of giving the net balance of current expenditure and total capital expenditure was adopted[3]. Thus the post-war definition of

---

[1] As we have pointed out, Appendix Table A. 35, as well as all the tables in the text, is based on the "adjusted" series.

[2] It proved very difficult to separate the railway debt from the rest for each state and each year. We have therefore assumed that the division of total liabilities in Prussia between those connected with railway construction and those connected with other purposes represents fairly well the situation in other states. This assumption has proved satisfactory for 1910, for which year we have obtained the data for all states from "Vierteljahreshefte zur Statistik des deutschen Reiches", 20. Jg., Heft 2, p. 30. The estimates for Prussia are from "Statistisches Handbuch für den Preußischen Staat", published annually by the "Königliches Statistisches Bureau in Berlin".

[3] "Die öffentliche Finanzwirtschaft", op. cit., p. 6.

public sector is wider than the inter-war one. The available estimates of capital formation in the inter-war period are not detailed enough to make the corresponding adjustments.

A similar problem is encountered in separating prior to 1913 *fees and similar payments other than taxes* from the total revenue. This has proved impossible and we have therefore used the wider concept of gross expenditure[1]. For the period since 1913, the Financial Statistics have given the break-down of fees by functions. A detailed examination of fees in selected years has shown that, on the whole, only those in the categories of Administration, and Law and Order, represent taxes, the rest being payments for services provided. We have therefore excluded all fees with the exception of those in these categories. *The contributions to social insurance have been considered as taxes.*

The aggregate government expenditure as described above is given, by the *level of government,* in Table A. 7. We have consolidated all public authorities into three categories, namely central, state and local. The central level covers the Reich government and its successor after 1945, the Federal government, as well as the Burden Equalization Fund ("Lastenausgleich") which has been kept separate for administrative purposes from the Federal Budget. It also includes the social insurance system which has always been the responsibility of the central government. The other two levels include a multitude of public authorities with jurisdiction over a limited territory; state governments for the territories of the constituent states ("Bundesstaaten", "Länder"), and local authorities. The Financial Statistics give separately a fourth category of public authorities, namely, local governments which also fulfil the functions of state governments ("Stadtstaaten"). We have included them in the state level as a greater proportion of their expenditure was of a state rather than of a local nature. The third category includes governments of individual communes and those with jurisdiction over several communes ("Gemeindeverbände").

The general sources of all levels of public authorities have already been indicated. They also give the breakdown by the levels of government. However, they are not complete. The "Denkschriftenband 1908" does not give any information about the expenditure of local authorities prior to 1907 and the Financial Statistics exclude the expenditure of the Reich government for 1933 and the following years.

Our estimates of the growth of *local expenditure prior to 1913* are rather unsatisfactory for two reasons: statistical material collected and published in that period was scarce and the different estimates available are not comparable with one another. The only attempt to obtain a complete picture was made in connection with the survey for the "Denkschriftenband 1908". Although the enquiry aimed at obtaining a series covering 1881, 1891, 1901 and 1907, the only published estimate

[1] The resultant error is negligible. The amounts of fees, etc. which include some unrequited payments (i.e. in categories other than administration, law and order) amounted to 0.2% of the total expenditure at the central level and to 1.3% at the state level. These percentages indicate, of course, only the maximum error as not all fees etc. represent required payments. These estimates have been derived from data given in "Denkschriftenband 1908", op. cit.

of local expenditure covered 1907, and even this was subjected to severe criticism[1]. Part of the expenditure, namely that of the communes of under 10,000 inhabitants, had to be imputed, and no indication of the underlying method was given. Furthermore, even the returns of the local authorities with 10,000 or more inhabitants were not made out according to the same accounting principles. The estimate included both net and gross expenditure, as well as double counting due to transfers between different authorities, and those between accounts of the one authority. It also included expenditure on trading services which were financed out of sales to the private sector. No information as to their amount was given. We have therefore adopted for the year 1907 the estimate which *Gerloff* later on derived from that of the "Denkschriftenband 1908". Its reliability cannot be ascertained as the description of the method used and of the additional sources is still unpublished[2].

For the years prior to 1907, even less is available in terms of published information. The "Denkschriftenband 1908" gave, for selected years from 1881 onwards, a series of tax revenue in larger communes, i.e. with 10,000 or more inhabitants. For smaller communes, we have an implicit estimate for 1881 by *Schwartz*[3]. Corresponding estimates of tax revenue in smaller communes for the later years have been obtained by extrapolating between the latter estimate and that of the "Denkschriftenband 1908". Having thus obtained a series of tax revenue in both larger and smaller communes, the next step was to estimate other categories of revenue. We have observed first of all the relationship between taxes and other revenue in Prussia. There is a strong evidence that the survey of local finance in 1883 which covered all communes was carried out very carefully by the Prussian Statistical Office[4], and we have, therefore, accepted its findings. For the years between 1883 and 1907, we have extrapolated the total expenditure of Prussian local authorities on the basis of changes in tax revenue. The proportion of tax revenue to expenditure in Prussia fell from 52% to 42% by 1907. The expenditure from revenue other than taxes by local authorities in other states had to be estimated. We have assumed that the proportion of taxes in total revenue (and expenditure) fell to the same extent, that is from 73% in 1881 to 59% in 1907. With the actual estimates of tax revenue which we had, this assumption gave the remaining

---

[1] *Otto Most*, op. cit., pp. 80–81.

[2] *Gerloff* estimated total local expenditure in 1907 at 2,344 million DM, by adding up all local revenue other than trading profit. This estimate implicitly gives the amount of non-trading revenue other than taxes which cannot be obtained directly from the "Denkschriftenband 1908." Unfortunately, the indication about the sources and methods is limited to a fairly general statement, "Bei kritischer Würdigung des Materials mit vorsichtigen ergänzenden Schätzungen ... kommt man zu folgender Übersicht" (*W. Gerloff:* Der Staatshaushalt und das Finanzwesen Deutschlands, "Handbuch der Finanzwissenschaft", 2. Aufl., 3. Band, Tübingen 1929, p. 22).

[3] *Schwartz* estimated the total tax revenue of all communes in 1881; from this, we have deducted tax revenue of larger communes, as given in the "Denkschriftenband 1908", and we have taken the residual as representing the tax revenue in small communes. How reliable is this estimate? The only evidence in this respect is indirect. Due to his position, *Schwartz* was presumably able to use the unpublished material collected for the "Denkschriftenband 1908". However inaccurate these returns might have been, there is a presumption that they are preferable to pure guesswork.

[4] Reproduced in Verein für Socialpolitik, "Gemeindefinanzen", op. cit., p. 33.

estimates for the states other than Prussia. Even though this assumption is not based on any other direct evidence, any possible error is of minor quantitative importance. Prussia, for which we used actual estimates, accounted for over 70% of local expenditure in 1907. The estimates of local government expenditure for the years prior to 1907 are thus to a great extent based on returned data. The only element of guesswork are the estimates of expenditure from sources of revenue other than taxation in all the states except Prussia; yet even this is based on the analogy with Prussia which could not have been altogether without relevance. The other question as to the correctness of the returned data is more difficult to ascertain. We can only conclude that they are the only estimates available and as such have been accepted and repeated by all authors writing in this field.

The second gap in the series covered by the main sources is the *expenditure of the central government in the years 1933 and after.* The Budget of the Reich was not published and the Financial Statistics, from 1933 on, included only the expenditure of state and local governments. Not even the post-war recapitulations of financial statistics added the missing information, the reason being that for those years, audited accounts for the Reich are not available[1]. The budget data were, nevertheless, published after the war[2]. Although we have incorporated these data into our statistics, the same reasons which caused the Federal Statistical Office to exclude them from their post-war publications still hold. The figures are deficient and not strictly comparable with other estimates for several reasons. They represent budget data and not audited expenditure. Further, substantial sums were spent on public works and later, on the rearmament programme, which would not be fully recorded. This concealed spending was made possible by the practice of recording expenditures financed by short-term debt only when the debt matured, and not when the debt was contracted[3]. We have accepted these data and combined them with estimates for other levels of government as given in the Financial Statistics. We deducted that part of the Reich expenditure which represented transfers to other public authorities as well as payments for the services provided to the private sector. Finally, we added the expenditure on social insurance.

An alternative would have been to adopt one of the estimates made by other authors in this field. Both *Klein*[4] and *Nathan*[5] give the expenditure series for the 1930's based on either original statistics or on those of other writers. However, though these statistics may give a picture nearer to reality, their summary character and the absence of any details as to the computational procedure makes them unsuitable for further use. Only in one table, A. 10, have we reproduced *Klein*'s estimates in order to obtain an idea of the break-down of total expenditure by economic categories which is not available from the budget data. Their inclusion does not suggest their

---

[1] "Die öffentliche Finanzwirtschaft", op. cit., p. 9.

[2] Statistisches Handbuch von Deutschland, 1928–1944, München 1949, pp. 546–555.

[3] *Otto Nathan,* op. cit., pp. 43–45 and 82.

[4] Op. cit., statistical appendix.

[5] Op. cit., appendix A.

comparability with the rest of the statistical information. Neither have we succeeded in reconciling them with the series given in Table A. 7[1].

With the estimates of Reich expenditures in the 1930's, we have completed the series of total government expenditure for the years covered by this study. No attempts have been made to obtain even approximate estimates for the war and immediate post-war years which are not covered by the Financial Statistics.

The following table, A. 8, gives expenditure at each level of government on a "per capita" basis, and the percentage distribution of total expenditure by the levels of government.

The *expenditure on social insurance* is given in Table A. 9. For the years until 1950, it has been derived from returns of individual social insurance funds, reprinted in the Statistical Yearbook, as no summary data covering all the years has ever been made available in the official statistics. We have excluded all transfers either within the insurance system or to, and from, other public authorities. This does not mean that no minor items of double-counting remain in the years before 1950. Since then, we have the computation of the Federal Statistical Office as part of the attempt to reconstruct a complete system of social accounts for Germany since 1950[2]. As this data have been constructed according to the same principles as those followed in this study, we have adopted them without any change. Table A. 9 also gives the breakdown of total expenditure between goods and services on the one hand, and transfers on the other. We have treated all cash benefits ("Leistungen") which were clearly identified as such as transfers; the residual expenditure has been classified as purchases of goods and services. Thus the latter category includes a certain amount of transfers which were outside the scope of the usual insurance benefits (e.g. "Unterstützungen an Kleinsiedler"). Although we have classified all expenditure on social insurance until 1950 as current, during the 1930's the social insurance funds were diverted towards the financing of public works. The available statistical material is not detailed enough to separate these items from the administrative cost of social insurance. The category of purchases of current goods and services by social insurance funds thus includes, until 1950, items which are not only expenditures on capital account but which are also outside the scope of social insurance and which should be classified under different functional categories. Since 1950 the purchases of goods and services on capital account have been given separately.

The *break-down of total expenditure into the different economic categories,* given in Tables A. 10 and A. 17, proved possible only for the years covered by the Financial Statistics. For the years prior to 1913, only expenditure of a non-recurrent character, which includes fixed capital formation, could be separated from the rest, and for the years after 1932, no data comparable with

---

[1] *Klein*'s estimates are substantially lower than ours, especially in the earlier years. In 1932, for example, his estimate, in billion DM, is 15.1 as against ours of 17.7 and the discrepancy is even greater in 1934 (16.7 against 21. 6). *Klein* does not give enough details to allow us to reconcile his estimates with ours.

[2] Der Staat als Teil der Volkswirtschaft 1950 bis 1959, "W. u. St." Heft 3, March 1961.

comparability with the rest of the statistical information. Neither have we succeeded in reconciling them with the series given in Table A. 7[1].

With the estimates of Reich expenditures in the 1930's, we have completed the series of total government expenditure for the years covered by this study. No attempts have been made to obtain even approximate estimates for the war and immediate post-war years which are not covered by the Financial Statistics.

The following table, A. 8, gives expenditure at each level of government on a "per capita" basis, and the percentage distribution of total expenditure by the levels of government.

The *expenditure on social insurance* is given in Table A. 9. For the years until 1950, it has been derived from returns of individual social insurance funds, reprinted in the Statistical Yearbook, as no summary data covering all the years has ever been made available in the official statistics. We have excluded all transfers either within the insurance system or to, and from, other public authorities. This does not mean that no minor items of double-counting remain in the years before 1950. Since then, we have the computation of the Federal Statistical Office as part of the attempt to reconstruct a complete system of social accounts for Germany since 1950[2]. As this data have been constructed according to the same principles as those followed in this study, we have adopted them without any change. Table A. 9 also gives the break-down of total expenditure between goods and services on the one hand, and transfers on the other. We have treated all cash benefits ("Leistungen") which were clearly identified as such as transfers; the residual expenditure has been classified as purchases of goods and services. Thus the latter category includes a certain amount of transfers which were outside the scope of the usual insurance benefits (e.g. "Unterstützungen an Kleinsiedler"). Although we have classified all expenditure on social insurance until 1950 as current, during the 1930's the social insurance funds were diverted towards the financing of public works. The available statistical material is not detailed enough to separate these items from the administrative cost of social insurance. The category of purchases of current goods and services by social insurance funds thus includes, until 1950, items which are not only expenditures on capital account but which are also outside the scope of social insurance and which should be classified under different functional categories. Since 1950 the purchases of goods and services on capital account have been given separately.

The *break-down of total expenditure into the different economic categories,* given in Tables A. 10 and A. 17, proved possible only for the years covered by the Financial Statistics. For the years prior to 1913, only expenditure of a non-recurrent character, which includes fixed capital formation, could be separated from the rest, and for the years after 1932, no data comparable with

[1] *Klein*'s estimates are substantially lower than ours, especially in the earlier years. In 1932, for example, his estimate, in billion DM, is 15.1 as against ours of 17.7 and the discrepancy is even greater in 1934 (16.7 against 21. 6). *Klein* does not give enough details to allow us to reconcile his estimates with ours.

[2] Der Staat als Teil der Volkswirtschaft 1950 bis 1959, "W. u. St." Heft 3, March 1961.

the rest could be obtained at all. In the years covered by the Financial Statistics, the procedure was straightforward. We first estimated the amount of transfers and of fixed capital formation and then obtained the current consumption by the public authorities as the residual. The main categories of transfers are interest payments on national ("Reich") debt, social transfers, various forms of compensation payments in consequence of war, including reparation payments, and loans. This category also includes diverse subsidies, which have been given separately only in the post-war period. Fixed capital formation should include purchases of new assets for other than military purposes. The separation of second-hand from new assets could be carried out for the post-war years; on the other hand, expenditure on military assets has been excluded since 1913.

The economic break-down proved impossible for any year prior to 1913. Besides social insurance transfers, which are given separately in Table A. 9 anyway, and interest payments, we have no information to enable us to estimate the amount of transfers. The only division is that between ordinary and extraordinary expenditure ("ordentliche und außerordentliche"). The latter category is much wider than fixed capital formation, including any expenditure of non-regular recurrence whether on capital or current account. It also proved impossible to separate military from other purposes, which is another reason for the non-comparability of this category with estimates of fixed capital formation in later years.

The budget data for the Reich government on which our estimates for 1933 and after are based were not sufficiently detailed for us to separate either fixed capital formation or transfers. We have therefore reproduced the division between goods and services and transfers given by *Klein*. As the underlying definitions are not identical, the only purpose of reproducing this data has been to indicate the order of magnitude of the changes in the two categories between 1932 and 1938. As *Klein*'s estimates are only partly given for calendar years, the others being for fiscal years, we have converted them by the usual procedure. We have also added the expenditure of the social insurance as *Klein* presumably excluded that item from the estimates.

The *classification of expenditure by functions*, given in Tables A. 18 to A. 29, which is the second of our three divisions, came up against the same difficulties as those met by the previous one. A complete breakdown is possible only since 1913 and the Reich expenditure in the 1930's could only be classified incompletely. In the years for which a full classification was possible, we have divided all expenditure into eight main categories with the subdivision of social services into their individual components. We have followed the classification pattern adopted in other studies, such as those for Britain by *Peacock* and *Wiseman*, in so far as the details given in the Financial Statistics made this possible. In some cases, and this is especially so in the case of economic and environmental services, the categories given there differed from those in our classifikation and we had to adopt them as they were[1].

The first category, *Administration and other*, includes the cost of general administration other than the administration of a particular service, such as

[1] For a detailed list of all functional categories see "Die öffentliche Finanzwirtschaft", op. cit., pp. 23–26.

education, and other minor items which cannot be allocated to any specific function. It also includes expenditure on overseas services which are often classified separately, as well as the cost of fiscal administration and of debt management. The second category, *Law and Order,* represents the cost of maintaining an internal system of peace and lawfulness. The cost of the Federal Border Police ("Bundesgrenzschutz") is not included here as this function is usually carried out within the framework of military defence. It is, therefore, included in the next category, *Defence,* which also includes the contributions towards the cost of Allied Forces in Germany. The main expenditure is, of course, the cost of armed forces. This category does not include those expenditures which can be classified only indirectly as defence, such as economic measures increasing the self-sufficiency of the country, or those which were deliberately financed under the non-military sections of the budget. The first problem is that of definition and it can be argued that only those expenditures which serve direct defence purposes should be included. During a preparation for war, defence expenditure so defined must underestimate the actual military effort. The second problem is that of availability of data. It is impossible to separate direct defence such as construction of airfields or fortification from other public work programmes in the 1930's. To that extent, our data underestimates the actual defence expenditure. The next category is that of *War damage compensation* which is better described by the German term of "Kriegsfolgelasten". It includes the burdens arising out of war, other than those of a social nature, the most important among them being the payment of reparations after World War I. It includes a compensation to Israel as well as internal payments for damages caused during the war. The occupation costs which are sometimes classified under this category have been treated as defence expenditure. *Social services* include social insurance, social assistance whether related to the war or not, education, housing and health. The last category has not been given separately in the inter-war period from 1929 onwards. The category of *Economic services* includes the provision of services directly assisting economic activities, including here the provision of trading services. On the whole, these are provided in two forms, either by economic enterprises, such as utilities or transport enterprises, or by the ownership of real assets such as building ground ("Erwerbsvermögen" and "Wirtschaftsunternehmen"). As we have pointed out before, both these forms are included in government expenditure only to the extent of capital formation or deficits on operating accounts. The non-trading economic services consist of services to agriculture and industry. An important element in this category is direct production subsidies. The Financial Statistics also include under services to agriculture the cost of the provision of dams, coast protection, etc., which is usually treated as an environmental service. The provision of transport facilities such as roads, bridges, airports, harbours and so on has been considered as directly promoting economic activity and is included in this category. The next category comprises *Environmental services,* i.e. the collective services necessary to communal life. There is no clear-cut distinction between this and the previous category. For example, the provision of roads can be classified under both these headings, since they can be looked on as providing

direct service to consumers and to enterprises, indistinguishable from other inputs, or as a part of the general framework necessary for the functioning of the economic system. Environmental services consist of the cost of provision of basic urban services such as sewerage, cleansing and lighting of streets, fire brigade, markets, cemeteries, and similar installations which appear in the Financial Statistics as "Kommunale Anstalten und Einrichtungen". Since the Financial Statistics do not give any break-down of this category, the services of clearly economic character, such as markets and municipal savings banks, could not be transferred to the economic category where they should belong. The last category is *Debt service.* This includes interest payments on the debt of the central and state governments, and that part of the local loan charges which are not allocated to any particular function. As already mentioned, the cost of debt management has been classified under Administration and other. This is the only case when the cost of managing a given function was considered part of the general administrative expenses and not as the cost of a specific service. The category of debt service does not include the amount of capital repayments, which are considered purely financial transactions.

For the years prior to 1913, a complete functional break-down for all levels of government is impossible. Even the published statistics of expenditure of the Prussian local authorities, which we have used in estimating local expenditure during that period, are not detailed enough to separate individual functions. More details are available for the expenditure of the Reich and of the state governments, yet the break-down for the two levels given in Tables A. 22, A. 24, A. 25, A. 26 is in no way comparable with the classification for 1913 and after. The category of Administration and unallocated (the term used prior to 1913) is thus much wider than the corresponding category for 1913 and after. It included all services that were not allocated to any specific function. The expenditure out of the French reparations in the 1870's have been kept as a separate category. They included items classified as military defence, (fortifications, military pensions, etc.) which would otherwise fall into the separate category of "Kriegsfolgelasten". The category of Social insurance in Reich expenditure represents the expenditure by social insurance funds, computed separately, which we have added to the expenditure of the central government proper.

A different arrangement of functional categories is presented in Table A. 30 which gives separately all expenditures related to war and then relates them to total government expenditure and Gross National Product. The cost of defence, the interest on debt of the Reich which was mainly incurred in financing defence expenditure, and the obligations of the government arising directly out of the war effort, all fall into this group. They are either external payments, such as reparations and compensation to foreign nationals, or internal compensation of a general or social character. The latter ("soziale Kriegsfolgelasten") have been included in the functional classification under social services.

The following four Tables, A. 31–34, give, from 1913 onwards, the proportion of expenditure by function which was financed out of grants from other levels of government other than those which are not allocated ("Allgemeine Zuweisungen"). This classification only applies on local and state levels, for the central government is in the reverse position as it finances a larger amount

of services than it actually provides. The tables give both totals of net specific transfers ("Verwaltungszweiggebundene Zuweisungen und Darlehen") and percentages in terms of total expenditure on a given function by a given level of government.

The last Table, A. 35, gives an alternative set of estimates of government expenditure for selected years between 1872 and 1913. The reason for the computation of these "adjusted" estimates as well as the underlying computational procedures have already been discussed in the main text.