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REDISTRIBUTION OF INCOMES THROUGH PUBLIC FINANCE IN 1937

REDISTRIBUTION OF INCOMES

THROUGH PUBLIC FINANCE

IN 1937

BY

TIBOR BARNA

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PREFACE

THIS study is primarily a quantitative investigation into the redistribution of incomes through public finance in this country before the war. It is not concerned with answering any of the wider questions involved, although it was impossible to avoid raising them. The two most important questions which remain unanswered concern the adequacy of the British system of public finance as a whole, and the choice between redistributive finance and other methods of social policy.

It has been found that, considering the total effect of taxation and public expenditure, the pre-war system of public finance was on the whole progressive throughout the entire range of incomes; that is, the greater the income the greater was the proportion of taxation paid, or the smaller the income the greater was the proportionate benefit derived from public expenditure. But attention is also drawn to the fact that the system of public finance was not adequate from a number of other viewpoints, which are outside the scope of this book; in particular, the distribution of taxation between large and small families was not equitable.

A study of redistributive finance as a method of social policy also leads us outside the scope of this book; but it is evident that Britain's social aims could have been attained by means more direct and more effective than redistributive finance. This study is designed as a factual analysis on which opinion, and future action, concerning the wider issues can be based.

But inevitably any study of this nature leads to the discovery of great economic inequality, both of income and of wealth; it can be inferred that most social evils, such as want, ignorance, disease, and even involuntary idleness, are to a large extent due to economic inequality. It can be said, therefore, that the fight against these social evils cannot succeed unless economic inequality in its extreme forms is also attacked.

This book is the result of research carried out at the London School of Economics. Among my teachers I am particularly indebted to Mr. Nicholas Kaldor, who first suggested to me the idea of this inquiry, and who greatly helped me by discussing with me most points of economic interest at each stage. Several of my arguments were

written under the influence of the works of Professor J. R. Hicks on the national income and allied subjects, for which it was impossible to give specific acknowledgement in every case.

My thanks are due to the University of London for the Gerstenberg and another studentship, and to the London School of Economics for the Leverhulme Research Studentship and a grant, which enabled me to undertake this inquiry.

Finally, I am indebted to Marie Barna for help at every stage in the preparation of this book.

T. B.

CAMBRIDGE
March, 1945

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INTRODUCTION

'It is their maxim that the weight of taxes must be calculated not by what is taken, but by what is left.' EMERSON, *English Traits*.

SINCE the middle of the nineteenth century the activities of the government have covered an ever-widening field.[1] In 1913 the revenue and expenditure of the government was 12 per cent. of the national income. After the war, in 1924, the revenue or expenditure of the government came to 24 per cent. of the national income and never since has it fallen below that proportion.

The liabilities of the Exchequer greatly increased as a consequence of the First World War. There was a great expansion in the national debt and interest was paid at high rates. A great number of war pensioners had also to be provided for. Yet, at the same time, the expansion of social expenditure (initiated by the Liberal governments) continued at a rate greater than the contraction of interest on the national debt and expenditure on war pensions. By 1937 social expenditure constituted about half of the total government expenditure, and its ratio to the national income was equal to the ratio of total public expenditure to the national income in 1913.

In the expanded system of taxation, direct taxation expanded not only in its amount but also as a proportion of total revenue. Social expenditure as a means of redistributing income from the rich to the poor was successful because it was financed by taxation falling mainly on the rich. The rate of indirect taxes on necessities (for instance on sugar) was lowered after the First World War and other duties (such as the duty on tea or on petrol) were abolished for a time. The 'thirties, however, saw the return of these duties and also of protective tariff duties. The importance of indirect taxation has grown during these years, and its complexity, because of preferential rates and hidden duties, became formidable.

The incidence of taxation was known to be regressive in the lower ranges of income affected by indirect taxes only; but it was progressive in the higher ranges of income where the incidence of income tax and surtax fell. The tax curve was known to be U-shaped with the lower middle classes getting off rather lightly.[2] Each increase in taxation,

[1] Government, as explained in Ch. II, is meant to include all public authorities.

[2] Cf. diagram in U. K. Hicks, *The Finance of British Government, 1920–1936*, p. 270.

aimed at (probably for political reasons) increasing the yields of both direct and indirect taxation almost proportionately, raised both arms of the U-shaped tax curve but left the dip unaffected. An attempt to eliminate the dip was made for the first time during the war when, since the budget of 1940, the income-tax exemption limit was lowered and the proportion of direct taxation in total revenue raised.[1]

After the First World War the obligations of the government and its expenditure were regarded as being more or less given; attention was concentrated on the means of raising the revenue necessary to finance the given amount of expenditure and, especially, on the distribution of taxation between the various classes. In 1919 Lord Samuel read his presidential address to the Royal Statistical Society on 'The Taxation of the Various Classes of the People', comparing the distribution of most taxes at various levels of income before and after the war.[2] The calculation was repeated in great detail by the Colwyn Committee and the figures were brought up to 1925.[3] Finally, in 1942 the National Institute of Economic and Social Research published an inquiry into the incidence of taxation in 1937–8 and during the war.[4]

None of these inquiries discussed all taxes, and the expenditure side of the government accounts was completely ignored.[5] There was no attempt to answer the question how far were incomes redistributed by the government and how much was transferred from the rich to the poor.

It is necessary to regard the whole process of redistribution as something integral. Marshall stressed the point that all taxes should be considered together;[6] since that time government expenditure

[1] Cf. *Economic Journal*, June–Sept. 1943, p. 261.

[2] *Journal of the Royal Statistical Society*, 1919. Previous to that the rate of income tax and death duties was estimated officially in 1906, 1914, and 1918. Cf. pp. 109 et seq., below.

[3] *Report of the Committee on National Debt and Taxation* (1926). Papers in the *Journal of the Royal Statistical Society* by D. Caradog Jones (1927) and M. Sandral (1931) are based on the calculations of the Colwyn Committee.

[4] G. Findlay Shirras and L. Rostas, *The Burden of British Taxation* (1942).

[5] This is not to suggest that the authors of these inquiries were not aware of the limitations of their method, since it was made clear that certain taxes (notably rates) were omitted and the effect of public expenditure ignored. But, as argued below, it might be better to make an hypothetical allowance for any tax or expenditure than to omit it if we want to gain a balanced view.

[6] 'Onerous taxes, imperial and local, must be treated as a whole. Almost every onerous tax taken by itself presses with undue weight on some class or other; but this is of no moment if the inequalities of each are compensated by those of others, and variations in the several parts synchronise. If that difficult condition is satisfied, the system may be equitable, though any one part of it regarded alone would be

conferring divisible benefits has expanded so much that it is necessary to consider the whole system of taxation and expenditure together.

The term 'burden of taxation' should be avoided as far as possible. We can only speak of the burden of taxation when comparing two alternative systems of taxation yielding the same revenue (given the pattern of public expenditure), or two different patterns of expenditure spending the proceeds of a given system of taxation. It is misleading to use this expression to imply that the nation's welfare is less than what it would be with a less expanded system of government finance (and lighter taxation), unless this proposition is explicitly stated and proved. It is not possible to speak of the 'burden of taxation' without considering, at the same time, the benefits of expenditure made out of this taxation. Inquiries into the distribution of taxation alone cannot serve practical purposes or be used in political arguments. It is not so much a matter of explicitly stating the omission of government expenditure, when inquiring into the distribution of taxation, but a matter of correcting that omission.[1]

The question which the present inquiry seeks to answer has so far been asked by Mr. Colin Clark only.[2] Though his chapter does not aim at any very precise formulation of the question, or the attainment of exact results, its conclusions seem to be broadly true. 'In 1913 it appears that the working classes contributed more than the cost of the services from which they were direct beneficiaries, leaving a surplus contribution to general revenue. In 1925 working-class taxation contributed 85 per cent. of the cost of these specified beneficial expenditures; in 1935, 79 per cent.'[3]

inequitable' (*Memorandum on Imperial and Local Taxes*, C. 9528, p. 113). We should substitute for 'onerous tax', '*the redistributive effect of any kind of tax or expenditure*'.

[1] A conspicuous case occurs when luxury goods are taxed and, at the same time, necessities subsidized. In that case it would be misleading to talk of the 'burden of taxation' on low incomes without taking into account the subsidies. In *The Burden of British Taxation*, for instance, the duty on sugar in 1941–2 is elaborately distributed while the subsidy on sugar, off-setting most of the duty, was ignored. The 'burden' of sugar duty on a standard family with low income was given as 4 per cent. of the income, whereas the correct figure should have been less than 2 per cent.

[2] *National Income and Outlay*, ch. vi.

[3] Ibid., pp. 147–8. 'The net effect of taxation and local rates in 1935 can be described as a redistribution of £91 millions from the rich to the poor in the form of services, other than those provided for from the proceeds of working-class taxation. The £685 millions paid by the rich in indirect and direct taxation provides £263 millions of services beneficial to themselves, £91 millions for transfer as above, and the whole cost (£331 millions) of general administration and of public saving not covered by miscellaneous revenue.' (The dividing-line between rich and poor is taken as an income of £250.)

This book is divided into two parts. Part I deals with problems of general interest, mainly in the field of public finance and the national income. The central problem here is the exact definition of the scope and nature of this inquiry which is discussed in Ch. I. The government accounts are analysed in Ch. II and the national accounts in Ch. III. To conclude Part I, the initial distribution of incomes is obtained in Ch. IV.

The questions discussed in Chs. II–IV are closely relevant to the central theme but deal with subjects which would be, strictly speaking, outside the scope of this book. Their discussion was necessary partly for lack of published information and partly to adapt published information for our purpose. All appendixes at the end of the book refer to Chs. II–IV and are of a similar nature.

Part II deals with the actual measurement of redistribution of incomes in 1937. Chapters V–XVI follow a logical order, dealing with transfer expenditure, direct taxes, indirect taxes specifically on consumption, subsidies, indirect taxes on production in general, and, finally, public expenditure on goods and services. The length of the chapters is not at all proportional to the importance of the various taxes or expenditures but is related rather to the possibility—both theoretical and practical—of obtaining accurate measurements. The results are summarized and the conclusions given in Ch. XVII.

It is necessary to warn the reader that most of the conclusions are drawn after certain arbitrary assumptions have been made and that these assumptions are conditional to some, though not all, of the conclusions. The interpretation of the results, at the end of Ch. XVII, is of course largely a matter of opinion, and the results obtained might yield different interpretations in the hands of others.

PART I

I

REDISTRIBUTION OF INCOMES THROUGH PUBLIC FINANCE

i. The subject of the inquiry

In this book I shall discuss and measure quantitatively the *Redistribution of Incomes through Public Finance in 1937* in this country. As a first approximation the title conveys its meaning; there are everyday references to the fact that the rich pay more in taxation than their share and the poor are made less poor by the social expenditure of the government. The purpose of this chapter is to define the problem in exact terms which would make a quantitative analysis possible.

Put very briefly, the problem to be discussed can be described as follows.

In most modern communities incomes are distributed in a very unequal manner. There are rich and there are poor, but while the number of the rich is few, the poor are many. Yet the total of incomes accruing to the rich is well comparable with the total of incomes accruing to the poor.

But side by side with the inequality of incomes there is in modern communities a growing recognition that, since the needs of all are the same, equal distribution is the social ideal. The student of politics argues that for the proper working of democracy equality of incomes is essential. The economist argues that given the total national income satisfaction is maximized with an equal distribution of income. This argument is based, on the one hand, on the law of diminishing marginal utility of income, and, on the other hand, on the assumption (based on the postulates of political democracy rather than economics) that persons with the same income possess the same capacity of enjoyment. In addition, the currently accepted economic doctrine denies that there is virtue in thrift (made so much easier by the existence of high incomes) *so long as there is unemployment*, and thus the main traditional justification of inequality falls away.

One way of changing the distribution of incomes which can be brought about within capitalist society is to redistribute incomes through public finance. It is obvious that the activities of the government alter the distribution of incomes. That this is so is clear from

the simple consideration that the same pattern of government expenditure can be financed by different systems of taxation whose effect on the distribution of incomes will be totally different. In common language we speak of taxation being more or less progressive, or more or less regressive, relative to a given pattern of expenditure, accordingly as it is deemed to change the distribution of incomes in one direction or the other.

It is necessary, before anything else, to define *income* in exact terms, suitable for the quantitative analysis that is to follow. Section ii is a digression on income which takes us into the field of economic theory.

Having defined 'income', it is necessary to put into exact terms what is meant by a *redistribution of incomes*. To assert that incomes in a particular year have been redistributed is possible only with reference to some standard of '*neutral finance*' under which the system of taxation and the pattern of expenditure are so designed as to cause no redistribution of incomes. The digression on 'neutral finance' is contained in § iii. This section is in the field of the theory of public finance, and to bridge the gap between theory and statistical measurement certain arbitrary assumptions have to be made. These assumptions and the alternative statistical measurements they yield are set out in Ch. XVI, § iv.

It is also necessary to discuss the incidence of taxation and, in a similar way, that of government expenditure. It is here assumed that the incidence of direct taxes is on the taxpayer while indirect taxes are shifted to the ultimate consumer. Similar considerations apply to transfer expenditure and subsidies. The justification of this general assumption is expanded in § iv, and the assumptions as they affect particular taxes or expenditures is further discussed in some of the relevant chapters. It is desirable to point out that the assumptions relating to incidence are of a nature quite different from those relating to 'neutral finance' and the arbitrary element in them is far smaller.

The different methods and processes of redistribution are discussed in §§ v–viii, where it is stated that our primary concern is the *vertical* redistribution of incomes (that is, redistribution between different income or social classes), and where redistribution through public finance is defined so as to distinguish it from other kinds of redistribution on the one hand and from the activities of the government not deemed to fall within the scope of public finance on the other hand.

ii. Digression on income

The central concept of income is well defined by Professor Hicks: 'The purpose of income calculations in practical affairs is to give people an indication of the amount which they can consume without impoverishing themselves.'[1] This central concept can be approximated by three different definitions, each of which has its own merits and demerits and each of which can be considered both *ex ante* and *ex post.*

(1) Income is defined as the maximum that can be consumed while maintaining the capital value of prospective receipts in terms of money intact.
(2) Income is defined as the maximum that can be consumed while still allowing the consumption of the same amount in terms of money in the future.
(3) Income is defined as the maximum that can be consumed while still allowing the consumption of the same amount in *real* terms in the future.

It can be seen that the first and second definitions are identical if rates of interest are not expected to change, and that the second and third definitions are identical if prices are not expected to change. All definitions are identical if neither prices nor rates of interest are expected to change. It can be also seen that all possible definitions of income could be reduced to one of these three definitions.

When translating the economist's concept of income into terms suitable for quantitative measurement two difficulties arise. The first one can be treated briefly. *Ex-ante* incomes, based on expectations, are not suitable for measurement and hence the *ex-ante* concept of income must be rejected as being unsuitable for our purpose. The statistically measurable *ex-post* concept of income consists of consumption and capital accumulation.

The second difficulty arises because of the problem of human capital. Since the value of human capital cannot be measured and would be very difficult to impute (not speaking of ethical objections to such an approach in a non-slave society), only changes in physical capital are taken into account. The consequence of ignoring human capital is that as regards the reward of personal exertion receipts are taken as equal to income.[2]

[1] J. R. Hicks, *Value and Capital*, p. 172 and ch. xiv, *passim.*

[2] For instance, no allowance is made for extra strain on labour detrimental to future productivity. The income-tax earned income allowance could be regarded as a type of maintenance allowance given on human capital corresponding to the wear-and-tear allowance for machinery.

Corresponding to the three definitions of income given above, there are three statistical measurements of income. In all cases income consists of consumption and capital accumulation. On the first definition capital accumulation is the increase in the money value of assets over a period. On the second definition capital accumulation is the increase in the money value of assets if rates of interest, current and expected, had remained unchanged. On the third definition capital accumulation is the increase in value had both rates of interest and the expected money returns of the assets remained unchanged, that is, the value of capital assets produced over the period less the value of assets used up. On this third definition capital accumulation is equal to the value of the increase (rather than the increase in value) in the stock of capital.

In practice the choice is between the first and third definitions. The third definition is doubtless much nearer to a definition of income appropriate for purposes of national income measurements than the first one.[1] Hence we shall define income as the amount an individual (or a nation) could have consumed while *maintaining the real amount of his capital stock intact.*

In measuring investment we take account of all goods for which a depreciation account is kept in practice (instead of all goods for which a depreciation account *ought* to be kept). Thus it is conventional to include private motor-cars in consumption and lorries in investment. It is also conventional to include armament expenditure in consumption.[2]

The national income has three different *aspects*: net national income[3] is the sum of the net income of all individuals and corporate bodies, avoiding duplication; net national output is the sum of the value added by production by each firm; net national expenditure is the sum of amounts expended on consumption or saved. If these terms are properly defined, they should by definition be equal. The problem of making national income, output, and expenditure equal is one of logic and not of economics.

Net national income can be measured either at factor cost or at market prices. It is preferable to value output at factor cost, that is,

[1] It can be said for the first definition that under it the measurement of income is straightforward since no correction for price changes is involved. On the other hand, the third definition is nearer to the theoretical *ex-ante* definition because it ignores windfall changes in capital values.

[2] Cf. p. 35, below.

[3] Net national income includes net additions to the stock of capital, whilst gross national income includes the gross output of investment goods including those produced to replace existing goods.

include only costs which form the incomes of factors of production and exclude indirect taxes accruing to the State. The reason for this is that the national income at factor cost is independent of the way in which taxation is raised, whilst national income at market prices is influenced by any change from direct to indirect taxation, or vice versa.

National income includes those goods and services which are usually sold for money. Thus the imputed rent of owner-occupied houses is included. But certain important services are usually omitted, of which housewives' services are the most important. It should also be noted that national income here always refers to the income accruing to residents in this country and not to income produced in this country.[1]

As can be seen, the definition of the national income is arbitrary, in the whole as in detail, and must necessarily be so. It is, however, possible to find a definition which is most suitable for one particular purpose. The definition of the national income is to some extent a matter of convention, and therefore our starting-point will be the definition most often used at the present, that of the official estimate. This definition, measuring *net national income at factor cost*, can be considered as satisfactory for our purposes if certain modifications are made as regards the valuation of investment in working capital and stocks (to make it consistent with the valuation of investment in fixed capital), as regards the definition of government income (to make it consistent with the definition of private incomes), and as regards several smaller points, all discussed in Ch. III.

So much for definition. As regards methods of measurement the easiest way is to measure the national income by the *adding incomes method*; this is so because income-tax data cover about three-quarters of the national income,[2] and because these data after certain adjustments can be considered as satisfactory. The concept of 'actual income', as defined for the purposes of income tax, is the nearest equivalent to the economic definition of income.[3]

[1] The difference consists of income from oversea assets.

[2] Incomes not assessed for income tax either evade tax or are exempt from assessment. Exempt incomes include personal incomes under the income-tax exemption limit and the income of the Crown and non-profit-making bodies (charities, churches, schools, hospitals, and friendly societies). The income-tax definition of income could of course be applied to all these categories.

[3] The most important differences between the Inland Revenue's and the economic definition of income are the following:

(i) Net national income excludes transfer incomes while the income-tax definition includes some transfer incomes and excludes others. In the case of pensions paid to employees it would be more correct to include contributions towards the

Consumption by an economic unit (an individual or corporation) may either fall short of or exceed his income. In the first case he is said to save, in the second to dissave. It follows from the central concept of income that saving leads to an expectation of betterment in one's future economic position. This is always so in the case of the nation, but not necessarily so in the case of an individual. For income was defined with reference to real capital, and saving-investment was defined as the value of additions to real capital (and not as the increase in the value of all assets). This definition is consistently applied to each economic unit; but certain peculiarities follow from this procedure.

If, for instance, the value of securities held by an individual increases relatively to other values he can realize the increase in value and consume it without impairing his future position. From the social point of view he is dissaving, but not so from the private point of view. At the same time someone else, buying the security, saves from the private but not from the social point of view.

This point has little significance with reference to the main problem, but it should be borne in mind that some of the arguments and conclusions given in the following chapters are directly dependent on the particular definition of income adopted.[1]

pension in the year they are made as part of the income of that year than to include the pension when it is paid and make some deduction for the contributions.

(ii) Payments in kind to employees, though part of income, are not assessed to tax.

(iii) Certain types of income are conventionally under assessed by the Inland Revenue, notably farmers' profits, while in other cases certain costs are allowed which should not be allowed on the economic definition. (The latter concerns mainly life insurance companies.)

(iv) Direct taxes paid should not be deducted from income when assessing income, but N.D.C. (though it should be regarded as a direct tax) was deducted.

(v) Although profits (positive incomes) are assessed, no deduction is made for losses (negative incomes) in the year they are made. An allowance is made in the following years when past losses can be set against current profits.

(vi) Income-tax law ignores changes in the money value of capital (except in the case of professional dealers) and the treatment of investment in fixed capital is also largely satisfactory. Though depreciation allowances are at original cost, this is corrected for replacement cost by the operation of obsolescence allowances, and therefore the results are satisfactory unless rapid changes in prices are associated with the non-replacement of assets. But the valuation of investment in working capital and stocks is entirely unsatisfactory since the change in the value rather than the value of the change in stocks is taken into account.

[1] Colin Clark (op. cit., p. 191) argues, for instance, that the rich dissave from the social but not from the private point of view, that is, the savings of the rich are positive if capital appreciation is taken into account but not otherwise. Thus the incomes of the richer classes are much greater if capital appreciation is included in saving than if it is excluded, and consequently a given system of taxation appears to be more progressive in the latter than in the former case.

iii. Digression on 'neutral finance'

A state in which incomes are redistributed can be regarded as a deviation from a state in which the distribution of incomes is left unaltered by the government. Such a state is not one in which no government exists but one with a system of neutral finance. 'A neutral system of taxation and public expenditure is one which translates into effect the voluntary judgments and preferences of the citizens, whatever they may be.'[1] The neutral system is one from which all deviations can be measured. All items of government revenue and expenditure can be resolved into two elements, a neutral and a differential. 'Absence of neutrality implies that some are compelled to pay different sums in taxation, or to pay in different ways, or to contribute to State expenditure on different purposes, from those they would voluntarily choose.'[2]

For each given pattern of public expenditure we can find a system of neutral taxation. Similarly to any given system of taxation we can find a neutral pattern of public expenditure. It is obvious that the possible number of systems of neutral finance is infinite, since there is one corresponding to every single pattern of expenditure or taxation. Of these combinations of expenditure-revenue patterns at least one will satisfy the criteria of an optimum system as developed by Einaudi's theory and defined by Dr. Benham. The differential element, according to Dr. Benham, should be measured from that particular system of neutral finance which is the optimal. There is of course no reason to assume that the actual system corresponds to the optimum.

Dr. Benham's optimal neutral system of finance is a concept too abstract to serve usefully as the basis of statistical measurement; this concept of neutral finance will therefore be rejected on practical grounds. Instead, another system of neutral finance will be chosen, out of an infinite possible number of such systems, and we shall choose that particular system of neutral finance which corresponds to the nature and scale of the actual system of public finance.

The nature and scale of the system of public finance in the circumstances of 1937 was determined rather by the pattern of public expenditure than by the pattern of revenue. Public expenditure was regarded as given and taxation was adapted to finance that expenditure. We shall therefore choose that particular system of taxation

[1] F. C. Benham, 'Notes on the Pure Theory of Public Finance', *Economica*, 1934, p. 436 et seq.

[2] Ibid., p. 451.

which is neutral to the actual public expenditure in 1937 and measure all deviations from that system.

Each tax or expenditure has an announcement and/or a distributional effect. The differential element consists of the sum of the announcement and distributional effects.

The announcement effect of a tax has been defined by Pigou:[1]

'In respect of any taxpayer, the damage that results from addressing to him any given tax formula may be defined as the excess of the satisfaction which he would have enjoyed had no tax been imposed on him over the satisfaction which he would enjoy if this tax formula were addressed to him *and* if a sum equal to what is taken from him under it were paid back to him in a lump.'

Pigou's definition can be easily applied to government expenditure as well as taxes. In respect of any beneficiary of government expenditure, the gain that results from addressing to him any given expenditure formula (that is, of the government spending a given sum on his behalf) may be defined as the excess of the satisfaction he would enjoy if this expenditure formula were addressed to him, *and* if a sum equal to what the service costs (as far as he goes) is taken from him in a lump, over the satisfaction which he would have enjoyed had he benefited by no public expenditure and paid nothing. We can assume that the announcement effect of public expenditure is always opposite to the announcement effect of taxation (except in the limiting case when they are nil).[2]

This inquiry is concerned with distributional effects only and ignores the announcement effects of both taxation and public expenditure. For instance, if a man pays £1 in tobacco duty this is regarded as being equivalent (from our point of view) to £1 paid in income tax. Similarly, if a schoolchild receives meals costing £1 this is regarded as the equivalent of £1 received in cash.

Government expenditure, as we shall see below, confers both divisible benefits which are clearly allocatable to individuals (including transfers and subsidies) and indivisible benefits. The neutral taxation to pay for allocatable benefits is, on the basis of what was said above, clearly defined; but it must in a number of cases remain hypothetical. If a man receives, for instance, medical treatment free of charge, the cost of which was £2, the neutral tax payment would

[1] *A Study in Public Finance*, p. 97.

[2] This is so even in the case of expenditure conferring divisible benefits because certain types of services would not be provided by private enterprise at all, while other services can be more efficiently provided by the government than by private enterprise.

clearly be £2. But it would be impossible for him to pay this sum unless he had the money. He must of course have more than that sum in order to pay willingly. Thus allocatable benefits are necessarily redistributive and in the case of non-redistributive finance may not be provided at all.

Neutral taxation to pay for indivisible benefits, on the other hand, can always be related to income. The monetary equivalent of the benefits an individual derives from communal expenditure, such as defence services, can be regarded as a function of income and is probably a progressive proportion of income. The problem of neutral taxation to pay for communal expenditure of this kind is discussed in Ch. XVI, § iv.

iv. Digression on the incidence of taxation and public expenditure

In the preceding section taxation and public expenditure were discussed as they affect particular individuals without saying who those individuals were. Ultimately all taxes are paid out of income and all public expenditure increases income, thus the incidence of particular taxes or expenditures falls on the income of particular individuals.

Two kinds of taxes are distinguished, direct and indirect taxes. Direct taxes are paid out of the income of the taxpayer and there the matter ends; their incidence is on the nominal taxpayer. Indirect taxes, on the other hand, are paid in the first instance usually by producers who shift these taxes to their consumers by charging prices higher than would otherwise be charged; the incidence of indirect taxes is therefore on the consumer, ultimately on the consumer of finished commodities.

The incidence of taxation was one of the main concerns of classical economics, indeed it was the mainspring of many of its more general theories. The question of incidence has still no generally accepted solution supported by empirical evidence, and it is admitted that the above statements are ultimately only assumptions which at best are only valid as first approximations; yet their general validity can be proved by indirect reasoning.

That the incidence of what are commonly called indirect taxes is on the consumer is generally accepted. There is evidence that the prices of the taxed commodities move with changes in the rates of tax. The incidence of these taxes is on the consumer if supply is elastic relatively to demand, and this was the case of almost all taxed commodities.

Certain doubts are entertained as regards the incidence of local rates, which theoretically may fall on the owner or occupier of the house, on the builder, or others. But all these doubts are theoretical, and it is accepted that in the particular circumstances of Britain in 1937 the incidence of rates was generally on the occupier, that is, on the consumer.[1]

The incidence of indirect taxes falling on producers' goods is not so clear cut and its theory has not been worked out so fully, possibly because these are a newer form of tax. The problems connected with their incidence are fully discussed in Ch. XIV, and the conclusion reached confirms the above general assumption.

Doubts are raised, however, about the incidence of what are commonly called direct taxes, among which income tax is the most important. Two distinct schools of thought can be distinguished which deny the theory, accepted by classical economists and generally accepted by Parliament (as reflected in the intentions of the legislature), that the incidence of direct taxes is on the immediate taxpayer.

The first school of thought believes that direct taxes, notably the income tax, are shifted by producers in the same way as taxes on commodities and their incidence is on the consumer.[2] The second school of thought is entirely different, for it simply maintains that the incidence of taxation cannot be determined, not even in general terms, and that there is no possibility of evolving a technique to answer the question.[3] In their opinion an inquiry, such as the present one, must remain useless.[4]

As against both these schools of thought certain arguments can be brought up, apart from theoretical arguments,[5] to prove that the incidence of direct taxes is on the taxpayer.

First, the distribution of personal incomes in this country has remained roughly the same for long periods and is also fundamentally the same in other capitalist countries, though the system of taxation is very different in each place and at each time. These distributions refer to gross income, that is, income before the payment of direct

[1] Cf. p. 141, below.

[2] This is the so-called 'business men's theory' expounded to the Colwyn Committee. But it is doubtful whether business men in fact behave in the manner they say they would under hypothetical circumstances.

[3] An example can be found in G. L. Schwartz, 'The Significance of Fiscal Statistics', *Journal of the Royal Statistical Society*, 1942, p. 92.

[4] Cf. evidence by Professor Cannan given to the Colwyn Committee.

[5] For the theoretical arguments cf. D. Black, *The Incidence of Income Taxes.*

taxes; thus it seems that changes in direct taxation do not affect the distribution of gross income but only the distribution of net income (income after the payment of direct taxes), which would indicate that the incidence is on the taxpayer.

Second, the share of wages in the national income is a fairly constant proportion through time though rates of taxation change; which implies that a change in direct taxation does not affect the division of the national income (before payment of taxation) between wages and profits, and therefore direct taxes fall on wage-earners and capitalists according as they pay these taxes.

Third, the long-term rate of interest is stable over long periods of time and this rate of interest is the gross market rate and not the rate net of tax; if income tax were shifted by business men, a rise in income tax would raise the market rate of interest.

The general assumptions relating to the incidence of taxation are also applicable to the incidence of public expenditure. As demonstrated in Ch. II, transfer expenditure is the counterpart of direct taxes and subsidies that of indirect taxes. Therefore the theories applicable to the incidence of direct and indirect taxes will be applied to the incidence of transfer expenditure and subsidies, respectively. The incidence of government expenditure on goods and services is discussed in Ch. XVI.

v. Output and factors of production

It was suggested in § iii that a certain initial distribution of incomes as between income recipients can be postulated which is altered by the intervention of the government. The net national income consists of rent, profits, interest, salaries, and wages; the net national expenditure consists of expenditure by private individuals or bodies on consumption or saving, and expenditure by the government on consumption or saving (where each item should be measured at factor cost); and net national income is equal to net national expenditure (and both are equal to the net national output).

The central idea, in the conception of the redistribution of incomes, is that the entire national output is allocatable to factors of production, the entire national income accrues to individuals, and the entire national expenditure benefits individuals.

All production is carried out with the aid of factors of production, that is land, labour, and capital, and the national output is the value of this production. The value produced can be attributed to the factors of production engaged in producing it and, since all scarce

factors of production are subject to ownership of some kind, to the owners of factors of production.

Factors of production are owned individually or collectively; collective ownership may be profit-seeking or not. The ownership of factors of production, and hence the accrual of income, is clear in the case of individual or collective profit-seeking ownership. In the latter case the ownership is determinate because all profits are distributed between the group of individuals who are the collective owners according to a fixed formula and the right to a share in profits has a definite capital value. But this is not so in the case of non-profit-making bodies. The government, in its aspect as the recipient of income from property and trading (but not taxation), can be regarded as an extreme case of a non-profit-making body.

Non-profit-making bodies are owned in the sense that they are controlled. According to the democratic method of control ownership is equally divided between members. But the income of any member cannot have a determinate capital value because the number of members can be, in most cases, increased or diminished without compensating payments. The crucial criterion is that on leaving a non-profit-making body no compensation is paid for the loss of benefit; this is so because rights to benefit are not transferable.

Two types of non-profit-making bodies will be distinguished, societies and public charities. To the first category belong Industrial and Provident and Friendly Societies (including Trade Unions and Co-operative Societies), and clubs. In the case of societies benefits accrue almost exclusively to members, and therefore it may be assumed that the income of societies should be equally allocated among members. In the second category of non-profit-making bodies are charities to help the poor, hospitals, schools and colleges, and religious bodies (which may be called public charities). The government, from the point of view of this analysis, might be added to this category, and the income of the government from property and trading, together with the investment income of public charities, will be called *public income.*

The income allocatable to an individual on account of ownership of factors of production will be called *producers' income.* Net national income is equal to the sum of producers' incomes. Producers' income may be either *net* or *nominal,* according as it excludes or includes transfer incomes. The sum of nominal producers' income is the nominal national income (that is, net national income *plus* transfers).

It may be noted that it is always easier to ascertain an individual's nominal producers' income than his net producers' income.

The bulk of the national income consists of personal incomes the allocation of which is clear cut. All personal incomes are actually received, except accrued interest on savings certificates.[1] Income received may be called *actual producers' income* or, if it includes transfers, *nominal actual producers' income.*

The accrual of corporate surplus (business savings before payment of taxes, including N.D.C.) is similarly clear cut. Such income is allocatable to holders of ordinary shares in proportion to the number of shares and is called *imputed producers' income.*[2]

Similar considerations apply to income on the invested funds of life insurance companies (ordinary and industrial) which accrue to policy holders (and not the shareholders of the companies) in a determinate manner. This income will also be included in imputed producers' income. The income of non-profit-making bodies, as far as it is the income of societies, will be allocated to their members and is also included in imputed income.

This same procedure, however, could not be applied to public income without making an additional assumption, which can be made on several alternative lines, as to how it should be attributed. We shall call the share in public income attributed to an individual his *attributed* producers' income; and we shall therefore distinguish between *unadjusted producers' income* (consisting of nominal actual and imputed producers' income) and *producers' income* proper which is the sum of actual, imputed, and attributed producers' income.

vi. Expenditure and Consumers

Producers' income is an individual's share in the national income which accrues to him in his capacity as the owner of factors of production. Similarly, the individual has a share in the national expenditure, in his capacity as a consumer, which can be called *consumers' income.* The difference between the producers' and consumers' income of an individual is defined as the *net redistribution of income*

[1] Interest on savings certificates, however, can be regarded as if actually received. Income in kind is of course included.

[2] It is sometimes argued that the proportion of earnings of a company not distributed to shareholders is determined by the directors without reference to the shareholders' wishes, and a greater proportion is reinvested in the company than shareholders would wish, and therefore undistributed profits are not equivalent to distributed profits of the same amount from the shareholders' point of view. This argument, however, could only be valid if it could be shown that undistributed profits are not reflected in increased share values.

concerning that individual. Such redistribution is brought about in two ways: either compulsorily, through the activities of the government; or voluntarily, through gifts, life insurance, or betting.

The activities of the government affect an individual in two ways: they reduce his income by taxation and increase his income by the benefits conferred upon him through government expenditure. These benefits in turn are of two kinds: (*a*) divisible benefits where the beneficiaries of the government expenditure can be clearly and unambiguously defined, and (*b*) indivisible benefits where the allocation among the different members of the community can only proceed on the basis of an arbitrarily chosen assumption. In the course of this inquiry we shall attempt to allocate indivisible as well as divisible benefits; but since the degree of conjecture is different in the two cases, it is important to keep them separate.

Hence, in an analogous manner to the distinction made above as regards the different kinds of producers' income, we shall distinguish between three kinds of consumers' income. An individual's consumers' income will be defined as the sum of *actual* consumers' income, *imputed* consumers' income, and *attributed* consumers' income. *Actual consumers' income* is defined as nominal actual producers' income, as above defined, less taxation and voluntary transfers. *Imputed consumers' income* is defined as (*a*) imputed producers' income, as above defined, less taxation and voluntary transfers *plus* (*b*) the value of divisible benefits (other than transfers) conferred upon him by the government or voluntarily. *Attributed consumers' income* consists of the value (as measured by money cost) of the appropriate share of indivisible benefits conferred on an individual by the government, as calculated on the basis of assumptions specified in Ch. XVI.

We shall define, in an analogous manner to the above definitions, *unadjusted consumers' income* as the sum of actual and imputed consumers' income and *consumers' income* proper as the sum of actual, imputed, and attributed consumers' income.

An individual's consumers' income will exceed or fall short of his producers' income according as the net redistribution of income concerning that individual is positive or negative. The sum of these individual differences must add up to nil, since the total of consumers' incomes must equal the total of producers' incomes (and both totals equal the national income).

This means that in terms of money the net redistribution of income must be nil; this does not imply that in terms of satisfaction net redistribution is also nil, since total welfare will be affected by it:

it can be presumed to have increased when as a result of redistribution the distribution of consumers' income is more equal.

The above definitions may be summarized in the following way:

Net national income = Producers' incomes = actual producers' incomes+imputed producers' incomes+attributed producers' incomes = unadjusted producers' incomes+public income.

Nominal net national income = Net national income+transfers = nominal actual producers' incomes+imputed incomes+attributed incomes.

Net national expenditure = Consumers' incomes = actual consumers' incomes+imputed consumers' incomes+attributed consumers' incomes = unadjusted consumers' incomes+indivisible benefits.

vii. The different methods of redistribution

Redistribution of incomes through public finance is but one of the methods of redistribution. No doubt the (quantitatively) most important kind of redistribution is carried out by means of the family, that is, by the sharing of incomes within the family, since all members of the family are consumers but not all are producers. This particular type of redistribution, which is not interesting from an analytical point of view, will be excluded from consideration altogether by taking the *economic family* and not the individual as our unit.

We are especially interested in the redistribution of incomes between *groups* of families. The grouping of families can be according to a number of criteria, such as types of income, size of income, industry, occupation, district, or even religion; but since mobility between industries, occupations, districts, and religions is comparatively free (at any rate in the long run), we are more interested in redistribution of incomes between groups classified according to *standard of living*.[1] The latter type of redistribution is called *vertical* redistribution and the former, such as redistribution between families of different size, *horizontal*.[2] Vertical redistribution has an unambiguous meaning—redistribution from the rich to the poor—whilst horizontal redistribution can be defined in a number of ways.

The redistributional effect of any tax or expenditure can be split

[1] Standard of living is a better index of welfare than income, for it eliminates differences due to the size of the family or price differences (e.g. in rent) between districts.

[2] The vertical distribution of incomes is determined by more permanent factors, such as the distribution of ability, property, social forces, and opportunity.

into vertical and horizontal effects; of the two we are here interested in the vertical effect only. The distribution between capital and labour incomes can be regarded as a function of the vertical redistribution, since the distribution of the national income between capital and labour is one of the primary factors determining the vertical distribution of income.

Redistribution may be either private or public. Private redistribution, which is voluntary, can be direct—by means of gifts or inheritance—or indirect—by means of life insurance or betting.[1] We shall ignore private redistribution because the *vertical* redistribution brought about privately is quantitatively negligible as compared with the vertical redistribution brought about by public finance. No doubt on balance direct private transfers are from the rich to the poor; but there is no reason to assume that redistribution through life insurance or betting is correlated with income.[2]

Private and public redistribution are also distinguished because the former is voluntary, the latter compulsory. The kind of services provided by means of private or public transfers need not be different. Hospitals, for instance, are provided by both means.[3]

Most activities of the government, as expressed in Acts of Parliament and other laws, have some effect on the distribution of incomes, even though they do not result in public expenditure. This is particularly the case of economic legislation, such as the Factory Acts and minimum wage legislation. This kind of redistribution differs from that brought about by public finance in that it does not give rise to financial transactions, that is, to transactions recorded in the Government Accounts.

In the present inquiry we shall restrict ourselves to redistribution through public finance thus defined, that is, to those activities of the government whose financial aspect is recorded in the government accounts; but we shall interpret government accounts in a broad sense and include certain items which though not recorded are 'recordable', as, for instance, the cost of workmen's compensation.

The nature of the problem makes this restriction on our inquiry,

[1] From persons whose length of life is above expectation to those whose length of life is below expectation (in the case of life insurance), and from losers to winners (in the case of betting).

[2] This follows from the principles of insurance and betting.

[3] It is also obvious that public transfers should be taken net, after allowing for the reduction in private transfers which might be caused either by the provision of public services of the nature of substitutes or by taxing away the means from which private transfers were provided.

to those kinds of redistribution which are compulsory rather than voluntary and which are effected through public finance rather than economic legislation, inevitable. But it must be emphasized that the lines of demarcation between voluntary and compulsory transfers and those effected by public finance and other government activities are sometimes arbitrary.

Thus a duty on dried fruits comes within the scope of our investigation since it is a tax—a compulsory payment—yet it can be easily avoided by not consuming dried fruit; while the expenditure on top-hats (which may be looked upon as a kind of tax on certain occupations in so far as in the pursuit of these occupations the wearing of a top-hat is compulsory) does not. A clearer case is perhaps the comparison of trade-union subscriptions with social insurance contributions. The latter comes within our scope being a compulsory payment imposed by the government; the former does not although in certain trades it is just as necessary to belong to a trade union as to be insured.

Similarly the distinction between government actions secured through public finance and those secured through economic legislation sometimes gives arbitrary results. For instance, Elizabethan law made the consumption of fish compulsory on certain days of the week, which is a type of Act outside our scope; yet it is clear that the same kind of effect might have been brought about by a subsidy on fish paid for by taxation.

In the circumstances of 1937 most of the difficulties of demarcation were due to various restrictions on imports. Some of these restrictions, such as import quotas or import prohibitions, may have no financial effect at all; in others (brought about by tariffs) the redistributional effect may be much greater than recorded in the government accounts because of the price increase of home-produced goods. These effects, however, for lack of data and previous inquiries, will be ignored (except in the case of sugar where the effect of the tax on price and distribution is measurable and unambiguous). Similar considerations apply to imperial preference where the tax burden on the home consumer is obviously greater than the amount received by the Exchequer, the difference being a hidden subsidy to producers in the Empire.

viii. The process of redistribution

Let us ignore all differences between producers' and consumers' incomes due to causes other than the financial actions of the government. The difference between producers' and consumers' incomes

then arises in the following way: (*a*) producers' income is *augmented* by transfer payments (unemployment benefits, pensions, &c.); (*b*) it is *reduced* by the government taking a share through government income and direct taxes; (*c*) it is further *reduced* through the government taking a share in the form of indirect taxes (which are net, that is, subsidies are set against them) which change market prices relatively to what they would be otherwise (that is, change prices from factor cost); and (*d*) it is *augmented* by the divisible and indivisible benefits of government expenditure on goods and services and government saving. Incomes after adding transfers are called *nominal producers' incomes*; after deducting attributed income (share in public income) and direct taxes *available incomes*, that is, incomes available for consumption and saving, both valued at market prices; after deducting indirect taxes and subsidies, *private consumers' income*, that is, consumption and saving, both valued at factor cost; which is augmented by divisible benefits to *unadjusted consumers' income* and by indivisible benefits to *consumers' income*.

This process can be summarized in the following way:

Nominal producers' income = producers' income+transfers = nominal unadjusted producers' income+attributed income.

Available income = nominal producers' income—attributed income—direct taxes = nominal unadjusted producers' income—direct taxes = consumption (at market prices)+saving (at market prices).

Private consumers' income = available income—indirect taxes+subsidies = consumption (at factor cost)+saving (at factor cost).

Unadjusted consumers' income = private consumers' income+imputed public expenditure = actual consumers' income+imputed consumers' income.[1]

Consumers' income = unadjusted consumers' income+attributed consumers' income = producers' income+transfers—attributed producers' income—direct taxes—indirect taxes+subsidies+imputable public expenditure+attributed consumers' income.

The sum of public income, direct and indirect taxes is equal to the sum of transfers, subsidies, divisible and indivisible benefits, and government saving; hence the sum of producers' incomes is equal to the sum of consumers' incomes.

The redistribution of incomes is to be measured:

[1] Imputed consumers' income contains both private and public expenditure.

Transfers—attributed income—direct taxes—indirect taxes+subsidies+imputable public expenditure+attributed consumers' income = consumers' income—producers' income = unadjusted consumers' income—unadjusted producers' income+attributed consumers' income—attributed producers' income.

The arbitrary elements appear in attributed producers' and consumers' incomes only, but not in unadjusted producers' or consumers' incomes; hence the difference between unadjusted consumers' income and unadjusted producers' income can be called *partial* redistribution, the amount of which is not influenced by arbitrary assumptions. The sum of partial redistribution, however (unlike that of full redistribution), will not be nil but equal to public income *less* expenditure conferring indivisible benefits.

The distribution of producers' income will also be called the *initial distribution of income* and the distribution of consumers' income the *final distribution of income*. The government changes the distribution of income in two different ways: partly by causing a difference between the distribution of initial and final income, partly by influencing the initial distribution itself. The influence on the initial distribution can be direct, caused by a change-over from private to government expenditure, or indirect, caused by the long-run reaction of the final distribution on the initial distribution.[1]

The purpose of the present inquiry is to discover the difference between the initial and final distributions of income as above defined. The crucial analytical problem which emerges is that of the definition of the initial distribution of income against which the redistribution is measured. Since the initial distribution of income in a society cannot be regarded as given independently of the activities of the government—it is obvious that by assuming away the activities of the government we would assume away the whole existence of our society—we must find a definition for the 'initial' distribution which takes the existence of the government and the scale and nature of its activities as already given. The definition chosen for our purposes is that which would emerge if the system of finance were neutral, that is, if the initial and final distributions were identical. This means that we define the initial distribution of income as the distribution which would exist if public expenditure on goods and services were the same as in the actual case but if the taxation to finance that expenditure were such as to make consumers' income equal to producers' income for each unit.

[1] Cf. next section.

Let us suppose that the government distributes free milk for babies but taxes away its cost by a corresponding amount of duty on tobacco, in such a way that tax and benefit fall on the same income classes. Producers of milk will gain and producers of tobacco will lose; in so far as factors of production are specific to the various industries or, even if not specific, the proportion of labour and capital are not the same in the two cases, the initial distribution of income will always be altered. This effect of the activities of the government is analogous to the effect on the distribution of income of a new invention or a change in consumers' taste and will be ignored here. We shall arbitrarily choose the initial distribution which corresponds to the actual public expenditure.

A further complication arises from the fact that the initial distribution of income is influenced not only by the activities of the government (as expressed by its expenditure), but also by the system of taxation. If the actual system of finance is not neutral this may have some effect on the initial distribution owing to the fact that instead of one particular set of individuals another set spends a given amount of money and the objects of expenditure may not be the same in the two cases. This latter type of difference may or may not be important according as we deal with the problem of horizontal or vertical redistribution; the distribution of incomes between industries might be affected, but the distribution between income classes may remain virtually unaffected in so far as the vertical distribution of incomes in different industries is not very different. Since we deal with the vertical redistribution of incomes only, this particular problem may be neglected and we shall define the initial distribution as the actual initial distribution of income.

ix. Short- and long-term effects of redistribution

The problem of redistribution is essentially one in *comparative statics*, where total income remains unchanged; that is, we are not concerned with the effects of government finance on employment, though it is recognized that finance, especially redistributive finance, does influence employment.

But even neglecting dynamic effects, the short- and long-term effects of redistributive finance must be distinguished. Given the system of taxation and expenditure, the measurement of redistribution is also affected by the period of observation. This inquiry is concerned with 1937 only. In that year contributions to unemployment insurance exceeded benefits paid out, hence a redistribution from the insured classes to others was recorded; but in other years the opposite

results might be obtained. Also, if a single year is considered, there is redistribution from persons of working age to those below and above working age, mostly in the form of expenditure on education and old-age pensions. Most of this redistribution cancels out if a person's whole life is considered. These points must be borne in mind when interpreting the results.

In the above examples, unemployment benefit and old-age pensions, in so far as they were financed by social insurance and not state subsidy, concern the short-term redistribution of incomes only and are unlikely to have any effects on the long-run distribution of incomes. Other kinds of taxes or expenditures by redistributing incomes leave, after a time, a permanent mark on the initial distribution of income. The type of tax in this category is one which tends to equalize the distribution of capital and the type of expenditure one which tends to equalize educational and other opportunities.

Death duties, if they were in existence for a sufficiently long time and if avoidance by gifts *inter vivos* were prevented, would be the best example of such tax. They would mitigate not only the inequality of income from capital but also, as a consequence of this, the inequality of labour incomes. Income tax and surtax are perhaps more effective in this direction in so far as they are paid out of capital and not income.

Expenditure on education is of course the best influence on the distribution of incomes in the long run; so are also free health services and subsidies on food and housing. Social transfer expenditure causes mostly horizontal redistribution except in so far as it is subsidized by the Exchequer; but even then the Exchequer subsidy must be renewed year after year because it has no permanent effect on the initial distribution of income.

II

THE GOVERNMENT ACCOUNTS

i. The nature and significance of government finance

In this chapter the financial aspect of the government will be surveyed and analysed.[1] In theory the government can be regarded as a firm or as a fictitious entity, not different from the collection of individuals it represents. But neither of these simplified assumptions will properly describe the complexity and uniqueness of the government's function.

The economic activity of the government consists of two distinct categories. In certain respects the government behaves as a private firm; it produces certain services and sells them to the public on a business basis. Thus the government produces gas and electricity, provides tram and bus services, or runs botanic gardens. Other activities of the government are unique, not because they produce services different from those privately produced, but because these services are not sold in the market. For instance, education is both privately and publicly provided, but the government does not charge for it according to the market principle; on the other hand, the Post Office is a unique service but is run as a business concern.

The difference between market sale and other forms of payment is twofold. In the first place, a price or fee is paid as against no specific payment. In the case of a price or fee there is a *quid pro quo* basis, absent in the case of taxation. Payment is dependent on services rendered, while taxation is compulsory and no specific services are rendered for specific taxes, though it is true to say that taxes as a whole pay for services as a whole. On the expenditure side the same distinction can be found between ordinary goods and services and *grants*.[2]

Secondly, there must be no discrimination in the sale of services by the government as a business; for the same service each should pay the same price and for the same payment each should obtain the same service.

In its capacity as a firm the government makes profits which should be included in the national income. But certain cases where the government has monopolistic position (e.g. the Post Office) and uses

[1] By government is meant the central government, the various extra-budgetary funds, and the local government authorities.

[2] H. Dalton, *Principles of Public Finance* (9th ed.), ch. xvii.

this position to extract from the public payments in excess of the cost of production (including interest on capital) must be distinguished. The monopoly surplus is best regarded as a tax. The ownership of property by the government also yields income which should be treated as the income from property of an individual or firm. Similarly, the government may have a debt, in which case interest on it should be treated as negative income.

In the other category of government activity there is no connexion between particular items of 'income' and 'outgo'. The government acts as a collection of individuals but with powers of compulsion not possessed by other associations.[1] Also, for the same reason, the government (unlike private individuals or firms) may borrow internally unlimited amounts without having corresponding assets.[2]

'Income' and 'outgo' in the government sector have not the same meaning that they have in the private sector of the economy. The economic definition of income is applicable only to the income which the government obtains as a firm, that is, profits, interest, and rent obtained from trading or the ownership of property. This income is called the *real income* of the government. In addition the government, by its nature as government, is able to raise money by *taxation* without, at the same time, correspondingly increasing its liabilities. The 'income' of the government consists of its real income and taxation and is called *revenue*.

When separating the activities of the government as a firm and as government, all capital transactions were included in its activities as a firm. If the government spends on capital account there is a corresponding increase among its assets; or if it has capital receipts there is an increase among its liabilities. Therefore 'outgo' must be restricted to expenditure on income account and will be called *government expenditure*. The difference between *revenue* and *expenditure* constitutes saving by the government, that is, the value of the increase of assets owned by the government. Positive saving is usually called surplus, negative saving deficit.

The economic significance of the government is tested not by the proportion of real government income to the national income but by the proportion of revenue to national income, or of government expenditure to national expenditure.[3]

[1] This uniqueness is really a matter of degree, for dissatisfaction, even with taxation, might cause emigration. But while a voluntary association can be left without joining another, the State cannot.

[2] It is always possible to raise enough by taxation to pay interest, and repayment can always be effected by a capital levy.

[3] See p. 62, below.

ii. The items of the government accounts

In the abstract sense the government is unable to consume because, being impersonal, it cannot have satisfaction from consumption. The term 'consumption by the government' must always refer to a collection of individuals having collective wants which can be satisfied by the government. Consumption involves the using up of resources and factors of production. All expenditure by the government involves ultimately the using up of resources and factors of production, but the using up can be either direct or indirect. If the government keeps officials, trains soldiers, builds battleships, or pays sums to other governments, a direct using up of resources is involved. These resources are the services of officials, soldiers, workers in shipyards, and materials used, and goods or gold sent abroad. On the other hand, the government pays unemployment benefits, old-age and war pensions, in which case it transfers the right to consume to others who, in their turn, use up resources; in this sense the government consumes indirectly. The part of government expenditure which involves a direct using up of resources is called real government expenditure or *government consumption*; the other part which involves an indirect using up of resources is called *transfer expenditure*. Ultimately money spent on transfer expenditure, if not paid back to the government in taxation, is either spent on consumption or saved.

The division of government expenditure into real and transfer expenditure is the counterpart of the division of revenue into real income and taxation. For the real income of the government is the direct product of factors of production owned by the government, while taxation is an indirect product which accrues directly to factors of production privately owned and is *transferred* to the government.

In the economic sense the income and consumption of the government are equivalent to its real income and real expenditure. In the particular sense, applicable to the government only, 'income' is called revenue and 'outgo' is called government expenditure. The former consists of real income and transfer income (that is, taxes), the latter consists of real expenditure and transfer expenditure.

Ultimately all taxes are paid out of income and all transfers accrue to income. But in the technical sense direct and indirect transfers must be distinguished. Direct transfer involves a transfer of purchasing power directly by handing over part of income. Indirect transfer has the same effect in that individuals pay for certain commodities and services a price different from the factor cost of produc-

tion. One can therefore distinguish direct and indirect taxes, and direct and indirect transfer expenditure. Direct taxes (for instance, income tax) involve a direct transfer of purchasing power to the government and a direct diminution in the income of the taxpayer. Direct transfers (for instance, unemployment benefit) involve a direct transfer of purchasing power by the government to the beneficiary and a direct increase in the income of the beneficiary. Indirect taxes diminish the income of the taxpayer by raising the prices of certain commodities and services, the government receiving the difference between market price and factor cost. Indirect transfers increase the income of the beneficiaries by lowering the prices of certain commodities and services, the government paying the difference between factor cost and market price. It is usual to call indirect transfers *subsidies* or *price-subsidies*.

Direct taxes can be divided into income and capital taxes, as the tax is paid in the first instance on income or on capital. Similarly, direct transfers can be divided into transfers to income and to capital, as they accrue in the first instance to income or to capital.

Indirect taxes can be divided into indirect taxes specifically on consumption and indirect taxes on production in general. The first category is levied on, or can be traced to, certain specific consumption goods and bears a definite relation to the quantity or value of such goods, while the latter category cannot be traced to final goods and services in a determinate way and enters into the prices of a great number of commodities and services. A similar subdivision of subsidies is also possible.

The government accounts can therefore be set up in the following way. It is essential that items on the expenditure side should be valued at factor cost.[1]

Government Accounts

1. Direct taxes on income	10. Direct transfers to income
2. Direct taxes on capital	11. Direct transfers to capital
3. Direct taxes (1+2)	12. Direct transfers (10+11)
4. Specific indirect taxes	13. Specific subsidies
5. General indirect taxes	14. General subsidies
6. Indirect taxes (4+5)	15. Subsidies (13+14)
7. Taxes (3+6)	16. Transfer expenditure (12+15)
8. Real income	17. Real expenditure
	18. *Expenditure* (16+17)
9. *Revenue* (7+8)	19. Saving
	20. *Revenue* (18+19 = 9)

[1] Not only real expenditure and saving but also transfers must be valued at factor cost. If the significance of the government in the economic system is

Such accounts are usually called Consolidated Government Accounts, the term implying that the government is regarded as a single economic unit. In practice it means that when the accounts of various government departments and agencies are summed up, transactions between different departments (such as, Exchequer grants to local authorities) should be cancelled. It follows that direct transfers should be net of direct taxes and all items on the expenditure side should be valued at factor cost.

In addition a Capital Account of the government can also be constructed, recording receipts and expenditure on account of capital assets and including a balance-sheet of capital assets at the beginning and end of the year. The difference between the net assets owned by the government at the beginning and end of the year constitutes saving by the government.[1]

iii. The government as a firm

In the first place the business activities of the government have to be separated from its other activities. The most important trading services have separate accounts set up on the business principle.[2] For the purposes of the government accounts the profits on the trading services must be ascertained, but their total receipts or total expenditure are irrelevant.[3]

Difficulty arises in cases where government trading services make abnormal profits or losses as compared to other business. Such profits or losses can be regarded as indirect taxes imposed on or subsidies given to certain goods and services. The Post Office can be regarded as a trading service on which the government has imposed a tax of 25 per cent. Hence the monopoly profits of the Post Office are a tax, though it is impractical for the government to call it so. In the same way local government housing services can be regarded as subsidized trading services. Social insurance

examined, taxes cannot be related to national income because they include taxes paid out of transfer incomes, nor can government expenditure be related to national expenditure (at factor cost) because it includes taxes paid out of transfer incomes.

[1] Saving by the government is not to be confused with capital expenditure by the government. The latter means either the sum of the expenditure side of the capital account or investment by the government as entrepreneur but not necessarily financed by the government.

[2] e.g. local government trading services (gas, water, electricity, housing, and transport) and the Post Office. The smaller trading services having separate accounts are not quantitatively significant.

[3] That is, the difference between the receipts and expenditure of the trading services is revenue, while the rest is 'self-balancing' and outside the scope of the government accounts as such.

could also be regarded as a subsidized service but for its compulsory nature.

It can be seen that whether a part of the revenue is regarded as tax or profit will influence the amount of real government income, and hence net national income at factor cost, but will have no effect on the amount of saving by the government.

Besides the income and expenditure of the trading services certain government receipts correspond to certain items of government expenditure and must therefore be treated as business receipts. These receipts are of the nature of fees, rents, and so on, and it is convenient to omit them on both sides of the accounts since they are usually charged on a cost basis. For example, local authorities undertake street improvement projects beneficial to private individuals who are then charged the cost of such improvement. On the other hand, certain fees are very similar to taxes. For instance, a large amount of fees is collected by Customs officials for services rendered to merchants which are of the same nature as protective duties.

iv. The government income from property

It is also necessary to analyse the capital assets owned by the government partly to ascertain the government's income from property and partly to separate income and expenditure on capital account from revenue and expenditure. In this connexion controversial questions arise with reference to interest on the national debt and expenditure on armaments.

The balance-sheet of government property consists of property owned by the government on the 'Assets' side and debt owed by the government on the 'Liabilities' side. The net income of the government from the ownership of property consists of the income from 'Assets' against which are set issues on account of 'Liabilities'.

'Assets' consist of physical property, either used by the government or hired out to the private sector, and paper titles; 'Liabilities' all consist of paper titles. Information as to the income (and expenditure) attached to paper titles and property hired out (such as Crown lands) is readily available, but income attached to property owned and used by the government has to be estimated. Such property consists mainly of buildings and roads and income from it is not shown in the published accounts but can be imputed. The income from buildings can be imputed on the same lines as income from privately owned buildings, while the income from roads can be imputed if certain assumptions are made with regard to the method of valuation

and the rate of interest used. The imputed income of the government from property should be included in real government income, and therefore in revenue, and an equivalent amount should be included in government expenditure. The amount saved by the government is not affected by the method or value of imputation.

It should be noted that most government property is owned by the trading services, such as the Post Office, but such property is not discussed here. 'Assets' exclude trading assets, and 'Liabilities' exclude the debt set against them, since the net income from such assets is already included in the income of the trading services.

In the private sector it is usual for debt to be set against certain pieces of property and for the value of property to exceed the value of debt, that is, for net assets to be positive. To some extent the private practice is followed by the government. Debt is raised specifically to improve the trading services, debt is raised (by local authorities) to build schools or hospitals, and even debt to cover their deficit is set against specific pieces of real property.[1] The central government raises specific loans to build roads. But this practice on the part of the government is entirely superfluous, for the solvency of the government does not depend on its net assets being positive. The internal debt of the government is always less than the value of privately owned capital and the interest charge always less than the total of private incomes, hence interest can always be met by normal taxation or the debt repaid by capital levy. The solvency of the government lies in its power of taxation and readiness to honour its obligations and is not dependent on the magnitude of its assets. That this fact is not always realized causes the government to raise specific loans,[2] which practice then leads to certain confusion in the theory of public finance.

The orthodox theory of public finance distinguishes productive and non-productive (consumption) loans. The proceeds of the former are used to construct something 'productive' which will 'pay for itself'; the proceeds of the latter are used to finance government consumption, that is, to cover the deficit. Interest on the former is regarded as interest paid in the private sector, but interest on the latter is regarded as transfer income.

From the point of view of government accounting or national accounting, there is no difference between interest on productive and

[1] For instance, town halls are mortgaged.

[2] For probably the same reason a higher rate of interest is paid on specific loans than on non-productive loans, such as war loans.

interest on consumption loans.[1] The effect of these loans on welfare, on which the distinction has been based, is already reflected in the national income.[2]

In the first place, how can one distinguish the part of the present government debt which is due to productive loans from the part due to consumption loans, since the division into national debt and specific debts is purely arbitrary? Let us suppose that the government has a surplus in one year and deficit in the next. There are three methods by which the government can finance the deficit; it can sell the assets purchased on the previous year's surplus, it can mortgage these assets, or it can raise a debt independently from its assets. In either of the first two cases the value of assets owned by the government, less specific debt set against them, is diminished; while in the last case a debt caused by consumption loan is created. Hence the present size of productive and consumption loans depends only on the financial technique of the past, not in the wider sense implying a choice between taxation and borrowing, but in a narrower sense. The relative size of specific loans and the national debt further depends on which type has been more favoured by repayment out of any surplus. From the point of view of the government or of the nation the choice between repaying part of the national debt or part of the debt raised to build roads (provided the rate of interest was the same on both) is a matter of indifference; yet this purely financial manœuvre determines the relative sizes of the two types of debt.

It is therefore impossible to say which part of the existing debt is due to productive and which part to consumption loans, and hence it is impossible to say which part of the present issues of interest is on account of productive and which part on account of consumption loans. The only value which can be ascertained is that of the *net* assets of the government and the corresponding amount of *net* income from government property. Government debt, whatever its origin, is to be regarded as a negative asset belonging to the government and all interest on the debt as negative government income.

Past and existing practice has regarded interest on specific loans as suggested here, but interest on the national debt, in so far as it was an internal debt, has been regarded as transfer expenditure and its amount deducted from the total of nominal incomes to arrive at the

[1] Productive loans generally conform to specific loans and consumption loans to what is called the national debt.

[2] The effects of loans on welfare are, however, more complex than assumed. The simple distinction of productive and non-productive loans is possible only under conditions of full employment.

value of the national income at factor cost. While it is true to say that interest on the national debt is not real expenditure since no direct using up of resources is involved, it can be said that such interest is not transfer expenditure either. It is not government expenditure because it is not paid out of revenue but is to be deducted to arrive at the amount of revenue. The size of the national income is the same whether interest is regarded as transfer income or as negative government income, but the latter procedure seems to be more logical and also more convenient from the point of view of analysis. It is more logical because it is based on the analogy of interest on the national debt to business costs and not to expenditure out of income, and it becomes more convenient when the national income is divided into private incomes and government income.

Interest on borrowed capital in business is deducted from income as the cost of earning such income. Interest on the national debt is of the same nature. Government expenditure, as explained on p. 26, has no *quid pro quo* basis which, however, is present in the case of interest on the debt. The lender pays a certain sum for which he receives interest for a given period and a capital sum at the end of this period. The government may have an obligation (at any rate a moral obligation) to maintain certain other services as well, but in their case the *quid pro quo* basis does not exist. Moreover, the obligation to pay interest on the debt has a capital value at which the obligation can be settled. In no other case is the government's annual obligation interchangeable for a capital sum.[1,2]

v. Capital expenditure

The problem of capital expenditure by the government is connected with the problem of the division of the national product into consumption and investment goods. It is usual to include among investment goods those goods for which in practice a depreciation account is kept. If the government acquires capital assets the transaction is

[1] Except war pensions, which in some cases have been interchanged for lump sum payments. But old age pensions cannot be capitalized because the government's obligation is for an infinite period, it extends to persons not yet living, and therefore only the government could assure the continuity of the service with an absolute degree of certainty.

[2] A minor point is that the object of all government expenditure can be expressed in real terms, and therefore when money values change the money expenditure of the government will also change. If prices doubled, old age pensions, unemployment benefits, or superannuation payments to civil servants would also be expected to be doubled in money terms; but interest on the national debt is fixed in terms of money, and holders of the national debt are regarded as other *rentiers*, benefiting or suffering by a change in prices.

not recorded in the government accounts as such, but a depreciation account is set up and every year the sum necessary for depreciation and maintenance is included in government expenditure in order to maintain the asset or to replace it at the end of its life. The amount of maintenance and depreciation (that is, interest and amortization) should be included in government expenditure whether the depreciation is actually made good or not. In the ideal case from the accounting point of view a specific loan is raised against the purchase of the asset which is repaid during the life of the asset.

Local authorities and all trading services publish separate revenue and capital accounts on these principles, but it is doubtful if the principles are followed closely enough. In the first place, interest on public buildings and so on is not included in either income or expenditure, for which a correction has been suggested above, and secondly, the amortization quotas usually arrange for a premature repayment of the debt. The excess of repayment over depreciation is properly regarded as saving.

For the central government the separation of capital accounts is rather laborious. Certain capital receipts are included in *Miscellaneous Receipts* and in *Appropriations-in-Aid* which, if not offset by capital expenditure, are to be excluded from revenue.

Generally speaking, all expenditure on durable goods is capital expenditure and therefore excluded.[1] Difficulty is caused by expenditure on armaments. Armaments are produced by industries producing investment goods, and the nearest approximates to armaments in the private sector, such as aeroplanes, lorries, or ships, are regarded as investment goods. Yet expenditure on armaments is customarily regarded as expenditure on consumption goods. The chief reason is convenience, since it is impossible to set up depreciation accounts for armaments. In the first place the types of armaments used change rapidly and this change cannot be foreseen, neither can their normal length of life be foreseen; in the second place, the use of armaments is not continuous, but is at unforeseen intervals. Even if all technical factors could be foreseen, it is impossible to set up depreciation accounts without explicitly assuming the expectation of war at regular intervals which is an ethically and politically untenable assumption. It is therefore highly convenient to regard expenditure on armaments as expenditure on consumption.

[1] It might be true to say that putting milk into babies or spending on education is the best investment, but in either case only an improvement in the service and not the maintenance of existing services can be regarded as capital expenditure.

It is an entirely different question whether expenditure on armaments should be regarded as expenditure out of the national income or as the cost of maintaining the national income. There are two reasons why it is preferable to adopt the first rather than the second method.

Expenditure on armaments is included in or excluded from the national income according to the purpose for which national income is measured. Expenditure on armaments may be excluded if national income is regarded as a welfare concept. Here, however, national income is treated from the point of view of productivity and therefore expenditure on armaments is included. This is so because the real resources used to produce armaments could have been used for other purposes if preferred.

Secondly, it would be highly inconvenient to regard armaments as the cost of producing the national income. The cost necessary for the maintenance of the national income is not necessarily equal to actual expenditure on armaments and is dependent on uncertain expectations and therefore is not suitable for quantitative expression.

vi. THE CONSOLIDATED GOVERNMENT ACCOUNTS

The consolidated accounts treat the government as a single unit, and hence all transactions between various government departments or agencies are cançelled.[1] Both logically and statistically three distinct stages in the process of consolidation can be distinguished. Payments from one government department to another may be of three different kinds: they may have the nature of pure transfers (such as the Exchequer bloc grant to local authorities), they may be discernible tax payments (that is, direct or specific indirect taxes), and they may be indirect taxes on production in general or taxes paid out of transfer incomes. Accordingly, first, second, and third approximations to the ideal consolidated accounts can be distinguished.[2]

The first approximation to the ideal accounts, as shown in Table 1, includes the receipts and expenditure of all government agencies,[3]

[1] Either by the cancellation of items of equal amount on both sides of the account, or by the transference of an item from one heading to another on the same side.

[2] Published accounts, e.g. C. Clark, *National Income and Outlay*, Table 59, are first approximations.

[3] United Kingdom Exchequer, Northern Ireland Government, Road Fund, Local Loans Fund, Irish Land Purchase Fund, Post Office Fund, Wheat Quota Fund, Unemployment Insurance and Assistance Funds, National Health Insurance Funds, Pensions Funds, and local authorities in England and Wales, Scotland, and Northern Ireland.

excluding trading and capital transactions and excluding the Exchequer contribution to local authorities and extra-budgetary funds.

TABLE 1. *The consolidated government accounts in 1937 (first approximation)*

(In million £'s)

Revenue		*Expenditure*	
Inland Revenue duties	503·9	Social expenditure	529·1
Customs and Excise duties	335·8	Economic expenditure	111·0
Motor-vehicle duties	33·7	Defence	237·8
Post Office and B.B.C. profit	11·9	Other common services	41·1
Rates, &c.	200·6	Administration	43·2
Social insurance contributions	107·0	Tax collection	18·7
Wheat Quota	1·6	EXPENDITURE	980·9
Taxation	1,194·5		
Real income	−123	SAVING	91
REVENUE	1,072	REVENUE	1,072

There are two main technical difficulties. In the first place, published figures refer to receipts or expenditure during the financial year, while the figures in Table 1 are for the calendar year.[1] Secondly, Table 1 shows accruing liabilities and not actual receipts and expenditure, which usually lag behind liabilities.[2] Liabilities accrued during the year (on current incomes at current rates of taxation)[3] for income tax, surtax, stamp duties, and National Defence Contribution are used, instead of actual receipts; on the other hand, certain taxes are no longer in force but receipts still arise, due to payments in arrears, which are omitted here. Similarly, for interest on National Savings Certificates, interest accrued and not interest issued has been taken. It is likely that there is some lag in all other items of revenue and expenditure also which has been ignored.

The taxation figures shown in Table 1 were taken over from Table 2 with the addition of receipts by local authorities from rates and, in Scotland, tolls, &c., contributions by insured persons and employers to the three social insurance schemes and receipts of the Wheat Fund.

[1] The financial year ends on 31 March for most authorities. Some accounts of insurance funds are published for the calendar year. The Exchequer accounts are published weekly, in broad categories, in the *London Gazette*. In other cases figures for the calendar year have been obtained by interpolation.

[2] From our point of view the incurring of liability is more important than actual payment. If income tax is payable one year in arrears of the accrual of income, the government may be credited and the taxpayer debited with the sum in advance. Thus spending the receipts in advance by the government does not constitute dissaving, but the spending by taxpayers of the sum necessary for tax payment does.

[3] But not necessarily due during the year.

From miscellaneous receipts (shown in Table 2) £3 mn. receipts on capital account were omitted and £2 mn. non-appropriated revenue set against expenses of general administration, leaving £18 mn. The income of the extra-budgetary funds (almost all from government bonds) was £12 mn. and the income of local authorities from trading

TABLE 2. *The central government accounts in 1937*

(In million £'s)

REVENUE			EXPENDITURE		
	Receipts	*Liabilities*		*Issues*	*Liabilities*
Income tax	270·2	304·1[5]	Interest and management of the National Debt	215·4	221·2[11]
Surtax	54 9	66·3[6]	Other Consolidated Fund expenditure[2]	3·1	3·1
Estate, &c., duties[1]	94 1	90 3[7]	Northern Ireland expenditure	12·3	12·3
Stamp duties[1]	26·5	24·5[7]	Defence[4]	232·2	232·2
N.D.C.	0·4	18·6[8]	Civil Votes[3]	395·8	395·8
Other Inland Revenue duties	1 7	—[9]	Cost of tax collection	13 6	13 6
Customs and Excise duties[1,3]	335 8	335·8	EXPENDITURE	872·4	878·2
Motor-vehicle duties[1]	33·7	33·7			
Post Office and B.B C net profits	10·9	11 9[10]			
Miscellaneous receipts[1]	23 0	23·0	Balance	−21·2	+30·0
REVENUE	851 2	908·2	REVENUE	851 2	908·2

[1] Including Northern Ireland transferred taxes and non-tax revenue.
[2] Excluding payments to Northern Ireland Exchequer
[3] Including Local Taxation Licence Duties in England and Wales.
[4] Including issues under the Defence Loan Act, 1937.
[5] See p. 93, below. [6] See p. 92, below.
[7] Receipts lag three months behind liabilities (Daniels and Campion, *The Distribution of National Capital*, p. 8.) [8] See p. 125, below [9] See p. 126, below.
[10] Commercial profits taken instead of Exchequer receipts
[11] For excess over issues see *Finance Accounts* (Usually p. 68 n. or 69 n)

services £26 mn. Against the visible income of the government (£56 mn.) must be set the cost of the national debt (£221 mn.). But the imputed income of the government must be added; £3 mn. rent can be imputed to the central government (which owns the buildings used by the extra-budgetary funds),[1] and £4 mn. to local authorities.[2] Interest on the value of roads can be put at £35 mn.,[3] making imputed government income £42 mn.[4] and all government income *minus* £123 mn.

[1] Estimated from sums paid in lieu of rates.

[2] Deducting interest on loans mortgaged against such buildings. Estimated from data in H. Campion, *Public and Private Property in Great Britain*, ch. iv.

[3] The value of roads can be estimated at about £1,200 mn., against which £200 mn. debt is outstanding. (Ibid., p. 81, and Stamp, *British Incomes and Property*, pp. 403–4.) Interest is taken at 3½ per cent., common on loans by local authorities.

[4] Correspondingly, £35 mn. has been added to economic expenditure and £7 mn. to the cost of administration.

The division of expenditure, unlike that of revenue, is on a functional basis and obtained on the following lines.

Social expenditure is defined in a wider sense than the one used in *Public Social Services.*[1] The main items are shown in Table 3. More information is given in tables on pp. 46–8, below, where the details shown imply the definition.[2]

TABLE 3. *Social expenditure in 1937*

(In million £'s)

Item	*Transfer benefits*	*Other benefits*	*Administration*	*Net expenditure*
1. Education	6·0	111·2	5·8	122·9
2. Health	34·7	58·7	6·0	99·4
3. Lunacy	—	12·6	0·6	13·2
4. Unemployment	82·3	—	11·0	93 2
5. Public Assistance	23·4	15·3	2·2	40·8
6. Civil Pensions	92·5	—	2·1	94·6
7. War Pensions	41·5[1]	—	1·1	42·6
8. Housing	21·6	—	0·3	21·9
9. Miscellaneous	—	—	0·4	0·4
TOTAL	301·8	197·9	29·5	529·1
Cost of finance[2]	—	—	7·9	7·9
GRAND TOTAL[3]	—	—	37·4	537·0

[1] Including £1·3 mn. war pensions payable abroad.

[2] Cost of financing central and rate fund expenditure. The cost of financing expenditure out of contributions to social insurance is already included in the cost of administration of the various services.

[3] Excluding workmen's compensation and benefits paid by societies. With these the total comes to £558 mn.

Expenditure provided out of taxation or being a charge on taxation came to £529 mn., but gross expenditure on social services came to £573 mn., the difference being provided by fees, contributions,[3] and rents. In addition £90 mn. was spent on capital account.[4]

[1] Last pre-war publication in Cmd. 5906, 1938. The definition adopted here is closest to the one in U. K. Hicks, *The Finance of British Government*, pp. 36–7.

[2] Under education, expenditure on agricultural education is included and also expenditure on museums. Expenditure on pensions and superannuation, and on the upkeep of public buildings, has been distributed (as far as possible) between the different services. The administration of old age pensions is included in public accounts in the cost of Customs and Excise administration. All the relevant items have been extracted from the various public accounts.

[3] Other than contributions to social insurance which is a tax.

[4] All figures exclude voluntary expenditure on similar services by individuals or associations.

Economic expenditure was the following:

	£ mn.
Roads and bridges	86·5[1]
Shipping	0·4
Civil aviation	1·7
Other transport and administration	0·3
Transport	*88·9*
Agriculture, forestry, and fisheries	15·3[2]
Mines Department	0·2
Overseas Trade	2·6[3]
Labour services and training	2·6[4]
Research	1·3[5]
TOTAL ECONOMIC EXPENDITURE	111·0

Expenditure on *defence* includes the amount shown in Table 2 except expenditure on civil aviation included in economic expenditure. Net expenditure on defence included in the civil votes for foreign and imperial services (£2·1 mn.), on A.R.P., and food defence plans (£5·2 mn.) have also been added.

Expenditure on *other services commonly provided* consisted of the following items:

	£ mn.
Street lighting	6·5
Fire brigades	3·5
Police	28·1
Local government judicial services	1·3
Prisons	1·7
TOTAL COMMON SERVICES	41·1

The cost of general *administration* includes items which it was impossible to allocate to any of the services distinguished. The cost of central administration (including Northern Ireland government) was £10·1 mn.,[6] of local administration (including the cost of voters' register) was £15·2 mn., of imperial and foreign administration £3·2 mn. To this £28·5 mn. must be added £7 mn. for the imputed interest cost of buildings, £5·2 mn. expended on Irish services,

[1] Of the total actual expenditure (£73 mn.), £4·5 mn. was recovered and £17 mn. was on capital account. On the other hand, £35 mn. interest on roads owned has been imputed.

[2] Including expenditure on administration, land fertility, beet sugar, milk, cattle, and herring 'subsidy', land drainage, forestries, fisheries, and Wheat Quota deficiency payments.

[3] Including the cost of the Department of Overseas Trade and interest on Treasury Bills to finance the Exchange Equalization Account.

[4] Cost of general administration, training and employment services, and special areas, but excluding expenditure on capital account.

[5] Scientific investigation and agricultural research.

[6] After deducting appropriations-in-aid not allocated to other services.

chiefly payment of interest on Irish loans,[1] and £2·5 mn. paid by the Crown in lieu of rates, giving a total of £43·2 mn. The cost of *tax collection* excludes the cost of collecting contributions for social insurance and the Wheat Fund. 1½–2 per cent. of tax receipts was spent on collection by any of the collecting departments.

Government saving consists of £50 mn. saved by the central government,[2] £35 mn. by the extra-budgetary funds,[3] and £6 mn. by local authorities.

vii. Second approximation

To proceed from the first to the second approximation to the consolidated government accounts, the following adjustments were made.

Local authorities paid income tax estimated at £9 mn. in respect of their trading profits.[4] This amount is transferred from Inland Revenue duties to real government income.

The Crown paid in lieu of rates £2·5 mn. to local authorities.[5] This sum has been deducted from both rates and expenses of administration. The government also contributed £3·5 mn. to social insurance (£2·7 mn. for employees in the civil and £0·8 mn. in the military services),[6] which has been deducted from contributions to social insurance on the revenue side and from expenses of administration and defence on the expenditure side. Another £1·0 mn. is paid in specific indirect taxes, almost wholly on account of defence expenditure.[7]

A further adjustment has been made. Tax collection is not a government service but a subsidiary to all other government services. The cost of any government service ought to include the cost of collecting the sum necessary for that service. The cost of tax collection has been allocated in proportion to the cost of government services, with an allowance for expenditure covered by contributions to social insurance and receipts of the Wheat Fund.[8] The cost of financing interest on the national debt (£3·7 mn.) has been deducted from real government income.

Finally, account must be taken of government transactions with

[1] Defaulted by the Eire government.

[2] The balance in Table 2 *plus* capital expenditure included in the table (£18 mn. by the central government and £7 mn. by local authorities out of sums received from the central government) *less* capital receipts in miscellaneous receipts and appropriations-in-aid (£5 mn.).

[3] Of which £27·6 mn. was by the Unemployment Fund.

[4] See p. 93 n., below.

[5] See p. 148, below.

[6] See p. 105, below.

[7] See p. 148, below.

[8] This expenditure already covers the cost of collecting contributions.

residents abroad. It is convenient to regard all taxes paid by residents abroad as real government income and all transfer expenditure going abroad as negative government income.[1] In the second approximation taxes paid directly by and expenditure paid directly to residents abroad are considered.

Residents abroad paid £11·4 mn. in direct taxes (£8·5 mn. income tax, £1·3 mn. death duties, £1·6 mn. N.D.C. and stamp duties).[2] Against this must be set £7·5 mn. relief for double taxation (£7 mn. Dominion, &c., income tax, and £0·5 mn. death duties relief). The cost of such relief is regarded as being paid by British residents to the United Kingdom Exchequer in taxation who then transfer it to governments abroad.[3] The net amount of £4 mn. has been deducted from Inland Revenue duties and added to government income.

Of transfer expenditure £1·3 mn. war pensions were paid to residents abroad and have been deducted from government income.[4]

The consolidated government accounts in the second approximation are shown in Table 4.

TABLE 4. *The consolidated government accounts in 1937 (second approximation)*

(In million £'s)

Revenue		*Expenditure*	
Inland Revenue duties	490·5	Social expenditure	535·8
Customs and Excise, Motor Vehicle duties, Post Office and B.B.C. profit, and Wheat Quota	382 0	Economic expenditure	112·4
		Defence services	240·4
		Other common services	41·8
		Administration	38·5
Rates, &c.	198 1	EXPENDITURE	968·9
Contributions to social insurance	103·5	*Government saving*	91
Taxation	1,174·1		
Government income	−114·6		
REVENUE	1,060	REVENUE	1,060

viii. THIRD APPROXIMATION

Before coming to the third approximation to the consolidated government accounts, revenue and expenditure have been classified as suggested on p. 29. Direct taxes include income tax, surtax,

[1] But taxes paid by British residents to overseas governments or overseas government transfers received by them are ignored. The effect of such taxes and transfers is taken as being given, similarly to the effect of a given distribution of incomes and prices. [2] See p. 93 n., p. 106, and p. 123 respectively.

[3] Both from the point of view of the taxpayer or of the equity of the tax system there is no difference between direct taxes payable at home or abroad.

[4] Interest on the national debt due to residents abroad and estimated at £8 mn. was already deducted from government income.

N.D.C., workers' contributions to social insurance,[1] and stamp duties on cheques and receipts drawn by private persons[2] as falling on income; death duties and stamp duties on the transfer of property[3] as falling on capital. All other taxes are included in indirect taxation, of which, falling on production in general, are employers' contribution to social insurance, rates, taxes on motoring, stamp duties, and part of import duties and the Post Office profit falling on business.[4]

Direct transfers include unemployment insurance and assistance benefits, outdoor public assistance, cash benefits from health insurance, contributory and non-contributory pensions for widows, orphans, and old age, war pensions, and cash payments to students by education authorities. Subsidies include net expenditure on housing, medical benefit from health insurance, school meals, and school medical services.[5] All direct transfers and subsidies are part of social expenditure.

Certain payments from one private person or body to another are of the same nature as taxes or government expenditure though, in the technical sense, they do not pass through the Exchequer.[6] The structure of the sugar duty is such that part of it is not received in taxation but paid directly to growers at home and abroad. On this account £9 mn. has been included in both specific indirect taxes and real government expenditure.[7] Workmen's compensation, though financed by the employers only, is of the same nature as social insurance; on this account £13 mn. has been included in both indirect taxes on production in general and direct transfers.[8] Finally, certain classes of workers were exempt from compulsory insurance because similar insurance was provided by their trade unions; on this account £8 mn. was added to both direct taxation and direct transfers.[9]

It is estimated that £25 mn. indirect taxes on production in general were shifted to residents abroad who, however, benefited to the extent of £5 mn. from road expenditure. Also £12 mn. of indirect taxes on production in general fell on real government expenditure and £3 mn. on government saving.[10] Taxes paid by non-residents (or benefits accruing to them) were added to (or deducted from) government income, and taxes paid by the government cancelled.

Taxation paid out of transfer income consists of indirect taxation

[1] See Ch. VII. [2] See p. 123. [3] See p. 106.
[4] See Ch. XI. [5] See Ch. XIII. [6] See pp. 20–1.
[7] See pp. 145 and 200.
[8] See p. 82 and p. 140. Of the £13 mn., the cost of administration (£2·5 mn.) is included in real expenditure. [9] See pp. 83 and 103.
[10] See p. 181.

only. Assuming that the same proportion of indirect taxes has been paid out of transfer incomes as out of other incomes in the same income groups, it can be estimated that £34 mn. specific and £11 mn. general indirect taxes were paid out of them, including an insignificant amount paid out of subsidies.

The third approximation to the consolidated government accounts is shown in Table 5.

TABLE 5. *The consolidated government accounts in 1937 (third approximation)*

(In million £'s)

Revenue			*Expenditure*	
Direct taxes	545		Direct transfers	237
Indirect taxes:			Subsidies	37
Specific	433		*Transfers*	274
General	141		*Real expenditure*	662
	574		GOVERNMENT EXPENDITURE	936
Taxation	1,119			
Government income	−95		*Government saving*	88
REVENUE	1,024		REVENUE	1,024

48·7 per cent. of the tax revenue came from direct taxes, 38·4 per cent. from specific and 12·9 per cent. from general indirect taxes. 21·4 per cent. of the tax revenue was spent on direct transfers, 3·3 per cent. on subsidies, and 59·0 per cent. on real expenditure, 8·5 per cent. was needed to cover the negative government income, while 7·8 per cent. was saved.

£95 mn. of taxation was spent to cover the negative government income. But it is obvious that taxable capacity, and hence tax revenue, depends (among other things) on the amount of the government income. Part of the £95 mn. taxation to cover the negative government income is consequential upon there being a negative, instead of zero, government income. Had private incomes been equal to the national income, government saving would have increased by less than £95 mn.

Assuming that, in the absence of government income, the size of the national income and the size and distribution of labour incomes remained the same and all investment incomes fell in proportion, each £100 increase in government income would cause a fall of £42·5 in tax revenue.[1] Hence with zero government income tax revenue would have been £40 mn. less and government saving £55 mn. more, given

[1] £34·9 in direct, £5·2 in specific, and £2·5 in general indirect taxation. The estimate is based on marginal rates of taxation payable on investment incomes.

the rates of taxation. Alternatively, rates of taxation could have been reduced by 5·1 per cent. so as to yield £55 mn. less.[1]

ix. The administrative sources of government finance

The second approximation to the consolidated government accounts has been divided according to administrative sources. Revenue is recorded according to the authority receiving it directly from the public and expenditure according to the one issuing it directly to the public. The following division has been obtained:

(In million £'s)

	Taxation	*Income*	*Revenue*	*Expenditure*	*Saving*	*Intra-governmental transfers*
Central government .	851	−134[2]	717	400	50	267
Extra-budgetary funds	105	—	105	183	35	−113
Local authorities .	199	39	238	386	6	−154
TOTAL . . .	1,155	−95	1,060	969	91	—

While the central government raises three-quarters of all taxes, it issues only four-tenths of all expenditure. Certain services are provided exclusively by local authorities and any rise in such expenditure puts an excessive strain on local resources, though it could be financed easily by national taxation. Hence administrative rigidities set certain limits to the amount of incomes which can be redistributed. The greater the proportion of centrally collected taxes (though not necessarily expended centrally) the easier it is to follow any given financial policy.

[1] Since the rate of interest on government loans was 2·5 per cent., each £100 saved by the government increased its future income by £2·5 but decreased taxation by £1·1. The *effective* rate of interest for the government was, therefore, 1·5 per cent.

[2] Interest on the national debt due to the extra-budgetary funds is cancelled.

Gross social expenditure

(In million £'s)

Item	*Central*	*Rate Fund*	*Contributions*	*Total*
1. Education	65·0	57·9	9·5	132·5
2. Health	19·0	51·4	31·1	101·5
3. Lunacy	0·4	12·8	2 7	15·9
4. Unemployment	49·7	0·6	43·0	93·2
5. Public Assistance	1·7	39 2	2·9	43·7
6. Civil Pensions	63·0	0 6	31·0	94·6
7. War Pensions	42·6	—	—	42·6
8. Housing	17·3	4 6	26·7	48·6
9. Miscellaneous	0·4	—	—	0 4
TOTAL	259·0	167·1	146·9	573·0
Cost of finance	4·8	3·1	—	7·9
GRAND TOTAL	263·8	170·2	146·9	580·9

Note. Specific Exchequer grants to local authorities are included in *Central*, bloc grants in *Rate fund* expenditure. *Contributions* include the excess of gross over net expenditure (see Table 3) and contributions to social insurance. (Contributions by the government as employers are included in *Central* or *Rate fund* expenditure.)

Including workmen's compensation and benefits paid by societies, gross expenditure was £602 mn.

The administrative and financial costs of social services

(In million £'s)

	Transfers	*Other benefits*	*Total*
Education	0·1	7 9	8·1
Health	6·2	1·1	7·3
Lunacy	—	0·9	0·9
Unemployment	11 9	—	11·9
Public Assistance	1·8	1·2	2·9
Civil Pensions	3·3	—	3·3
War Pensions	1·9	—	1 9
Housing	0·7	—	0·7
Miscellaneous	—	0·4	0·4
Workmen's	2·5	—	2·5
TOTAL	28·4	11·4	39·9

Detailed tables

(In thousand £'s)

1. Education

Elementary education	
Salaries	50,990
Loan charges	4,960
Administration	3,390
Medical service	2,830
Meals in school	910
Schools for the blind, &c.	2,700
Other expenses	19,260
Less Fees and contributions	−1,720
Net total	83,320
Higher education	
Training of teachers	590
Secondary schools	12,830
Technical schools	7,660
Loan charges	2,160
Administration	1,080
Cash benefits to students	1,960
Other expenses	2,960
Less Fees and other contributions	−4,130
Net total	25,110
Agricultural education	610
Grants other than to local authorities:	
Elementary	70
Higher	2,040
Contribution to teachers' pension	2,120
Cash to aid students	230
Grant to universities[1]	2,980
Central administration	1,490
Approved schools (E. & W.)[2]	750
Museums, Libraries, Art	4,200
TOTAL	122,930

2. Health

Public health	
Sewage	12,620
Refuse	8,450
Hospitals	17,470
Disease	550
Salaries, not incl. above	2,440
Maternity	3,790
Baths	2,180
Parks	6,380
Public conveniences	880
Vaccination	140
Ports	110
Welfare of the blind	1,770
Other expenditure on public health	1,710
Physical training	260
Net total[3]	58,740
Health Insurance	
Medical benefits	11,610
Other benefits	23,100
All benefits	34,710
Administration	6,010
Total	40,710
TOTAL	99,450

[1] Contribution by the public £3·7 mn.

[2] In Scotland included in other education.

3. Lunacy and Mental Deficiency

Mental deficiency	3,360
Mental hospitals	9,840
TOTAL[4]	13,200

4. Unemployment Insurance and Assistance

Unemployment Insurance	
Benefits	42,260
Administration	5,860
Total	48,120
Unemployment Assistance	
Benefits	36,740
Administration	4,680
Total	41,420
Northern Ireland	3,710
TOTAL	93,250

5. Public Assistance

Outdoor relief	23,350
Indoor relief	15,320
Administration	2,160
TOTAL[5]	40,830

[3] Excluding £2·1 mn. contributed by the public.

[4] Excluding £2·7 mn. recovered from the public.

[5] Excluding £2·9 mn. recovered from the public.

6. Civil Pensions

Contributory	
Widows and orphans	24,710
65–70 Pensions	21,270
Administration	1,500
Total	47,480
Non-contributory	
Old age pensions	46,490
Administration	650
Total	47,130
Total	94,610

7. War Pensions

War pensions[1]	39,800
Merchant seamen's pensions	270
Irish Constabulary pensions	1,420
Administration	1,120
Total	42,600

8. Housing and Town Planning

Housing	48,000
Less	
Small dwellings (self balancing)	−2,500
Rents, &c.	−24,200
Central administration	200
Town and Country Planning	350
Total	21,900

9. Miscellaneous Social Expenditure

Administration of Friendly Societies and Charities, Aliens Department (Home Office), Inspection of Factories, Cruelty to Animals, &c.	380

[1] Of this £1,260,000 was payable to residents abroad.

III

THE NATIONAL ACCOUNTS

i. NATIONAL OUTPUT, INCOME, AND EXPENDITURE

THE nature and significance of public finance cannot be gauged by looking at the Government Accounts alone. To grasp their importance, in the whole and in detail, the Government Accounts must be examined in relation to the National Accounts which are compiled and analysed in this chapter.

The national income for the years between the two wars has been estimated by Professor Bowley,[1] but no similarly reliable series of estimates of national expenditure exists.[2] For 1938 both the national income and expenditure have been officially estimated[3] and, with the aid of these and Professor Bowley's figures, the national income and expenditure for 1937 can be compiled.

The official estimates are difficult to analyse because the details published are not adequate and are accompanied only by notes in general terms. An analysis can be made, however, by comparing the figures with Professor Bowley's and other estimates.

National income can be measured in three, largely independent, ways. *Net national income* is measured as the sum of incomes, *net national output* as the sum of net outputs in various industries, and *net national expenditure* as the sum of consumption and saving, by private persons or bodies and the government. The three estimates are based on a number of different sources (the first mainly on income tax, the second on Census of Production statistics, and the third on a variety of data), yet they are not entirely independent.[4]

[1] *Studies in the National Income*, 1942.

[2] Estimates of either the national income or expenditure for 1937, published during or shortly after 1937, are not accurate in view of more thorough estimates made since.

[3] *An Analysis of the Sources of War Finance and an Estimate of the National Income and Expenditure in 1938, 1940 and 1941*, Cmd. 6347, 1942. The estimates are published annually since 1941, but changes, as far as 1938 is concerned, were negligible since the above publication. The definition of the national income in this publication is more in accordance with the one adopted here than the definitions used in 1941 or 1943. Though the sources of information open to the authors are more extensive than those available to private investigators, it should be remembered that, by the very nature of the statistics involved, these are but estimates with usual margins of error.

[4] For instance, the income of private domestic servants must be equal to expenditure on domestic service or to their net output. It should be noted, also, that

These three different measurements of the national income can, alternatively, be conceived as the national income analysed according to three different criteria. National income can be said to consist of small particles labelled according to three different criteria; three labels are attached to each particle, that is, each particle of the national income has three dimensions.[1]

Net national income, expenditure, and output are classifications according to one of the three dimensions, the other two being ignored. Ignoring one dimension only, national income can be presented in a contingency table.[2]

It is possible to add a fourth dimension, classification according to income groups. Contingency tables can be constructed with income groups as the first and any of the other three as the second dimension. The redistribution of incomes can be conceived as being represented by two contingency tables: one between income groups and income, the other between income groups and expenditure. Adding up the contents in the dimension of income or expenditure, a distribution of incomes or expenditure, according to income groups, is obtained. The two distributions are not identical because incomes are spent not only on goods the income recipients buy for themselves, but also on goods bought through the government for the benefit of others.

In the next section net national income, expenditure, and output are discussed and compiled for 1937.

ii. Net national income

The best estimates of the national income, those of Professor Bowley and Colin Clark, are based on the *adding incomes* method.[3] Both estimates cover the period 1924–33 and therefore certain differences can be analysed. Some differences are due, as shown in Appendix A, to a different definition of the national income, some to different estimates of the same item.

The definition of the national income, now generally adopted, does not deduct direct taxes from or add indirect taxes to the total of incomes, but excludes transfer incomes. Government income is differ-

there are certain similarities between Census of Production and income-tax returns and any discrepancy due to incorrect definition or evasion is likely to occur in both.

[1] For example, the amount spent on tobacco out of wages earned in agriculture is one such particle.

[2] C. Clark, op. cit., in Table 55 shows net output transformed into net income. Such a table is fundamental to the understanding of the mechanism on which the equations of national income are based.

[3] Their latest works are: A. L. Bowley, *Studies in the National Income*, 1942, and C. Clark, *National Income and Outlay*, 1937.

ently defined by different authors, and the definition suggested in Ch. II will be used here. The problem of 'writing down' stocks is either ignored or imperfectly tackled, and an approach believed to be correct is suggested in Appendix B. Mr. Clark and the official estimates make an allowance for business losses not deducted from income-tax assessments, but Mr. Clark alone corrects for evasion of assessment.[1]

In differences due to measurement, the difference in the estimates of agricultural incomes is due to the methods of measurement adopted.[2] There is also a fairly large divergence between estimates of the wage-bill for 1938 by Professor Bowley and the official estimate.

Net national income for 1937 can be estimated on the definition used in the White Paper,[3] taking all items from the same sources, but making two corrections. The estimate given in Appendix B for correction in the valuation of stocks has been used, and the wage-bill was taken midway between Professor Bowley's and the official estimate, that is, £50 mn. has been added to Professor Bowley's figure.

In addition, three small alterations have been made in the definition of the national income, each alteration affecting *Profits and Interest.* Income on the invested funds of life insurance companies is deliberately under assessed by the Inland Revenue by allowing certain costs which would not be allowed in other cases.[4] To correct for this £20 mn. has been added.

The surplus of co-operative societies is not assessed for income tax and, therefore, not included in the White Paper's definition of national income. But, on the expenditure side, consumption is valued at retail prices, which is inconsistent. There are two possible ways of bringing about consistency. The legal argument of 'mutual trading' suggests that consumption should be valued at retail prices discounted for the co-operative surplus.[5] Alternatively, the surplus can be treated as the income of shareholders. The latter view has been adopted and £25 mn., the estimated amount of the surplus, added to the national income.

[1] It is thought that in recent years this item has disappeared.

[2] Mr. Clark substituted the output for the 'adding incomes' method.

[3] Cmd. 6347, 1942.

[4] In the usual case income tax is paid on the interest income less expenses; hence the tax expressed as a ratio of the interest income is considerably less than the standard rate of the tax.

[5] Against this argument it can be said that prices in co-operative stores are the same as elsewhere; hence, the rate of profit is different on different commodities, yet dividends are paid at the same rate. Moreover, the surplus includes profit made on sales to non-members.

Finally, the definition of government income given in Ch. II will be used.[1] Since this definition of government income accounts for interest on the national debt, such interest was not elsewhere deducted.

The following table gives the figures:

TABLE 6. *The net national income in 1937*

(In million £'s)

Rent	363	Private incomes[2]	4,451
Profits and interest	1,202		
Salaries	1,066	Government income	−95
Wages	1,725		
Net national income	4,356	Net national income	4,356

Of the net national income rent amounted to 8½ per cent., profits and interest to 27½ per cent., salaries 24½ per cent., and wages 39½ per cent.; that is, rent, profits, and interest came to 36, salaries and wages to 64 per cent. of the national income.

iii. NET NATIONAL EXPENDITURE

Net national expenditure consists of private consumption and saving, and government consumption and saving. Private and government saving are equal to net investment at home and abroad.[3] Since national income is measured at factor cost, indirect taxes must be deducted in so far as the constituents of net national expenditure are valued at market prices. Estimates of consumption and investment are discussed in Appendix C.

Personal expenditure on consumption in 1937 is shown in Table 7, in accordance with the definitions of government expenditure given in Ch. II. Health insurance medical benefits are excluded and included in government expenditure on subsidies. An explanation of the sources and methods by which the figures are derived is given in Appendix C.

Net investment at home and abroad for 1937 is also estimated in Appendix C. Home investment, including expenses connected with investment, has been put at £521 mn. and disinvestment abroad at £56 mn., making total investment £465 mn.

[1] The definition in the final approximation. (See pp. 42–4, above.) On the White Paper's definition government income was the same in 1937 and 1938, that is, £63 mn., or £72 mn. gross of income tax on local government trading profits.

[2] Exclusive of social transfers.

[3] Net investment and net national expenditure exclude expenditure to cover depreciation and maintenance of fixed capital.

TABLE 7. *Private consumption in 1937*

(In million £'s)

Food	1,110
Drink	260
Tobacco	160
1. Food, drink, and tobacco	1,530
Rent, rates, and water charges	420
Coal and coke	104
Gas, electricity, and oil	86
Furniture, household textiles, and hardware	220
Household stores	40
Domestic service	105
2. Rent, rates, fuel, and household goods	975
Women's and girls' wear and dress material	230
Men's and boys' wear	135
Boots and shoes	75
Laundry	20
3. Clothing and laundry	460
Private motoring	115
Other travel	165
4. Travel	280
Books, newspapers, periodicals, and stationery	100
Drugs, perfumery, photographic and optical goods	40
Sports and travel goods	30
Other goods	45
Medicine	55
Entertainment	62
Betting	50
Hotels and restaurants	70
Postal services	40
Hairdressing	17
Undertaking	10
Other services	50
5. Other goods and services	569
Private expenditure on consumption (at market prices)	3,814

Note. The figures include expenditure on consumption by individuals and by non-profit-making bodies. Rent includes the rent of dwellings and of buildings occupied by non-profit-making bodies. Food includes consumption by the Forces. (The definition of consumption in Table 68 has been different on these points.)

Expenditure by the government on consumption, valued at market prices, came to £674 mn. in 1937 and indirect taxes paid by residents in Britain and the government, less subsidies, to £597 mn.[1]

[1] Government consumption, indirect taxes, and subsidies are defined and estimated in Ch. II. See pp. 42–4, above.

Net national expenditure is summarized in Table 8 which can be regarded as the continuation of the figures given in Table 6.

Of £4,733 mn. private incomes 80½ per cent. was spent on consumption (at market prices), 8 per cent. saved, and 11½ per cent. paid in direct taxes; that is, after the payment of direct taxes, 91 per cent. was consumed and 9 per cent. saved.

Private consumption in 1937 was 75 per cent. of the net national expenditure, government consumption 15 per cent., private saving 8 per cent., and government saving 2 per cent. Total consumption was 90 per cent., total investment 10 per cent. of the national expenditure.[1]

Gross national income in 1937 came to £4,810 mn., of which 9½ per cent. was necessary to cover depreciation and maintenance. Gross investment amounted to 19 per cent. of the gross national income.

iv. Net national output

Net national output measures the national income by adding the net output (or value added by production) of all firms and industries. Home-produced output and the output of capital abroad (foreign income) can be distinguished.

No independent estimate of the net national output exists, since censuses were taken in the manufacturing, building, and mining industries only. Moreover, certain deductions have to be made from 'net output', as defined in the Census of Production, to obtain net output as the sum of wages, salaries, profits, interest, and rent earned in an industry.

Colin Clark compiled the net output of various industries for 1911 and 1930 by taking the Census industries and estimating the net output of railways, agriculture, and dwelling houses.[2] But the net output of other industries is obtained as a residue. Professor Bowley has also made rough estimates for 1924 and 1935.[3]

From the Census of Production definition of net output a deduction has to be made for depreciation not allowed for, rates, employers'

[1] But capital accumulation came to less, 8–9 per cent. only, if allowance is made for the cost of transferring the ownership of capital which has been included in expenses connected with investment.

[2] Op. cit., Tables 54 and 55.

[3] Op. cit., pp. 194–5. But the net output of agriculture is inconsistent with figures given elsewhere in the book, the net output of government services is to a large extent duplicated in the net output of industry, and the net output of dwellings seems to include the rent of business premises.

The estimates of Sir Alfred Flux (cf. Bowley, op. cit., pp. 128 et seq.) are based rather on a short-cut expenditure method than on the output method.

TABLE 8. *The net national expenditure in 1937*

(In million £'s)

A		*B*		*C*		*D*		*E*	
Private incomes	4,733	Private consumption	3,814	Private consumption	3,814	Private consumption	3,814	Private consumption	3,247
Government income	−95	Private saving	374	Private saving	374	Government consumption	674	Government consumption	662
Less		Direct taxes	545	Direct taxes	545	Net investment at home	521	*Consumption*	3,909
Transfers	−282	*Private expenditure*	4,733	*Private expenditure*	4,733	Net investment abroad	−56	Private saving	359
		Government income	−95	Government consumption	674	*National expenditure at market prices*	4,953	Government saving	88
		Less		Government saving	91	*Less*		*Saving* (*Investment*)	447
		Transfers	−282	*Less*		Indirect taxes *less* subsidies	−597		
				Taxation	−1,179				
				Add					
				Subsidies	37				
Net national income at factor cost	4,356	Net national expenditure at factor cost	4,356	Net national expenditure at factor cost	4,356	Net national expenditure at factor cost	4,356	Net national expenditure at factor cost	4,356

Note. Transfer incomes, on the definition used here, include social transfers only. The amount shown is before payment of taxes. In *sections B–D* the constituents of national expenditure are given at market prices, in *section E* at factor cost. Direct taxes include taxes paid by British residents, indirect taxes by British residents and the government.

contribution to social insurance, expenditure on advertising, postal and other expenses.

The position of banks and other financial institutions is rather perplexing. Services are rendered by banks to depositors and borrowers alike but, whereas depositors receive services free of charge, borrowers pay in excess of the value of services obtained. The cost of banking services should be deducted from the net output of industry.[1] But the national accounts will still not balance because the value of banking services rendered to private individuals free of charge has not been included in their income. For the sake of simplicity the output of banks has been reduced in accordance with the definition of the national income.

The net output in 1935 of firms employing more than 10 persons in the manufacturing, mining, and building industries has been recorded as £1,625 mn.,[2] and Bowley estimated the net output of small firms as £159 mn.,[3] giving a total of £1,784 mn. Omitting the net output of railway workshops (£36 mn.) and government departments (£21 mn.), which are included below, £1,727 mn. are left. The increase in production between 1935 and 1937 was 14 per cent.,[4] the increase in prices 6 per cent.,[5] and hence the increase in value was 21 per cent., giving a total of £2,090 mn. for 1937.

From this sum £100 mn. has been allowed for depreciation in addition to sums already deducted.[6] Employers' contribution to social insurance and the cost of workmen's compensation (£35 mn.), the cost of advertising, postal and other expenses (£45 mn.) were also deducted. On the other hand, the value of construction work on sewage and drainage performed by local authorities (£8 mn.),[7] the net output of 300,000 independent workers (£40 mn.),[8] and the value of waste products re-worked (£12 mn.)[9] have been added, giving a total of £1,970 mn.

[1] Bank interest (in excess of the costs of banking) is part of the net output of industry.

[2] Census of Production, 1935, *Final Report*. [3] Op. cit., p. 125.

[4] The Board of Trade index, not covering all industries, has shown a rise of 17 per cent. For other industries changes in employment have been taken into account. The increase in the output of small firms was 12 per cent., assuming that the Board of Trade indices for individual industries are valid for small firms

[5] Wage rates have increased by 6 per cent., profits per unit of output by 7 per cent. Since salaries and rents must have fallen per unit of output, the average can be put at 6 per cent.

[6] Cf. C. Clark, op. cit., Table 54.

[7] Not included in the Census of Production.

[8] Cf. C. Clark, op. cit., Table 55.

[9] Cf. Bowley, op. cit., p. 127.

Included in this sum is the net output of coal mining, £130 mn.[1] The net output of laundries, which was not included, can be put at £25 mn.[2] Bowley gives the net output of agriculture as £195 mn.,[3] of fishing as £20 mn.,[4] from which £15 mn. has been deducted for depreciation and other costs, making the net output of agriculture and fishing £200 mn.

The net output of railways is obtained by adding the profits of railway companies (£28 mn.) and wages and salaries (£108 mn.), which give £136 mn.[5] The net output of road transport, on the basis of employment figures[6] and earnings in the industry, can be put at £120 mn. The net output of shipping, docks, and other transport similarly at £90 mn.

The net output of commerce, finance, entertainment, hotel, and other services has been estimated by taking the number employed in these industries in 1931, divided into operatives, managers (including employers), and workers on their own account.[7] The numbers of operatives and managers, classified according to sex, were analysed by Professor Bowley distinguishing wage-earners, salaried persons earning less than £125, and others.[8] The wage-bill and the amount of small salaries paid in each industry has been estimated; the earnings of shop-assistants are shown elsewhere.[9] This estimate has been completed by making an allowance for salaries over £125, the earnings of employers and workers on own account and for rent, and by bringing the figures up to 1937, taking into consideration changes in employment and rates of earnings.[10]

From the net output of banking £20 mn. has been allowed for unpaid services rendered to depositors.[11] The net output of professions includes £50 mn. profits.[12] The net output of private domestic service is estimated as private expenditure on domestic service, excluding employers' contribution to social insurance.[13]

[1] Estimate based on data in the *Report of the Ministry of Mines.*

[2] Recorded in the Census of Production, 1924, as £16 mn. Since then employment and wage rates have increased.

[3] Op. cit., p. 100.

[4] Ibid., p. 127.

[5] The gross output of railways (passenger and freight receipts) was £164 mn.

[6] *The Motor Industry*, 1939, gives 200,000 employed in public service vehicles, 220,000 in public goods transport (that is, excluding transport in own lorries), and 25,000 in taxis.

[7] Census of Population, 1931, *Industry Volumes.*

[8] Op. cit., pp. 70–1. Industrial groups XVII, XIX, XX, XXI, and XXII, excluding teachers and nurses employed by the government and domestic servants.

[9] Bowley, op. cit., p. 78.

[10] Ibid., p. 92, for salary rates.

[11] Cf. p. 56, above.

[12] Cf. p. 62, below.

[13] Cf. p. 249, below.

The rateable value of dwellings can be put at £230–235 mn.,[1] and it can be estimated that net rents came, on the average, to 88 per cent. of the rateable value, that is, £205 mn.

TABLE 9. *The net national output in 1937*

(In million £'s)

1.	Manufacturing, mining (other than coal), and building	1,840
2.	Coal mining	130
3.	Laundries	25
4.	Agriculture and fishing	200
5.	Railways	136
6.	Road transport	120
7.	Shipping, docks, and other transport	90
8.	Commerce	425
9.	Banking, finance, and insurance	110*
10.	Professions	160
11.	Entertainment	55
12.	Hotels, restaurants, pubs, &c.	65
13.	Domestic service	101
14.	Dwelling houses	205
15.	Postal services	63
16.	Direct government services	421
17.	Net income from investments abroad	210
18.	*Home produced net output*	4,146*
19.	*Net national output*	4,356*

* Deducting £20 mn. for banking services rendered free of charge.

TABLE 10. *The net national output in 1937 (Summary)*

	£mn.	Per cent.
Agriculture and fishing	200	4·6
Mining	150	3·4
Manufacturing and building	1,845	42·2
Transport and communications	410	9·4
Commerce	425	9·7
Finance, professions, and personal services*	510	11·6
Dwelling houses	205	4·7
Government services	420	9·6
Income from abroad	210	4·8
NET NATIONAL OUTPUT*	4,375	100·0

* Not making a deduction for banking services rendered free of charge.

The net output of the Post Office is estimated from the *Appropriation Accounts* eliminating engineering output covered by the Census of Production. The amount spent by the government and public bodies on the direct purchase of services is estimated in Table 52. Income from investments abroad is the Board of Trade's estimate.

[1] Based on the estimated amount of rates falling on dwellings, as given on p. 146.

Net national output is shown in Table 9, a summary of which is given in Table 10. The output of primary industries (agriculture, fishing, and mining) is 8 per cent. of the total, of secondary industries (manufacturing and building) 42 per cent., of tertiary industries (transport, distribution and services) 31 per cent., of property (dwellings and investment abroad) 9½ per cent., and of services sold to the government 9½ per cent.

v. Investment and Saving

Total investment, which includes investment at home and abroad, must equal total saving, which includes private and government saving.

Impersonal saving includes the undistributed profits of companies and £20 mn. for the business savings of private firms or individuals. It is necessary to include the correction due to the valuation of stocks causing unintentional saving or dissaving. Impersonal saving and the correction due to the valuation of stocks are called business saving. Personal saving has been obtained as a residue, and is shown in Table 11.

TABLE 11. *Investment and saving in 1937 and 1938*

(In million £'s)

	1937	*1938*		*1937*	*1938*
Investment at home	521	423	Personal saving	284	153
			Impersonal saving	185	170
Investment abroad	−56	−55	Correction for stocks	−95	70
			Private saving†	374	393
			Government saving‡	91	−25
INVESTMENT*	465	368	SAVING	465	368

* Cf. p. 250, below.

† After provision for accrued taxation.

‡ Cf. p. 42, above.

Personal saving consists of a number of constituents which, to some extent, overlap and might include business saving.[1] It is possible to distinguish certain types of saving, attributed to the working and middle classes, which almost entirely exclude business saving.

Working- and middle-class savings have been computed according to various definitions[2] and are shown in Table 12. Personal saving

[1] It is impossible to measure saving by Stock Exchange issues or by changes in bank deposits because of overlapping and saving by business.

[2] Cf. E. A. Radice, *Savings in Great Britain*, ch. vi, and C. Clark, op. cit., Table 86. Both definitions ignore the cost of life insurance. No doubt there is some duplication, for instance, a friendly society may buy savings certificates.

consists of working- and middle-class (institutional) saving and other saving. Obtained as a residue other saving was −£42 mn. in 1937 and −£152 mn. in 1938.[1]

TABLE 12. *Working- and middle-class savings in 1937 and 1938*

(In million £'s)

	1937	*1938*
1. Industrial and provident, and friendly societies, increase in funds	21·0	21·0
2. Industrial assurance, increase in funds	25·6	26·9
3. Ordinary life insurance, increase in funds	41·9	28·0
4. Post Office and Trustee Savings Banks, increase in deposits	50·3	51·8
5. Post Office and Trustee Savings Banks, increase in stocks held for depositors	2·2	1·8
6. National Savings Certificates, increase in amount due and accrued interest	3·2	2·1
7. Building societies, repayment of mortgages	87·1	86·6
8. Building societies, increase in amounts due to shareholders and depositors	51·7	43·2
9. Cost and profits of ordinary life insurance	16·2	17
10. Cost and profits of industrial assurance	27·0	27
TOTAL	326	305
Total (Radice)*	283	261
Total (C. Clark)†	231	218
Working-class saving (Radice)‡	155	154

* Items 1–8.

† Items 1–7.

‡ Items 1 and 2, two-thirds of 4, one-third of 5, 7, and 8, one-quarter of 6. Item 10 has also been included here.

vi. PERSONAL AND IMPERSONAL INCOMES

Non-personal incomes, as assessed for income tax,[2] consist of undistributed profits (before taxation and before off-setting business losses), income on the invested funds of ordinary and industrial life insurance companies, local government trading profits, income of

[1] These figures should be treated with extreme caution. Colin Clark (op. cit., p. 191) maintains that the rich are, on balance, spending from capital, or spending the proceeds of capital appreciation, which is dissaving from the social but not the individual point of view. It is doubtful if this statement is borne out by facts if the correction for stocks, undistributed profits, and institutional savings were accurately estimated, and it must also be remembered that undistributed profits are almost exclusively saving by the rich in a form which avoids surtax.

[2] For the last published figures see Inland Revenue Report, 1919–20; also C. Clark, op. cit., p. 102.

clubs, &c., and income to residents abroad. The following estimates were made for 1937:

	£ mn.
Undistributed profits of companies	240
Income on life funds	50
Local government trading profits	35
Income of clubs, &c.	5
Income to residents abroad	35
Non-personal incomes, assessed for income tax	365

It can be estimated that for 1937 £3,330 mn. were assessed to income tax, of which £2,965 mn. were personal incomes.

Taking into account non-personal incomes not assessed for income tax and omitting income to residents abroad, the following estimate of non-personal incomes has been made:[1]

	£ mn.
Undistributed profits	240
less Business losses	−15
Correction for stocks	−95
Net undistributed profits	130
National Defence Contribution	19
Income of life funds[2]	69
Income of non-profit-making bodies, clubs, &c.	67
Government income	−95
Non-personal incomes	190

Personal incomes amounted, therefore, to £4,166 mn. excluding and £4,448 mn. including transfers.

vii. Incomes from the exertions of labour and from property

The national income in 1937 consisted of £1,565 mn. rent, profit, and interest and £2,791 mn. salaries and wages. Personal rent, profit, and interest was £1,375 mn. or 33 per cent. of personal incomes.

The Inland Revenue distinguish earned and unearned incomes.[3] Personal unearned incomes came to £780 mn.,[4] to which must be added corrections to Schedule A assessments, income from small property and savings certificates and the surplus of co-operative societies, giving as pure personal profits of capital £888 mn. Since salaries and wages are due purely to exertions of labour, mixed income (due partly to labour and partly to capital) came to £487 mn.[5]

Typical examples of mixed incomes are incomes of farmers, small

[1] Before taxation and including interest on the national debt.

[2] Including costs allowed by preferential treatment for income tax.

[3] See p. 85 n., below.

[4] See p. 64, below.

[5] Farming profits (£50 mn.), earned incomes under Schedule D (£410 mn.), and other profits below the income-tax exemption limit (£25–30 mn.).

manufacturing and building firms, professional men and artisans. Of manufacturing, mining, and building profits about £90 mn. was earned income,[1] of which a third was attributable to capital. In retail trade £180 mn. profits were earned, one-fifth due to capital;[2] in other distribution £30 mn., four-fifths due to capital. Professional incomes were £50 mn., of which not more than £3 mn. can be attributed to capital.[3] Of financial and other profits assessed £60 mn. were earned incomes,[4] about half due to capital. Of farming profits (£50 mn.) half was due to capital.[5] Of other profits below the income-tax limit not more than £2 mn. was derived from capital. Of mixed incomes, therefore, £150 mn. was due to capital and £337 mn. to labour.[6]

Incomes due to exertions of labour came, therefore, to £3,128 mn., personal incomes from property to £1,038 mn., incomes from all property (including government property) to £1,228 mn. Incomes from property formed 25 per cent. of all personal incomes (exclusive of transfers) and 28 per cent. of the net national income.

viii. The share of government in the national income

The share of government in the net national income is defined as the ratio of taxation (excluding taxation which arises in consequence of the fact that money received in taxation is spent[7]) to net national income at factor cost. In Table 5 government expenditure, excluding all taxes paid directly or indirectly, has been estimated as £1,024 mn. and taxation as £1,119 mn. Of the latter £40 mn. was consequential upon expenditure to cover the negative income of the government. Net taxation was £1,079 mn. or 24·8 per cent. of the net national income. 15·2 per cent. of the net national income was directly consumed, 2·0 per cent. directly saved by the government, 6·3 per cent. indirectly consumed or saved through transfer incomes, and 1·3 per cent. through the government income being negative.

It can also be said that the proportion of the private to the government sector of the economy was almost exactly 3 to 1.

[1] 25 per cent. of all profits in 'Manufacturing, Productive, and Mining Industries' (Bowley and Stamp, *The National Income*, 1924, p. 51 n.).

[2] Cf. Stamp, *The National Capital*, p. 22.

[3] Cf. ibid.

[4] Bowley and Stamp, loc. cit. (obtained as residue).

[5] Assuming the yield of farmers' capital (as estimated by Stamp, op. cit., p. 17) to be 5 per cent.

[6] The figures are based on calculating the returns on capital had it been invested in joint-stock companies, rather than estimating the returns on the labour of the owners had they had no property.

[7] Taxes paid out of government expenditure, government saving, and the negative income of the government.

IV

THE DISTRIBUTION OF INCOME AND CAPITAL

THE national income has been divided on p. 61 into personal and non-personal incomes. Personal incomes, called *actual incomes*, are assessed for income tax, except incomes below the tax exemption limit. Corrections have to be made, however, for various items regarded as actual income but excluded from the Inland Revenue's definition of income.

Non-personal incomes consist of imputed incomes, that is, incomes which are imputable to persons, and public income which is unallocatable except on the basis of arbitrary assumptions.

In this chapter first the distribution of actual incomes and secondly the distribution of imputed and attributed incomes is obtained, which together give the distribution of the whole national income among producers.

i. THE DISTRIBUTION OF ACTUAL (PERSONAL) INCOMES

The distribution of incomes can best be obtained from income-tax and surtax statistics. For purposes of income tax, however, the incomes of husband and wife are regarded as one and therefore the distribution of incomes according to income recipients is not available. Nor is the distribution according to economic families available,[1] since the incomes of supplementary earners are not included with the incomes of husband and wife.[2] The distribution available refers to *income-tax families*, that is, to the joint income of husband and wife, maintaining husband, wife, children under 16 (or over 16 if continuing education), and persons incapacitated by old age or infirmity.

According to income-tax statistics there were 10,000,000 incomes over £125 in 1937, the total amount of which was £2,965 mn. The distribution of the number and amount of incomes according to ranges of income has been estimated in Appendix D and is shown in Table 13.

The distribution of actual producers' incomes and all producers' incomes was obtained with reference to this distribution. The ranges of income throughout this inquiry refer to incomes assessed to income tax, but the amount of incomes corresponding to these ranges also includes incomes not assessed to tax and imputed incomes.

[1] Economic families are taken as defined in social surveys, that is, persons living together and enjoying a common standard of living.

[2] Supplementary earners usually include unmarried sons and daughters above the school-leaving age living at home.

TABLE 13. *The distribution of incomes assessed for income tax, 1937*

Range of incomes	*Number of incomes*	*Amount of income*	*Earned income*	*Unearned income*	*Proportion unearned*
£		£ *mn.*	£ *mn.*	£ *mn.*	%
125–150	2,370,000	315	298·4	16·6	5·3
150–175	1,960,000	311	291·5	19·5	6·3
175–200	1,450,000	266	248·0	18·0	6·8
200–250	1,570,000	346	319·4	26·6	7·7
250–300	820,000	222	195·9	26·1	11·8
300–400	740,000	250	204·0	46·0	18·4
400–500	328,000	144	106·9	37·1	25·7
500–600	185,000	100	69·0	31·0	31·0
600–800	190,600	129	80·8	48·2	37·4
800–1,000	98,900	87	49·3	37·7	43·4
1,000–1,500	121,200	145	76·7	68·3	47·1
1,500–2,000	55,700	95	46·5	48·5	51·0
2,000–2,500	29,900	67	31·1	35·9	53·6
2,500–3,000	18,900	51	22·1	28·9	56·7
3,000–4,000	21,600	75	30·3	44·7	59·6
4,000–5,000	11,800	52	20·0	32·0	61·5
5,000–6,000	7,100	40	14·9	25·1	62·8
6,000–8,000	8,000	54	19·0	35·0	64·9
8,000–10,000	4,000	36	12·5	23·5	65·4
10,000–15,000	4,600	55	17·3	37·7	68·6
15,000–20,000	1,700	29	8·5	20·5	70·7
20,000–30,000	1,200	29	8·3	20·7	71·5
30,000–50,000	600	24	6·8	17·2	71·7
50,000–100,000	400	24	5·5	18·5	77·0
100,000 and over	100	19	2·3	16·7	88·0
TOTAL .	10,000,000	2,965	2,185	780·0	26·3
125–250	7,350,000	1,238	1,157·3	80·7	6·5
250–500	1,888,000	616	506·8	109·2	17·7
500–1,000	474,500	316	199·1	116·9	37·0
1,000–2,000	176,900	240	123·2	116·8	48·7
2,000–10,000	101,300	375	149·9	225·1	60·0
10,000 and over	8,600	180	48·7	131·3	72·9

The number of incomes shown in Table 13 refers to the number of tax returns and not the number of income recipients. For the sake of comparison the number of incomes under £125 should be given in the same terms, but such an estimate would be misleading because the proportion of incomes of women and young persons is far greater under £125 than in the income-tax area, and these persons usually do not have dependants to be maintained out of the same income. Moreover, the total number of incomes is a very ambiguous concept

since it has to be arbitrarily decided whether recipients of social income should be included or not, and also whether incomes below a certain limit should be included or not.[1]

In Appendix F an attempt has been made to construct a distribution of labour incomes under £250 in order to supplement the distribution above £250 as shown by income-tax statistics. But such an attempt does not yield satisfactory results with the information at present available. The basic data refer to weekly full-time wages from which it is very difficult to derive a distribution of annual earnings because, apart from factors like overtime and short time, the incidence of unemployment and sickness cause a greater spread in annual earnings than the spread of weekly wages and it is almost impossible to make proper allowance for these factors.

Instead of these alternatives, the *number of persons* in each range of incomes has been estimated irrespective of whether they were income recipients or not. For groups in the income-tax area all members of the income-tax family were included, that is, persons on account of whom income-tax allowances were claimed, each counted as one. It was found on p. 90 that the average number of persons in the income-tax family was 2·57 and therefore the number of incomes in each range has been multiplied by this figure. The number of persons with incomes under £125 was obtained as a residue, knowing that the population was 47,300,000 in 1937. The distribution of the number of persons according to income is shown in Table 14.

In addition to incomes assessed for income tax, the distribution of actual producers' income must include interest on saving certificates, the surplus of co-operative societies, and the correction for under-assessments in Schedules A and B. Interest on saving certificates (£18 mn.) was distributed as on p. 266, co-operative surplus (£25 mn.) in proportion to working-class life insurance premiums paid,[2] and the corrections under Schedules A and B (£10 mn.) in proportion to real property owned as given in Table 77.

The amount of income under £125 was obtained as a residue, given the total amount of actual producers' incomes, £4,166 mn. The results obtained are shown in Table 14, and it should be noted that

[1] It is, for instance, difficult to exclude the number of unemployed persons, since most of them were employed for part of the year. Also, if no lower limit of income is taken a great number of persons, for instance, children with a small Post Office Savings balance, must be regarded as income recipients.

[2] An estimate of life insurance premiums paid is shown in Tables 21 and 24. It is taken that the amount of premiums paid by persons with incomes under £250 is equal to premiums for industrial assurance.

the figures include all income which can be regarded as personal income except social transfers.

TABLE 14. *The distribution of actual producers' (personal) incomes in 1937**

Range of incomes	*Number of persons*	*Actual producer's incomes*	*Average income*
£	(Thousands)	£ mn.	£ per head
Under £125	21,800	1,159·0	53
125–150	6,050	320·4	53·5
150–175	5,000	316·5	63
175–200	3,700	271·5	73
200–250	4,000	353·4	88
250–300	2,090	224·7	108
300–400	1,890	253·5	134
400–500	836	145·8	174
500–600	471	101·3	215
600–800	480	130·5	268
800–1,000	252	87·9	349
1,000–1,500	309	146·3	474
1,500–2,000	142	95·9	675
2,000–2,500	76·3	67·5	885
2,500–3,000	48·2	51·4	1,070
3,000–4,000	55·1	75·6	1,370
4,000–5,000	30·1	52·4	1,740
5,000–6,000	18·1	40·3	2,230
6,000–8,000	20·4	54·4	2,670
8,000–10,000	10·2	36·3	3,560
10,000–15,000	11·7	55·4	4,740
15,000–20,000	4·3	29·2	6,800
20,000–30,000	3·1	29·2	9,420
30,000–50,000	1·5	24·2	16,250
50,000–100,000	1·0	24·2	24,200
100,000 and over	0·3	19·2	64,000
TOTAL	47,300	4,166·0	
AVERAGE			88

* Inclusive of interest on the national debt but not transfers.

In this distribution supplementary earners (mostly unmarried sons and daughters) are usually put into a lower group than the chief earner of the family, though they are likely to pool their incomes and have the same standard of living. By this pooling of incomes the standard of living of the persons maintained by the chief earner may rise or fall according as the supplementary earner's income is more or less than the income per head in the income-tax family.[1] This argu-

[1] For instance, a married man with £1,000 has a son earning £200. Average income in the income-tax family is £500, in the economic family, £400. But if

ment explains the small difference between average income for persons in the range under £125 and £125–250, as shown in Table 14.[1]

A summary is given in Table 15, which also shows the relative distribution of the number of persons and the amount of income.

TABLE 15. *The distribution of actual producers' (personal) incomes in 1937 (Summary)*

Range of incomes	*Number of persons*	*Amount of incomes*	*Average income per head*
£	(Thousands)	£ mn.	£
	(1)	(2)	(3)
Under £125	21,800	1,159	53
125–250	18,750	1,262	67
250–500	4,816	624	130
500–1,000	1,209	320	265
1,000–2,000	451	242	535
2,000–10,000	258	378	1,460
10,000 and over	22	181	8,270
TOTAL . .	47,300	4,166	88
Under £250	40,550	2,421	60
Over £250	6,750	1,745	260
	%	%	*Ratio of average to the national average*
	(1)	(2)	(3)
Under £125	46·1	27·8	0·6
125–250	39·6	30·3	0·8
250–500	10·2	15·0	1·5
500–1,000	2·6	7·7	3·0
1,000–2,000	1·0	5·8	5·8
2,000–10,000	0·5	9·1	18
10,000 and over	0·05	4·3	86
TOTAL . .	100·0	100·0	1·0
Under £250	85·7	58·1	0·7
Over £250	14·3	41·9	2·9

One-twentieth of 1 per cent. of the population has disposal over 4 per cent. of the amount of income, one-half of 1 per cent. over 10 per cent., 5 per cent. over 30 per cent., and 10 per cent. over 35 per cent. In other words, one-quarter of the amount of income accrues to 4 per

a married man has an income of £150 and five children, three of whom are at school, while the others have incomes of £80 and £50 respectively, the average in the income-tax family is £30, in the economic family £40.

[1] The reason why average income does not fall within the ranges indicated is that the range refers to the income of the income-tax family and the average to income per person and not income per family.

cent. of the population, one-half to 23 per cent. and three-quarters to 55 per cent.

ii. Comparison of the distributions of income and capital

The distribution of actual (personal) incomes can be compared with the distribution of personal capital, and it will be found that the distribution of capital is even more unequal than the distribution of incomes and, in fact, is the main cause of the inequality of incomes.

The distribution of capital is discussed in Appendix E. It was found that of the total personal capital of £21,000 mn., £20,100 mn. consisted of 8,150,000 estates of £100 or more. Because a great number of estates are owned by women (a higher proportion of estates than of incomes),[1] the number of persons in the family per estate is less than per income-tax return (which was 2·57), and can be put at 1·8.[2] If this is so, then £20,100 mn. is owned by families which contain 15,000,000 persons, that is, 31 per cent. of the population. The cumulative percentage distribution of the numbers and amount of personal incomes and estates is given in Table 16. The two distributions, represented by *Lorenz*-curves, are compared in Figure 1.

Table 16. *The distribution of personal incomes and estates in 1937*

Incomes		*Estates*	
Cumulative number of persons	*Cumulative amount*	*Cumulative number of persons*	*Cumulative amount*
%	%	%	%
0·01	2·3	0·01	9·8
0·05	4·3	0·06	18·3
0·6	13·4	0·5	39·0
1·6	19·2	1·3	54·7
4·2	26·9	2·5	65·8
14·4	41·9	8·4	83·9
30·6	56·9	16·1	90·7
54·0	72·2	31·0	95·8
100·0	100·0	100·0	100·0

It can be seen that one-ten-thousandth of the population possessed 10 per cent. of all private capital and one-half of 1 per cent. possessed 40 per cent. Two-thirds of the amount of private capital were possessed by 2·5 per cent. of the population, while two-thirds of the population possessed only 4 per cent. of private capital.

[1] See p. 114.

[2] The figure may be higher for small estates, but this is balanced by the fact, suggested on p. 259, that the number of small estates may have been somewhat overestimated.

The index of the degree of inequality[1] is 0·70 for the distribution of income and 1·76 for the distribution of capital, thus the inequality of capital is far greater. No doubt some of the inequality of incomes is caused by the inequality of capital, but it is difficult to express this factor in quantitative terms. Assuming that the distribution of labour

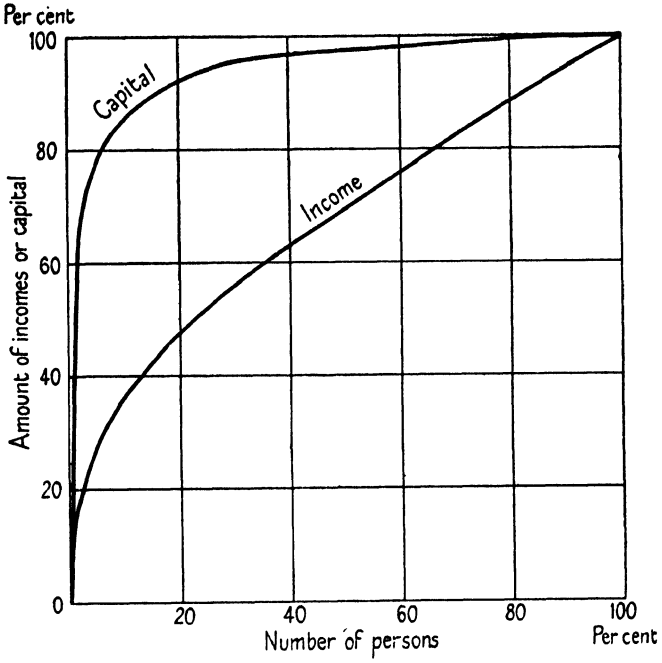


FIG. 1. Distribution of personal incomes and estates, 1937.

incomes is not affected by the distribution of capital (which is not the case), the index of inequality of incomes would fall to 0·5 if there were no incomes from capital and to 0·4 if capital were equally distributed.[2] Taking account of the probable effect of the distribution of capital on the distribution of labour incomes, the fall in the index of inequality would be even greater.

[1] The ratio of twice the area of the segment enclosed by the curve and a diagonal of the square, to the area of half the square. For an equal distribution, represented by a diagonal, the index is 0, for a perfectly unequal distribution, represented by two sides of the square, it is 2.

[2] Lorenz curves, of the type shown in Fig. 1, can be represented by three straight lines. It was assumed that there is a considerable overlapping in the ownership of large estates and incomes, that 3½ per cent. of the population included 3 per cent. of both the largest estate owners and the largest income recipients, and 28 per cent. of the population included 25 per cent. of both.

iii. Imputed incomes

The most important kind of imputed income is undistributed profits. It has been pointed out by Messrs. D. G. Black and R. S. Edwards that the various calculations on the burden of taxation, restricted to actual incomes only, present a fallacious picture.[1] The error introduced is not a random one but has a definite bias. Calculations referring to fully earned incomes are not affected, but the case of investment incomes is as follows.

Of the amount of profits of a company not paid out in dividends but put into general reserves, as much is imputable to each ordinary shareholder as he would receive if all profits were distributed. But whereas income tax and surtax are paid on dividends at an increasing marginal and, therefore, an increasing average rate, undistributed profits are always taxed at the standard rate of income tax. As the average rate of income tax and surtax on a given income is more or less than the standard rate, more or less tax would be paid if profits were wholly distributed.[2] It follows that the taxation falling on higher incomes is always overstated, on lower incomes (though not to a significant extent) understated, and it is desirable that calculations on taxation should take into account undistributed profits.

This line of argument can be developed in two directions. It can be shown that the conclusions of Messrs. Black and Edwards do not exhaust the subject and that the omission of imputed income from calculations on the distribution of taxation causes a greater bias than is realized, and also that the concept of imputed income can be generalized to refer not only to undistributed profits but to all constituents of the national income not included in actual income.

Undistributed profits pay income tax at the standard rate and some indirect taxes on production in general (which fall on investment goods). It can be assumed that undistributed profits are capitalized together with profits paid out and are reflected in share values. Part of the capital taxes (death duties and stamp duties on the transfer of property), therefore, falls on undistributed profits and also part of

[1] 'British Income Tax and Company Reserves', *Review of Economic Studies*, 1937–8. The criticism does not apply to the calculations on p. 99 of *The Burden of British Taxation*.

[2] If the standard rate of the tax is 5*s*. in the £ but the marginal rate of income tax and surtax is 15*s*. in the £ for an individual, of £1 marginal distributed profits he would pay 15*s*. in taxation and would be able to reinvest 5*s*. in the company. If, however, profits are not distributed, he is able to reinvest 15*s*. and pays 5*s*. only in taxation.

N.D.C. Hence the burden of capital taxes is overestimated if related to income paid out only.[1]

Let us consider an individual having £10,000 from dividends on which the rate of taxation, inclusive of death duties,[2] is (say) 60 per cent. If we consider his imputed income also, his total income would be £15,000, but the rate of taxation on it only 50 per cent., since undistributed profits paid tax at the rate of 30 per cent. only. The bias is, therefore, dependent on the relation of the rate of all taxes to the standard rate of income tax, with an allowance for general indirect taxes.

Generalizing the concept of imputed income, business savings should be considered rather than undistributed profits; that is, a deduction should be made for losses not allowed by the Inland Revenue and a correction made for the apparent but not real saving due to the valuation of stocks. When prices are rising business savings are less than undistributed profits, when prices are falling they are more, and correspondingly business savings pay tax at more or less than the standard rate of income tax. Income tax on undistributed profits amounted to £60 mn. in 1937, but should be related not to £240 mn. undistributed profits but to business savings which came to £130 mn. only. This is equivalent to a tax of 9*s.* 3*d.* in the £.

N.D.C. has been deducted from profits assessed for tax and it must be imputed to the same persons whose profits have diminished. For practical purposes N.D.C. and business savings could be treated together, and on this basis £79 mn. tax has been paid on £149 mn. gross business savings, or at the rate of 10*s.* 7*d.* in the £.

Life insurance is always favourably treated by the British income tax. In the first place, income-tax relief is granted on the premiums paid;[3] in the second, income on the invested funds of life companies is taxed at less than the standard rate by giving certain concessions not granted to other business. If an individual saved, the rate of interest at which he was able to accumulate was the gross yield of capital discounted for the marginal rate of income tax and surtax. If the gross yield was 4 per cent. and he paid 15*s.* in the marginal £, his

[1] Assuming that income has been capitalized at yields referring to paid-out profits only, which is the usual case. The yield of ordinary shares was 4·4 per cent. in 1937 and therefore the yield, taking account of undistributed profits, must have been 7½ per cent.

[2] Calculated by the normal method, that is, with rates of capitalization which are too low. For this reason no *additional* death duties are to be taken into account when imputed incomes are considered, though part of the total should properly fall on imputed incomes.

[3] Cf. pp. 86 and 91.

net rate of interest would be 1 per cent. Insurance companies, on the other hand, were able to offer policies which implied a net rate of interest of 2 per cent. in 1937. This rate not only covered costs (which still had to be met by the private investor from the above 1 per cent.) but the life insurance relief made the virtual rate, net of tax, 2¼ per cent. With a gross yield of 4 per cent. the return on life insurance policies was greater than on personal saving for persons with incomes over £2,500, but less for persons with smaller incomes.

The income of ordinary life funds was £49 mn., on which £11 mn. income tax was paid, of industrial life funds £20 mn., on which £1·5 mn. was paid, at the virtual rates of 4*s.* 6*d.* and 1*s.* 6*d.* in the £, respectively.

This income is imputable to holders of life policies in proportion to the yield of the assets and the cumulative amount of premiums paid, with an allowance for costs. The income of societies and clubs is similarly imputable to their members.

The allocation of imputed incomes raises certain statistical difficulties, but it is theoretically clear to whom the income should be imputed. The allocation of public income, on the other hand, raises theoretical difficulties. Several arbitrary alternatives offer themselves. The State can be treated as any other society and its income imputed to the 'members', an equal amount for each. Or, it could be assumed (since public income was negative) that the true income of taxpayers was less by the amount of taxes paid to cover negative government income. Instead of either of these assumptions a third one was adopted, namely, that in the absence of government income total income from capital would be the same,[1] and that the relative distribution of incomes from private capital would also be the same (that is, incomes from private capital would be proportionately less if public income, instead of being negative, was zero).

iv. The distribution of imputed incomes

The total of non-personal incomes was £190 mn., which can be classified in the following way.[2] Business savings, that is undistributed profits before payment of taxation, less losses not allowed for and a correction for the valuation stocks, and N.D.C. amounted to £149 mn. Of this sum £145 mn. can be directly attributed to persons,

[1] See also on p. 44. Since the government's negative income was due to borrowing in war-time, it is reasonable to assume that the amount of the national capital would have been the same had the government covered a larger part of its war expenditure by taxation. On the other hand, private capital would have been less by the amount of extra taxation.

[2] See also p. 61, above.

while £4 mn. accrued to life funds, non-profit-making bodies and the government, on account of their holdings of ordinary shares. The income of life funds, including part of the above £4 mn., was £71 mn., of which £51 mn. accrued to ordinary and £20 mn. to industrial

TABLE 17. *The distribution of producers' income in 1937*

(In million £'s)

Range of incomes	*Imputed income*	*Unadjusted producers' income*	*Earned income*	*Unearned income*	*Public income*	*Total income*
£						
Under £125	16·8	1,176	*1,088*	*88*	−4·2	1,172
125–150	7·8	328·2	*298·4*	*29·8*	−1·4	326·8
150–175	6·6	323·1	*291·6*	*31·5*	−1·5	321·6
175–200	5·8	277·3	*248·0*	*29·3*	−1·4	275·9
200–250	7·8	361·2	*319·4*	*41·8*	−2·0	359·2
250–300	4·9	229·6	*195·9*	*33·7*	−1·6	228·0
300–400	9·1	262·6	*204·0*	*58·6*	−2·8	259·8
400–500	8·3	154·1	*106·9*	*47·2*	−2·2	151·9
500–600	8·0	109·3	*69·0*	*40·3*	−1·9	107·4
600–800	12·8	143·3	*80·8*	*62·5*	−3·0	140·3
800–1,000	10·4	98·3	*49·3*	*49·0*	−2·3	96·0
1,000–1,500	19·9	166·2	*76·7*	*89·5*	−4·3	161·9
1,500–2,000	14·9	110·8	*46·5*	*64·3*	−3·1	107·7
2,000–2,500	11·3	78·8	*31·1*	*47·7*	−2·3	76·5
2,500–3,000	9·1	60·5	*22·1*	*38·4*	−1·8	58·7
3,000–4,000	13·8	89·4	*30·3*	*59·1*	−2·8	86·6
4,000–5,000	9·7	62·1	*20·0*	*42·1*	−2·0	60·1
5,000–6,000	7·6	47·9	*14·9*	*33·0*	−1·6	46·3
6,000–8,000	10·5	64·9	*19·0*	*45·9*	−2·2	62·7
8,000–10,000	7·2	43·5	*12·5*	*31·0*	−1·5	42·0
10,000–15,000	11·8	67·2	*17·3*	*49·9*	−2·4	64·8
15,000–20,000	6·5	35·7	*8·5*	*27·2*	−1·3	34·4
20,000–30,000	6·7	35·9	*8·3*	*27·6*	−1·3	34·6
30,000–50,000	5·7	29·9	*6·8*	*23·1*	−1·1	28·8
50,000–100,000	6·1	30·3	*5·5*	*24·8*	−1·2	29·1
100,000 and over	4·9	24·1	*2·3*	*21·8*	−1·0	23·1
TOTAL .	244	4,410	*3,273*	*1,137*	−54	4,356

companies. The investment income of non-profit-making bodies and clubs was, together with part of the above £4 mn., £69 mn., of which £28 mn. accrued to societies and £41 mn. to public charities.[1] The negative income of the government was £95 mn.

Business savings imputed to persons and N.D.C. (£145 mn.) were distributed in proportion to the value of shares shown in Table 77.

[1] For the distinction of societies and public charities cf. p. 16, above.

It was assumed that shares are distributed between income groups at random, that is, in all income classes the proportion of ordinary shares to the value of all shares, and the proportion of business savings out of earnings of ordinary shares, was the same.

The income of life funds is imputable to policy holders; the income of ordinary funds to persons with incomes over £250, and the income of industrial funds to persons with less than £250. The investment income of societies accrued mainly to working-class societies, such as trade unions, industrial, provident, and friendly societies, and therefore it can be assumed that £22 mn. is imputable to the classes under £250 and £6 mn. to those above that level. A total of £42 mn. was imputed to the classes under £250, and £57 mn. to those over £250 in proportion to life insurance premiums paid.[1]

Public income consists of the income of the government and public charities, giving a negative total of £54 mn. This income was called attributed income, in the sense that an arbitrary assumption has to be made for its allocation. For reasons given above, attributed income was distributed in proportion to investment income, inclusive of imputed investment income.

The allocation of imputed income and public income to income groups is shown in Tables 17 and 18. The tables also show the distribution of unadjusted producers' income (actual and imputed income) and the distribution of total producers' income. Unadjusted producers' income is divided into earned and unearned income.[2]

The inequality of distribution of all producers' income is greater than that of actual producers' income. The chief reason for that is the great inequality of imputed income. Of business savings, amounting to £145 mn., only £3 mn. accrued to the classes under £250.

The proportion of unearned income rises with income. It is 7½ per cent. for incomes under £125 and over 90 per cent. for incomes over £100,000. The average proportion of unearned incomes was 26 per cent. of all incomes, but unearned incomes were two-thirds of all incomes above £1,000.

[1] The income of life funds belongs to policy holders and it can be assumed that the part belonging to each is proportional to premiums paid, account being taken of the nature of the policy, whether it is ordinary or industrial. It is also assumed that the distribution of membership of societies is similar to the distribution of premiums paid, the classes under and over £250 being considered separately.

[2] The whole difference between unadjusted producers' income and personal incomes assessed for tax consists of unearned income. Incomes under £125 on the income-tax definition were £1,148 mn., of which £60 mn. was unearned.

Five per cent. of the national income accrued to one-twentieth of 1 per cent. of the population. 15 per cent. of the national income accrued to the classes paying surtax (over £2,000), or one-half per cent. of the population. The classes with £10 a week or more, forming 4 per cent. of the population, had 29 per cent. of the national income.

TABLE 18. *The distribution of producers' income in 1937 (Summary)*

Range of incomes	*Number of persons*	*Actual income*	*Imputed income*	*Unadjusted producers' income*	*Earned income*	*Unearned income*	*Public income*	*Total*
£	(Thousands)	£ mn.	£ mn.	£ mn.	£ mn.	£ mn.	£ mn.	
Under £125	21,800	1,159	17	1,176	*1,088*	*88*	−4·2	1,172
125–250	18,750	1,262	28	1,290	*1,157*	*132*	−6·3	1,284
250–500	4,816	624	22	646	*507*	*140*	−6·6	640
500–1,000	1,209	320	31	351	*199*	*152*	−7 2	344
1,000–2,000	451	242	35	277	*123*	*154*	−7·4	270
2,000–10,000	258	378	69	447	*150*	*297*	−14·2	433
10,000 and over	22	181	42	223	*49*	*174*	−8·3	215
TOTAL .	47,300	4,166	244	4,410	*3,273*	*1,137*	−54·2	4,356
Under £250	40,550	2,421	45	2,466	*2,245*	*220*	−10·5	2,456
Over £250	6,750	1,745	199	1,944	*1,028*	*917*	−43·7	1,901

Range of incomes	*Number of persons*	*Actual income*	*Unadjusted producers' income*	*Earned income*	*Unearned income*	*Unearned income in all income*	*Total income*	*Cumulative total*
£	%	%	%	%	%	%	%	%
Under £125	46·1	27 8	26·7	33 2	7·7	*7 5*	26 9	100·0
125–250	39 6	30·3	29·2	35 3	11 6	*10·3*	29·5	73·1
250–500	10·2	15 0	14·7	15 5	12·3	*21·6*	14·7	43·6
500–1,000	2 6	7·7	8 0	6·1	13 4	*43 3*	7·9	28·9
1,000–2,000	1 0	5 8	6 3	3·8	13 5	*55·2*	6·2	21·0
2,000–10,000	0 5	9 1	10·1	4 6	26·1	*66·5*	9 9	14·8
10,000 and over	0 05	4·3	5·1	1·5	15·3	*78·2*	4·9	4·9
TOTAL .	100·0	100 0	100·0	100·0	100·0	*25·8*	100 0	—
Under £250	85 7	58 1	55 9	68·5	19·3	*8·9*	56·4	—
Over £250	14 3	41·9	44·1	31·5	80·7	*47·2*	43 6	—

The working classes, that is, the classes under £250, formed 86 per cent. of the population but received only 56 per cent. of the national income.

In Part II an investigation is made into how far the inequality of incomes is mitigated by the interference of the government. In the first place, transfer incomes will be distributed and direct taxes deducted from nominal incomes. Later, available incomes will be revalued at factor cost instead of market prices, that is, an allowance for indirect taxes and subsidies will be made. Finally, government expenditure on goods and services is distributed among the income groups.

PART II

V

SOCIAL TRANSFER EXPENDITURE

i. Social transfer expenditure

In this chapter social transfer expenditure by the government will be distributed between income groups, and in the following chapters payments of direct taxes will be allocated, to arrive at private expenditure on consumption and saving, in the various income groups, valued at market prices.

According to the definition of Pigou government expenditure is transfer expenditure 'when no using up of real resources at the order of the government or of foreigners to whom it makes payments is implied'.[1] In the analysis of government expenditure on pp. 39 and 47–8 it has been found that social transfers, apart from subsidies,[2] included the following items, giving a total of £264 mn.:

	£ *mn.*
Unemployment insurance and assistance	82·3
Public assistance (outdoor relief)	23·4
Civil pensions	92·5
War pensions	40·2
National Health Insurance (cash benefits)	23·1
Education (cash aid to students)	2·2

In addition to direct expenditure by the government, the amount paid for workmen's compensation (£10½ mn.) and benefits paid out by trade unions and other friendly societies (£8 mn.) have been regarded as transfer expenditure. The former is paid in accordance with express legislation and is in all but administrative respects a government transaction; the latter is to a great extent a substitute for government expenditure.[3]

The above items of transfer expenditure are distinguished from other benefits of social expenditure by being, almost exclusively, cash benefits. With the exception of £1·3 mn. war pensions, not included

[1] Op. cit., p. 19. But, as argued on pp. 31–4, above, interest on the national debt is not regarded here as transfer expenditure but as negative government income. Hence all transfer expenditure is part of social expenditure and can be called social transfers.

[2] Social transfers mean direct transfers only. For subsidies see Ch. XIII.

[3] e.g. railwaymen are excepted from unemployment insurance because similar benefits are provided by their own unions.

above, the items enumerated are paid to residents in Britain. The cost of administration and finance of social transfers has been regarded as real government expenditure.[1]

UNEMPLOYMENT BENEFITS

In 1937 the following insurance and assistance benefits were paid out:

	£ '000
Unemployment insurance, Great Britain:	
General Account	33,160
Agricultural Account	455
Transitional Payments	8,645
Unemployment assistance, Great Britain	36,740
Unemployment insurance and assistance, N. Ireland	3,265
TOTAL	82,265

Including transitional payments with assistance benefits[2] and dividing payments in Northern Ireland proportionately between insurance and assistance, a total of £35·0 mn. was paid in insurance and £47·3 mn. in assistance benefits.

Insurance benefits were payable to persons in unemployment who had paid 30 weekly contributions in the 2 years preceding the claim; no benefit was paid during a 'waiting period' of 6 days and claims were exhausted after 26 weeks. The scale of benefits varied with the age and sex of the insured person, with additional benefits for dependants. Allowances by the Assistance Boards were generally payable to persons ineligible for insurance benefits, in most cases persons who had exhausted their rights after 6 months of unemployment. It can be assumed that none of these persons had an earned income in excess of £125.

In 1937 of persons registered as unemployed 49 per cent. received insurance benefits, 40 per cent. allowances, and 11 per cent. no benefits.[3] The average period for which insurance benefits were paid was 2 months and, therefore, the number of claims in any year is six times the average number of claims at any particular time. It can be esti-

[1] See p. 206, below.

[2] During 1937 the Assistance Board took over some of the functions of the Insurance Fund. The amount of transitional payments shown was issued before the appointed day (1 April), after which assistance benefits were substituted for them.

[3] It is difficult to compare the rates of insurance and assistance benefits because of the great local variation in the latter and the lack of information on the subject. It can be observed, however, that there was no significant difference between the average rates.

mated, from the distribution of the number of unemployed according to age and sex, that the distribution of benefits for insured persons was the following:

	£ *mn.*
Boys and girls, 16–17	0·4
Men and women, 18–20	1·6
Adult men	18·2
Adult women	5·2
TOTAL	25·4

Hence £25·4 mn. was received by insured persons on their own account and £9·6 mn. for their dependants. If the numbers of dependent adults and children were the same this amount is consistent with 350,000 adult and 350,000 child dependants; if there were two dependent children to one dependent adult there must have been 280,000 adult and 560,000 child dependants. Most of these were probably dependants of adult men claimants whose own benefit is, therefore, increased by 53 per cent. on account of dependants.

Samples are available showing the distribution of the length of the spell of unemployment for age and sex groups;[1] similar distributions are available for claimants of allowances, hence it is possible to obtain a distribution for claimants of benefits. Benefits will be distributed according to the method described on pp. 282–4.[2] The distribution of benefits and allowances is shown in Table 19.

PUBLIC ASSISTANCE (OUTDOOR RELIEF)

It can be reasonably assumed that the whole amount of benefits was paid to the income group below £125.

CIVIL PENSIONS

The following amounts of civil pensions were paid in 1937:

	£ *'000*
Old age pensions—	
Age 65–70 (contributory)	21,270
Age over 70 (non-contributory)	46,485
TOTAL	67,755
Widows' and orphans' pensions (contributory)	24,710
TOTAL	92,465

[1] See p. 283.

[2] For instance, the total amount of benefits for persons suffering a spell of unemployment lasting 2–3 months has been estimated. The distribution of earnings of these persons was estimated on pp. 282–4, below. Benefits were allocated in proportion to this distribution and an allowance has been made for benefits to dependants.

TABLE 19. *Social transfers*

Range of incomes	*Unemployment benefits and allowances*	*Public assistance*	*Civil pensions*	*War pensions*	*Health benefits*	*Education allowances*	*Workmen's compensation*	*Total*	*Benefits by societies*	*Total*
£	£'000	£'000	£'000	£'000	£'000	£'000	£'000	£'000	£'000	£'000
Under £125	67,540	23,350	86,170	24,785	15,400	270	8,350	*225,865*	5,710	231,575
125–150	5,440	—	2,715	5,145	2,950	190	945	*17,385*	880	18,265
150–175	4,810	—	1,300	4,225	2,280	350	650	*13,615*	680	14,295
175–200	2,370	—	980	2,210	1,280	470	275	*7,585*	380	7,965
200–250	1,940	—	1,300	2,170	1,060	430	260	*7,160*	320	7,480
250–300	150	—	—	750	80	350	20	*1,350*	20	1,370
300–400	20	—	—	930	20	160	—	*1,130*	10	1,140
TOTAL .	82,270	23,350	92,465	40,215	23,070	2,220	10,500	*274,090*	8,000	282,090
£	£ *mn.*	£ *mn.*	£ *mn.*	£ *mn.*	£ *mn.*	£ *mn.*	£ *mn.*	£ *mn.*	£ *mn.*	£ *mn.*
Under £125	67·5	23·4	86·2	24·8	15·4	0·3	8·4	*225·9*	5·7	231·6
125–250	14·6	—	6·3	13·8	7·6	1·4	2·1	*45·7*	2·3	48·0
250–500	0·2	—	—	1·7	0·1	0·5	0·0	*2·5*	0·0	2·5

The distribution of old age pensions was the following:

(In million £'s)

Age	*Men*	*Women*	*All*
65–70	13·3	8·0	21·3
70 and over	19·2	27·2	46·5
TOTAL	32·5	35·2	67·8

These pensions were received by the following numbers of old age pensioners:[1]

Age	*Men*	*Women*	*All*
65–70 ('000)	510	303	813
Per cent.	*66*	*34*	*48·5*
70 and over ('000)	738	1,047	1,785
Per cent.	*77·5*	*78*	*77·5*
TOTAL ('000)	1,248	1,350	2,598
Per cent.	*72*	*60*	*65*

Persons having the right to contributory pensions received 10*s.* per week between the ages 65 and 70 from the Pensions Fund and the same amount after 70 from the Exchequer; persons not having the right to contributory pensions received 10*s.* per week at the age of 70 after passing the means test. On the principle of *least eligibility* marginal cases received partial pensions.[2]

The means test had its full effect up to 1926 while there were no contributory pensions. Hence it is possible to make a rough estimate on the basis of data for 1926 that, even allowing for the joint incomes of man and wife, 85 per cent. of men and 96 per cent. of women pensioners had less than £125 (apart from their pensions). It has also been assumed that all widows' and orphans' pensions were paid to those with less than £125.[3] The distribution of civil pensions obtained is shown in Table 19.

WAR PENSIONS

War pensions issued by the Ministry of Pensions, including Merchant Seamen's and Irish Constabulary Pensions, amounted to £41·5 mn., of which £1,260,000 is stated to have been paid to pen-

[1] Percentages (shown in *italics*) refer to old age pensioners as proportion of all persons in a given group.

[2] There were 29,000 pensions at reduced rates, varying from 1*s.* to 9*s.*, as compared to 1¾ millions full pensions.

[3] 603,000 widows received contributory, 219,000 non-contributory pensions. 292,000 children received contributory and 12,000 non-contributory pensions. Contributory widows' and orphans' pensions cost £18,810,000, non-contributory £6,005,000.

sioners abroad and, therefore, £40,215,000 can be regarded as transfer. In March 1937 the following were in receipt of war pensions:

	Thousands		*Thousands*
Officers	22	Men	420
Widows	8	Widows	120
Adult dependants	4	Adult dependants	220
Children	1	Wives and children	136
Nurses	1	TOTAL	932

Officers' and nurses' pensions came to £4·2 mn., men's to £34·9 mn., medical treatment and miscellaneous costs to £1·1 mn.[1] It was assumed that all widows receiving pensions had an income, excluding the pension, of less than £125. Other pensions have been distributed in proportion to the earnings of adults,[2] men being treated as wage-earners and officers as salaried employees, with some allowance for the possible greater proportion of unoccupied and unemployed among pensioners than among the population in general. The results obtained are shown in Table 19.

NATIONAL HEALTH INSURANCE (CASH BENEFITS)

Insured persons receive sickness benefit for a period of 26 weeks, after which this is replaced by disablement benefit, usually at half the rate of the former. Benefit rates are different for men and women and are also dependent on the period of insurance. In 1937 the following amounts were paid out in England and Wales:

(In thousand £'s)

	Men		*Women*
Sickness benefit	6,572	Spinsters	2,097
		Married	1,080
Disablement benefit	3,533	Spinsters	1,278
		Married	552
Maternity benefit	1,034	Spinsters	24
		Married	348
Other benefit (mainly dental) (*men and women*)			2,467

It was assumed that disablement benefit paid to men and spinsters accrued to persons with less than £125 since they were ill for at least

[1] War pensions were one of the few items of government expenditure in which a diminishing trend was noticeable between the two wars, due partly to natural causes, partly to the payment of lump sums after the last war. These lump-sum payments ought to have been regarded as capital expenditure. In 1924 £71 mn. was paid in pensions, in 1937 the charge was diminishing by an annual £1 mn.

[2] See p. 283.

6 months and the same assumption was made for maternity benefit paid to spinsters. It was also assumed that all benefits to married women were distributed according to the distribution of adult men's earnings; 'other benefits' were divided in the proportion of 2 to 1 between men and women and allocated according to the earnings of adult men and women. Sickness benefits for men and spinsters were distributed according to their earnings but allowing for loss in earnings because of illness.[1] The whole distribution is shown in Table 19.

EDUCATION (CASH AID TO STUDENTS)

In 1937 £2·2 mn. was paid in cash to students mainly in secondary schools. Typical scales of maintenance allowances are published,[2] and it is also possible to find the occupational distribution of parents of children in free and reduced fee places in secondary schools[3] and from this the income distribution of parents. On this basis the above sum has been allocated assuming that no grants were issued to pupils whose parents had an income of more than £400.

WORKMEN'S COMPENSATION

Workmen's compensation is not actually one of the State social services in the strict sense but is so in practice from both the employers' and workers' point of view. In 1937 all manual workers and non-manual workers with incomes up to £350 were covered, but the statistics published by the Home Office deal with seven industrial groups only where little more than half of the total amount of compensation was paid. The total cost to industry is estimated as £13 mn., of which £2–3 mn. was the cost of administration.[4]

The amount of lump sum compensation and weekly compensation running for a considerable time and implying a permanent or temporary loss of earnings has been estimated; this part can be safely attributed to persons with less than £125. Compensation for shorter periods was allocated in the same way as unemployment and health benefits, allowing for some loss in earnings.

[1] Similarly to the allowance for unemployment above. It is implicitly assumed that there is no correlation between sickness and full-time earnings.

[2] e.g. L.C.C. scales published in P.E.P. *Report on Social Services*, p. 65.

[3] L. Hogben, *Political Arithmetic*, p. 386 and p. 420.

[4] An admirable treatment of workmen's compensation is to be found in Wilson and Levy, *Workmen's Compensation*. The data are from this work or the *Statistical Abstract*.

BENEFITS PAID BY SOCIETIES

Benefits, similar to those paid by the State, are provided for their members by trade unions and other friendly societies. In 1937, apart from unemployment benefit administered on behalf of the Fund, dispute benefits, political benefits, and benefits paid at death (which are more like life insurance), these societies paid £0·5 mn. unemployment, £6·4 mn. sickness, and £1·1 mn. superannuation benefits, a total of £8·0 mn. These amounts were allocated in proportion to the distributions of unemployment and health benefits, and civil pensions as shown in Table 19.

According to Table 19 less than 1 per cent. of social transfers was paid to those with more than £250 per annum, almost all being pensioned officers or parents of secondary school pupils.

ii. Digression on interest on the national debt

Though interest on the national debt has not, in this inquiry, been regarded as transfer expenditure[1] it would be interesting to examine its distribution.[2] Of £221 mn. interest issued, or accrued on saving certificates, £8 mn. was due to residents abroad and £16 mn. to the various government departments.[3] Of the remaining £197 mn. a great part was paid to individual bondholders. Interest on this account, as can be estimated from estate duty statistics and the average yield of bonds, came to £98 mn.[4] It can also be estimated that £29 mn. has been included in the income of life funds and non-profit-making bodies.[5] The remaining £70 mn. is attributable to holdings by companies, including banks and financial institutions. It has been estimated that banks and financial institutions received £28 mn. and other companies (among whom the railways and co-operative societies are known to be large holders) the residual £42 mn.[6]

It is possible to allocate interest received on bonds in personal ownership in proportion to holdings of such bonds,[7] interest included in the income of life funds and non-profit-making bodies in propor-

[1] See Ch. II, p. 34.

[2] If interest paid to residents in Britain is regarded as transfer and the calculations are adjusted, government income should be correspondingly increased. It should be noticed, however, that though the initial distribution of incomes is affected, the distribution of private incomes, inclusive of transfers, is not.

[3] See Ch. II, p. 42.

[4] See App. E, Table 74.

[5] See Ch. III, p. 61.

[6] A distribution of the face values of bonds was estimated, for the early twenties, by Sir W. Layton. (*Colwyn Report*, § 263.)

[7] See Table 77.

tion to such incomes,[1] and interest paid to firms in proportion to holdings of shares.[2] The results are shown in Table 20.[3,4]

TABLE 20. *Interest on the national debt*

Range of incomes	*Interest*		
	Personal	*Other*	*Total*
£	£ *mn.*	£ *mn.*	£ *mn.*
Under £125	3·7	4·2	7·9
125–250	10·2	7·2	17·4
250–500	16·4	5·8	22·2
500–1,000	14·8	10·6	25·4
1,000–2,000	13·2	13·2	26·4
2,000–10,000	24·8	28·4	53·2
10,000 and over	15·0	19·1	34·1
TOTAL . .	98·1	88·5	186·6
Under £250	13·9	11·4	25·3
Over £250	84·2	77·1	161·3

Fourteen per cent. of the interest on privately held bonds and 16 per cent. of all interest to British residents accrued to persons with less than £250. Interest as proportion of incomes assessed to income tax was less than 1 per cent. for incomes under £300, rising to 10 per cent. at about £1,500 and 24 per cent. for incomes over £100,000.

[1] See Table 17.

[2] See Table 77.

[3] £11 mn. interest to public charities has been omitted.

[4] This refers to the allocation of interest to actual or imputed bondholders, that is, persons who in the event of the government repudiating its debt would be worse off. But if interest were regarded as transfer one should inquire whose incomes would be less if the national debt had never existed, a question not answered by this calculation.

VI

INCOME TAX AND SURTAX

INCOME tax and surtax are the most important of the direct taxes, and the main characteristics of the former have not changed since the days of Pitt. Income tax is assessed under five schedules. The *standard rate* is announced each year, but in practice the standard rate is applicable to non-personal incomes only, while on personal incomes the *effective rate*[1] is made progressive by the operation of various allowances and reliefs. To this structure was added, before 1914, the super-tax, later known as the surtax, its primary aim being to continue the graduation of income tax in the higher income groups, where the usual methods of allowances and reliefs would not achieve any significant degree of progressiveness. From the economic as well as from the taxpayers' point of view income tax and surtax are a single tax, though for administrative purposes they are treated separately.

In this chapter income tax and surtax on personal incomes will be discussed first and income tax on non-personal incomes later.

i. INCOME TAX ON PERSONAL INCOMES

The incomes shown in the distribution on p. 64 are in administrative practice called *actual incomes* and are obtained by allowing certain reductions and deductions from gross income.[2]

In the case of *earned incomes*[3] one-fifth of earned income is deducted as *earned income allowance*[4] up to a maximum allowance of £300.

[1] Effective rate is the average rate of tax per £ of income. Standard rate is the marginal rate of tax applicable to that part of the income which is above the portion exempted or charged at reduced rates.

[2] The administrative terminology and practice described here refers to 1937. The rates of allowances and reliefs given are also for 1937.

[3] Income tax is assessed under Schedule A for income from property, Schedule B for farming profits, Schedule C for interest on government securities where tax is deducted at source, Schedule D for profits and other interest, and Schedule E (divided into two parts) for salaries and wages. Unearned incomes include incomes assessed under Schedules A and C, while earned incomes are assessed under Schedules B and E. Schedule D assessments are divided into six categories. Of these, *Railway profits*, *Interest on Dominion securities*, and *Interest on war securities and other interest* are all unearned, while profits in *Manufacture, mining, and other productive industries*, in *Distribution other than railways*, and in *Finance, professions, and other profits* are earned and unearned according to whether they are made by individuals and private firms or by joint-stock companies.

[4] Elderly persons with incomes under £500 receive age allowance on all income similarly to and on the same scale as earned income allowance.

The remaining part of *actual income* is called *assessable income*. From the latter various *personal allowances* are deducted to arrive at *taxable income*.[1]

Of taxable incomes the first £135 were charged at the reduced rate (1*s*. 8*d*. in the £) and the rest at the full rate (5*s*. in the £). Graduation is brought about by increasing marginal rates of tax. There is no tax on the first part of the income (the sum of the various allowances), tax is at reduced rate on the next part (£135), and at the full rate on the remainder. Surtax can be regarded as the direct continuation of this scheme; there is a rate higher than the standard rate on the excess of income over £2,000, a still higher rate on the excess over £2,500, and so on. Increasing marginal rate causes the average rate of the tax to increase and, though the marginal rate is constant within limits, the average rate is always higher the greater the income.

On *tax payable* relief was granted for certain life insurance premiums paid on the life of the taxpayer or his wife.[2] Relief was also granted for income from overseas, on account of income tax paid in the British Empire, in order to avoid double taxation. Since from the point of view of the taxpayer it is a matter of indifference whether he pays income tax to the United Kingdom or other exchequers, Dominion income tax relief will be neglected here.[3]

The figures of incomes and allowances, given on the opposite page, refer to the calendar year 1937.

The number of incomes above the exemption limit was 10,000,000, of which 6,100,000 were entirely relieved by the operation of allowances, while 3,900,000 paid tax.

For the calculation of the amount of income tax payable in each income group the number of incomes of each type of family in each

[1] In 1937 personal allowances were £180 for a married couple, £100 for other persons, £60 for each child under 16 or over 16 if continuing education, £50 for widower's housekeeper looking after children, £25 for dependent relatives incapacitated by old age or infirmity. In addition nine-tenths of wives' earned income was allowed up to a maximum allowance of £45. (It should be noted that the incomes of husband and wife are added to determine the amount of tax payable, though tax on the two incomes can be paid separately.)

[2] Relief was given at the rate of 2*s*. 6*d*. in the £, but premiums were not to exceed one-sixth of the taxpayer's income or 7 per cent. of the capital sum insured. For incomes where the marginal rate of tax was 1*s*. 8*d*., rebate was given at that rate but the amount of rebate could not exceed the tax payable. For incomes just exceeding the limit where the standard rate begins to operate, 2*s*. 6*d*. was allowed on part of the premiums equal to the excess of income over that limit; on the rest relief was at the rate of 1*s*. 8*d*.

[3] It is assumed that all taxation is paid to the United Kingdom Exchequer who then give a 'bloc grant' to the Dominions.

group should be known. Since no data are available, certain assumptions had to be made in order to estimate the distribution of the various allowances and of the amount charged at the reduced rate.[1]

(In million £'s)

ACTUAL INCOME (personal incomes)		2,965
Earned income (including age) allowance		413
ASSESSABLE INCOME		2,552
Personal allowances:		
Married persons	1,041	
Other persons	290	
Wives' earned income	7	
Housekeepers	7	
Children	89	
Dependent relatives	11	1,445
TAXABLE INCOME		1,107
At reduced rate	287	
At full rate	820	
Tax chargeable		228·8
Life insurance relief		8·3
Dominion income tax relief		7

The amount of earned income and age allowance was £413 mn. while £120 mn.[2] was not eligible for allowance owing to the maximum limit of £300 which was reached with a fully earned income of £1,500. Hence up to £1,500 the calculation of earned income allowances is straightforward; it amounts to one-fifth of the earned income in each group. For incomes over £1,500 the amount of allowances must lie within two limits, the upper limit being one-fifth of the earned income in the group, the lower limit being the product of the number of incomes in the group, the proportion of the amount of earned incomes in the group and £300. The upper limit assumes that earned income is so diffused that not more than £1,500 accrues to any taxpayer; the lower limit assumes that no single taxpayer has both earned and unearned income. It was assumed that the amount of allowances moves from the upper to the lower limit as incomes increase.[3] The figures obtained are shown in Table 21.[4]

For the calculation of personal allowances it was assumed that only seven types of income-tax families exist, that is one-person families,

[1] The distribution of allowances and reliefs for broad income groups was last published for 1919–20.

[2] Obtained with reference to the estimated distribution of earned income.

[3] The assumption of the upper limit becomes untenable at about £4,000. The assumption chosen hardly affects the figures for the higher income groups.

[4] The correct amount of allowances, £413 mn., was obtained and also the amount not eligible for relief, £120 mn.

TABLE 21. *Income tax on personal incomes and surtax*

Range of incomes (1)	*Actual incomes (personal)* (2)	*Earned income allowances* (3)	*Assessable incomes (personal)* (4)	*Personal allowances* (5)	*Taxable incomes (personal)*			*Income tax chargeable (personal)* (9)	*Life insurance premiums* (10)	*Life insurance relief* (11)	*Income tax liability (personal)** (12)	*Income tax and surtax liability (personal)†* (13)
					Total (6)	*Charged at reduced rate* (7)	*Charged at full rate* (8)					
£	£ mn.	£ mn.	£ mn.	£ mn.	£ mn.	£ mn.	£ mn.	£'000	£ mn.	£'000	£'000	£'000
125–150	315	59·7	255 3	250 9	4·4	4·4	—	370	12·6	47	320	320
150–175	311	58·3	252 7	238·9	13·8	13·8	—	1,150	10 4	39	1,110	1,110
175–200	266	49 6	216 4	198·1	18·3	18·3	—	1,525	8 9	50	1,475	1,475
200–250	346	63·9	282·1	246·5	35·6	32 0	3·6	3,570	11·5	238	3,330	3,330
250–300	222	39·2	182 8	145·5	37·3	32 3	5·0	3,940	5·6	259	3,680	3,680
300–400	250	40·8	209·2	143·1	66·1	51·2	14·9	7,990	9·5	656	7,330	7,330
400–500	144	21·4	122·6	66·3	56 3	35 3	21 0	8,190	7·3	649	7,540	7,540
500–600	100	13·8	86·2	37·9	48·3	23 1	25·2	8,225	6·3	604	7,620	7,620
600–800	129	16·2	112·8	39·1	73 7	24 8	48·9	14,290	8·2	806	13,480	13,480
800–1,000	87	9·9	77·1	20·3	56 8	13·4	43 4	11,970	5·6	555	11,415	11,415
1,000–1,500	145	15·3	129·7	24·9	104 8	16 4	88·4	23,470	10·1	991	22,480	22,480
1,500–2,000	95	8·7	86·3	11·4	74·9	7·5	67 4	17,475	7 1	700	16,775	16,775
2,000–2,500	67	5 2	61 8	6 2	55 6	4 0	51·6	13,230	5·1	503	12,730	13,130
2,500–3,000	51	3·4	47 6	3 9	43 7	2·6	41·1	10,490	3·9	383	10,110	10,890
3,000–4,000	75	3·6	71 4	4 5	67 0	2 9	64·1	16,270	4 7	469	15,800	18,260
4,000–5,000	52	1·3	50·7	2·4	48 3	1 6	46·7	11,810	2·8	280	11,530	14,330
5,000–6,000	40	0 8	39·2	1 5	37 7	1 0	36·7	9,260	1 8	180	9,080	12,340
6,000–8,000	54	0·8	53·2	1 6	51 6	1·1	50·5	12,720	2 3	224	12,500	18,055
8,000–10,000	36	0 4	35 6	0 8	34 8	0 5	34 3	8,620	1·5	146	8,470	13,450
10,000–15,000	55	0·4	54·6	0 9	53 7	0 6	53 1	13,325	2·1	202	13,125	22,835
15,000–20,000	29	0·1	28 9	0 4	28 5	0 2	28·3	7,090	1·0	101	6,990	13,320
20,000–30,000	29	0·1	28·9	0 2	28 7	0 2	28 5	7,140	1 0	95	7,045	14,450
30,000–50,000	24	0·1	23 9	0·1	23 8	0 1	23 7	5,930	0·6	59	5,870	13,135
50,000–100,000	24	0·0	24·0	0 1	23·9	0 1	23 8	5,960	0 6	56	5,900	13,940
100,000 and over	19	0·0	19·0	0 0	19 0	0·0	19·0	4,750	0·3	31	4,720	12,090
TOTAL . .	2,965	413·0	2,552 0	1,445 5	1,106 6	287 4	819·2	228,760	130·8	8,323	220,425	286,780

* Not allowing for Dominion income tax relief.

† For surtax see Table 22.

married couples with no children, with one, two, three, four or five children. For each income group the amount of personal allowances was calculated assuming that all families are of the same type and that incomes are either all earned or all unearned; there were thus 14 alternatives.[1] Next, figures for earned and unearned incomes were averaged, reducing the number of alternatives to 7.[2]

The correct amount of allowances for married persons can be obtained by assuming that such persons form 70·8 per cent. of all taxpayers; the allowance for other persons is obtained by assuming that they are 29·0 per cent. of all taxpayers.[3] Hence it can be safely assumed that the ratio of married to other persons was the same in each income group.[4,5]

For the distribution of families according to the number of children data were extracted from social surveys.[6] The number of housekeepers looking after children can be put at 200,000, assuming that they are evenly distributed in all income groups.[7] If each housekeeper looks after two children on the average, children's allowances on this account would come to £6 mn., leaving £83 mn. for children's allowances given to married persons. This sum is obtained if there were 1,930,000 families with one child, 1,050,000 with two, 440,000 with three, 260,000 with four, and 90,000 with five children.[8]

[1] e.g. for a married couple with one child personal allowance was £300. Hence assuming this family type and unearned incomes, personal allowance was equal to actual incomes up to an income level of £300 and equal to £300 times the number of incomes above that level.

[2] It was assumed that the ratio of earned to unearned income within any income group is the same for all family types.

[3] Percentages obtained by taking ratio of actual allowances to amount obtained by assuming that all taxpayers belonged to a certain family type.

[4] The total of the two figures is 99·8 per cent. It would be 100·0 per cent. if the assumption were perfect.

[5] It can be extracted from App. XVIII to the Colwyn Report that in the richer (and also older) groups the proportion of widowers is higher than in the lower groups, and the proportion of married persons less. This tendency is also confirmed by calculations based on the distribution of wives' allowances published in the Inland Revenue Report for 1919–20. None of these sources deals with incomes sufficiently low to cover the complete income-tax area in 1937.

[6] H. Tout, *The Standard of Living in Bristol*, and B. S. Rowntree, *Poverty and Progress* (p. 171), give distributions which agree very closely. While in income-tax statistics the proportion of childless 'families' is different from the one in social surveys, the interrelation of the proportions of families with children is likely to be the same. The data are for children under 14, but the interrelations of the proportions needed here are about the same, as confirmed by the *New Survey of London Life and Labour* (vol. vi, p. 39).

[7] In this way the correct total of allowances is obtained.

[8] These figures bear the same ratios to each other as the relevant figures in the social surveys quoted.

Hence the following proportions of income-tax families were obtained·

	Per cent.
Persons not married	29·0[1]
Married persons with no children[2]	33·3
,, ,, ,, one child	19·3
,, ,, ,, two children	10·5
,, ,, ,, three ,,	4·4
,, ,, ,, four ,,	2·6
,, ,, ,, five or more children	0·9
TOTAL	100·0

These figures imply 17,100,000 adults in the income-tax area (some of whom employ 200,000 housekeepers to look after children), and 7,300,000 children under 16, or over 16 if continuing education. The number of married couples was 7,100,000.

It was further assumed that dependent relatives were distributed proportionately to the number of incomes on the one hand and the types of families on the other. The correct allowance is obtained if the number of dependent relatives was 1,080,000. This makes the total number of persons on account of whom personal allowances were claimed 25,700,000, or more than half of the population.

A similar assumption was made about married women having an earned income. Their number was estimated as 600,000.[3]

In 1937 the number of married couples was about 10,000,000. Of these 71 per cent. were assessed for income tax; this is probably the best index of the extent of the income-tax area. The number of children was 11,000,000, of whom 65 per cent. were in the income-tax area. This is consistent with the known fact that the number of children in poor families is above the average. The number of widowers was about 800,000, of whom 200,000 claimed housekeepers' allowance. The number of persons over 65 was 3,900,000, of whom 1,100,000 were maintained in the income-tax area. It is found that the number of persons per income-tax family was 2·57.[4]

The distribution of personal allowances is shown in Table 21. The amount of income charged at the reduced rate was distributed on similar lines to those followed for the distribution of personal allowances and the results are shown in the same table. The assumptions

[1] Including 2 per cent. with housekeepers.

[2] 'Children' as defined for income-tax purposes.

[3] C. Clark, op. cit., p. 289, puts the number of married women earning, including those below the exemption limit, at 800,000.

[4] The number of persons per household in the Ministry of Labour budgets, 1937–8, was 3·77.

made as to the distribution of families according to type can hardly affect the results except, to some extent, in the middle-class ranges. The amount of income tax chargeable is also shown in Table 21.

From income tax chargeable, life insurance relief can be deducted by a tentative method.[1] Taking into consideration that some incomes pay no tax, some pay at a reduced rate and some at the full rate, the average rate of relief for each group has been estimated. In 1937 ordinary life companies received in premiums £87 mn., industrial companies £56 mn., and collecting societies £15 mn. It can be assumed that persons with incomes under £250 paid £71 mn. and persons with incomes over £250 paid £87 mn.[2,3]

The information relating to life insurance premiums paid in different income groups is very scanty. For the financial years 1916–17 to 1919–20 premiums allowed for purposes of relief can be estimated for certain income groups from official returns. The average amount of premiums paid by each taxpayer with an income of £1,000 or more can also be estimated for 1918–19 and 1919–20. Alternatively, the value of life policies left at death can be estimated from estate-duty statistics.[4]

For the higher income groups the figures obtained from estate-duty statistics can be accepted, for middle-class incomes the 1919–20 figures were increased in accordance with the increase in premiums paid, and for the working-classes information can be found in social surveys.[5] It was taken into account that no relief could be claimed on about 45 per cent. of industrial policies.[6]

The estimates are shown in Table 21.

[1] It is necessary to pay attention to life insurance relief because its total effect, and particularly its effect on certain income groups, is greater than that of many minor taxes.

[2] B. S. Rowntree, op. cit., p. 201, quotes expert opinion stating that life policies held by people with incomes under £250 balance ordinary policies held by people with incomes over £250.

[3] 3 per cent. of incomes under £250 and 5 per cent. of incomes over £250.

[4] In the same way as the value of shares or government bonds shown in Table 77. The total value of policies estimated by this method is considerably less than the actual total. The reason can be that there was an enormous increase in life insurance, and estate-duty statistics are representative of the situation 10 to 15 years ago rather than that of the year to which they refer.

[5] Cf. G. C. M. McGonigle and J. Kirby, *Poverty and Public Health*, 1936, pp. 222–4. The figures given there show premiums to be a falling proportion of income. It was stated by Sir J. Burns that 9*d.* of every £ of wages goes into industrial assurance. According to Rowntree the poorest families spent 6 per cent. of their income on life insurance (York, 1936), and in some cases 20 per cent. For an extensive discussion cf. Sir A. Wilson and H. Levy, *Industrial Assurance*.

[6] Because policy was not on own or wife's life.

ii. Surtax

The average and marginal rates of surtax as percentage of income have been calculated from statutory rates and are shown in Table 22. Surtax liability in each income group is also shown in Table 22.[1] This table shows surtax as a percentage of incomes assessed and the relative and cumulative percentage distributions.

Table 22. *Surtax*

Range of incomes (1)	*Marginal rate of surtax* (2)	*Average rate of surtax** (3)	*Surtax liability* (4)	*Relative distribution*		*Surtax as percentage of assessed income* (7)
				Graded (5)	*Cumulative* (6)	
£	%	%	£'000	%	%	%
2,000–2,500	5·5	—	400	0 6	100·0	0·6
2,500–3,000	6·9	1·1	780	1·2	99·4	1·5
3,000–4,000	11·0	2·1	2,460	3·7	98·2	3·3
4,000–5,000	16·5	4·3	2,800	4·2	94·5	5 4
5,000–6,000	19·3	6·7	3,260	4·9	90·3	8·2
6,000–8,000	22·0	8·8	5,555	8·3	85·4	10·3
8,000–10,000	27·5	12·1	4,980	7·5	76·7	13·8
10,000–15,000	30·3	15·2	9,710	14·6	69·5	17·7
15,000–20,000	33·0	20·3	6,330	9·5	54·8	21·8
20,000–30,000	35·8	23·4	7,410	11·2	45·3	25·5
30,000–50,000	38·5	27·5	7,260	11·0	34·1	30·3
50,000–100,000	41·3	31·9	8,030	12·1	23·2	33·5
100,000 and over	41·3	36 6	7,370	11·1	11·1	38·8
Total .	—	—	66,340	100·0	—	(12·0)†

* Applicable to the lower limits of income groups.
† Related to incomes over £2,000.

It can be seen that 70 per cent. of all surtax was payable by incomes over £10,000, 90 per cent. by incomes over £5,000, and only 5 per cent. by incomes of £2,000–4,000. Surtax was payable only by residents in Britain and only on their actual income, that is, not on undistributed profits, &c.

iii. Income Tax on Non-Personal Incomes

Income tax other than on personal incomes is paid on undistributed profits, income on the invested funds of life insurance companies, clubs, &c. These tax payments will be distributed in proportion to

[1] For any group surtax payable is equal to the number of incomes in the group times the average rate of tax at the lower limit of the group *plus* (total income in the group *less* number of incomes times lower limit) times marginal rate for the group.

the respective incomes (on which tax was payable) as they were imputed to different income groups. On £240 mn. undistributed profits £60 mn. income tax was payable; income tax on life funds of ordinary companies was £11 mn., on industrial companies £1·5 mn., and other income tax, paid by clubs, &c., £1·25 mn. Since life funds, &c., were holding ordinary shares, it can be estimated that only about £232 mn. undistributed profits were directly imputable to persons; these were allocated in proportion to the value of shares held,[1] as shown in Table 23. On this amount £58 mn. income tax was paid. Income tax paid on undistributed profits going to life funds was added to other tax payable by life funds; and income tax on clubs, &c., to income tax payable on ordinary life funds.[2]

The results are all shown in Table 23. It can be estimated that of all income tax and surtax liabilities 76 per cent. was on personal incomes, 19½ per cent. on non-personal incomes, and 4½ per cent. on the government and residents abroad.[3]

Of personal income tax and surtax, as can be seen in Table 23, over 50 per cent. was paid by persons having £4,000 or more. Two-thirds of the total liability falls on surtax payers, those with incomes of over £2,000. 80 per cent. falls on persons with incomes of over £1,000, another 10 per cent. on incomes between £500 and £1,000, and only 2 per cent. on persons with £250 or less.

Table 23 also shows personal income tax and surtax as percentages of personal incomes including transfers.[4] The tax is less than 1 per cent. for incomes under £250 on the average; it is 10 per cent. for incomes of about £600, 20 per cent. for about £2,500, 30 per cent. for £5,000, 40 per cent. for £10,000, 50 per cent. for £25,000, and 60 per cent. for £100,000. All income tax and surtax as a percentage of unadjusted producers' income, inclusive of transfers, are also shown. The latter percentages show the same graduation as the former but they exceed the former up to an income of £30,000 and

[1] Cf. Table 77.

[2] Assuming that membership of clubs was distributed similarly to the distribution of life policies.

[3] The last item, £17·5 mn., was calculated on £35 mn. local government trading profits and £35 mn. due to residents abroad. (Tax on the latter has been included in government income and not direct taxation.) It should be noted that Dominion income-tax relief was not deducted; therefore, of total income-tax liability £7 mn. is due to the Dominion exchequers; liability due to the United Kingdom Exchequer was £280 mn. on personal incomes and £370 mn. altogether.

[4] These include certain incomes on which no income tax or surtax was paid, e.g. most social transfers, interest on savings certificates, and under assessments in Schedules A and B.

TABLE 23. *Income tax on non-personal incomes and all income tax and surtax*

Range of incomes (1)	*Undistributed profits* (2)	*Income tax on non-personal incomes*			*Personal income tax and surtax* (6)	*All income tax and surtax* (7)	*Cumulative distribution of income tax and surtax on*			*Personal income tax and surtax as proportion of personal incomes including transfers* (11)	*All income tax and surtax as proportion of unadjusted producers' incomes including transfers* (12)
		Undistributed profits (3)	*Other* (4)	*Total* (5)			*Personal incomes* (8)	*Non-personal incomes* (9)	*All* (10)		
£	£ mn.	£'000	£'000	£'000	£'000	£'000	%	%	%	%	%
Under £125	1·1	270	770	1,040	—	1,040	100 0	100·0	100 0	—	0·1
125–150	0·5	115	355	470	320	790	100·0	98 6	99·7	0 1	0·2
150–175	0·6	160	295	455	1,110	1,565	99·9	98 0	99·5	0 3	0·5
175–200	0·8	195	250	445	1,475	1,920	99·5	97 4	99·1	0·5	0·7
200–250	1·5	380	325	705	3,330	4,035	99·0	96·8	98 6	0·9	1·1
250–300	1·9	470	870	1,340	3,680	5,020	97·8	95 8	97·5	1 6	2·2
300–400	4·6	1,150	1,465	2,615	7,330	9,945	96 5	94 0	96·1	2·9	3·8
400–500	5 5	1,385	1,130	2,515	7,540	10,055	93 9	90 4	93·3	5·2	6·5
500–600	6·2	1,560	980	2,540	7,620	10,160	91·3	87·0	90 5	7 5	9 3
600–800	12·0	2,995	1,265	4,260	13,480	17,740	88 6	83·5	87·7	10·3	12·4
800–1,000	10·7	2,675	870	3,545	11,415	14,960	83·9	77 7	82·8	13·0	15·2
1,000–1,500	21·4	5,350	1,565	6,915	22,480	29,395	79·9	72 9	78 6	15·4	17·7
1,500–2,000	16·5	4,125	1,095	5,220	16,775	21,995	72·1	63 5	70 4	17·5	19·9
2,000–2,500	12·8	3,200	785	3,985	13,130	17,115	66·3	56 3	64·3	19 4	21·7
2,500–3,000	10·5	2,625	600	3,225	10,890	14,115	61·7	50 9	59·6	21·2	23·3
3,000–4,000	17·1	4,275	735	5,010	18,260	23,270	57·9	46 5	55·7	24·1	26·0
4,000–5,000	12·6	3,160	440	3,600	14.330	17,930	51 5	39 7	49 2	27·4	28·9
5,000–6,000	10·2	2,540	280	2,820	12,340	15,160	46 5	34·8	44 2	30·6	31·6
6,000–8,000	14·5	3,620	350	3,970	18,055	22,025	42 3	31 0	40 4	33·2	33·9
8,000–10,000	9·9	2,485	230	2,715	13,450	16,165	36·0	25·6	33·9	37·1	37·2
10,000–15,000	16·8	4,195	315	4,510	22,835	27,345	31·3	21 9	29·4	41 3	40·7
15,000–20,000	9·3	2,330	160	2,490	13,320	15 810	23 3	15 8	21 8	45·6	44·3
20,000–30,000	9 8	2,440	150	2,590	14,450	17,040	18 7	12·3	17·4	49 5	47·5
30,000–50,000	8·5	2,115	90	2,205	13,135	15,340	13 7	8 8	12 7	54·3	51·3
50,000–100,000	9·1	2,280	80	2,360	13,940	16,300	9 1	5 8	8·4	57·7	53·8
100,000 and over	7·5	1,880	50	1,930	12,090	14,020	4·2	2·6	3 9	63·0	58·2
TOTAL . .	232	57,975	15,500	73,475	286,780	360,255	—	—	—	(6·5)	(7·7)

TABLE 24. *Income tax and surtax*

Range of incomes (1)	*Undistributed profits* (2)	*Life Insurance premiums* (3)	*Income tax and surtax*			*Income tax and surtax (relative distribution)*			*Personal income tax and surtax as proportion of personal incomes including transfers* (10)	*All income tax and surtax as proportion of unadjusted producer's incomes including transfers* (11)
			Personal (4)	*Non-Personal* (5)	*Total* (6)	*Personal* (7)	*Non-Personal* (8)	*Total* (9)		
£	£ mn.	£ mn.	£ mn.	£ mn.	£ mn.	%	%	%	%	%
Under £125	1	27	—	1·0	1·0	—	1·4	0·3	—	0·1
125–250	3	43	6·2	2·1	8·3	2·2	2·8	2·2	0·5	0·6
250–500	12	22	18·6	6·5	25·1	6·5	8·8	7·0	3·0	3·9
500–1,000	29	20	32·5	10·3	42·8	11·4	14·1	11·9	10·2	12·2
1,000–2,000	38	17	39·3	12·1	51·4	13·6	16·5	14·3	16·2	18·6
2,000–10,000	88	22	100·4	25·3	125·8	35·0	34·5	34·9	26·6	28·1
10,000 and over	62	6	89·8	16·1	105 9	31·3	21·9	29·4	49·6	47·5
TOTAL .	233	158	286·8	73·4	360·3	100·0	100·0	100·0	(6·5)	(7·7)

fall short of them above that level.[1] It can be said that the Inland Revenue definition of income, as against the definition which includes imputed income, favours the rich taxpayer and damages the poor.

Summary results are shown in Table 24.[2]

[1] This is so because income tax on non-personal incomes is always paid at the standard rate and no surtax is payable, while on personal incomes the rate is progressive. The exact level where the two proportions are equal depends, *inter alia*, on the rate of income tax on business savings which is determined by the amount and direction of the correction in the national income on account of stocks. Hence the exact level depends on the phase of the trade cycle, but it is always true that the second proportion exceeds the first at the lower end of incomes and falls short of it at the higher end.

[2] The distribution of income-tax and surtax-liabilities for 1938–9 has been officially published in a table presented to Parliament (cf. *House of Commons Deb.*, vol. ccclxxxii, No. 93, 23 July 1942). After allowing for the differences in the rate of taxation between 1937 and 1938 and in the respective income distributions (cf. p. 64, above) the two sets of figures are perfectly consistent.

VII

CONTRIBUTIONS TO SOCIAL INSURANCE

THERE were three great social insurance schemes in 1937: Unemployment Insurance (General, Agricultural, and Special Schemes), National Health Insurance, and Contributory Pensions for Widows, Orphans, and Old Age. The insured persons, the employers, and the Exchequer were the contributing parties, but from our point of view contributions by the Exchequer are equivalent to transactions between government departments and, therefore, contributions by workers and employers only will be considered.

Besides contributions to the statutory schemes, some trade-union and friendly society subscription fees (covering benefits paid out by these associations),[1] and the cost of workmen's compensation to employers[2] will also be considered.

i. THE INCIDENCE OF THE CONTRIBUTIONS

Though social insurance, with its basic principles of contribution unchanged, has been in existence for over a generation, the incidence of contributions has not been satisfactorily discussed. Recent discussions in the United States can be summarized as follows.[3]

According to the classical theory, assuming perfect competition and an equality between wages and the marginal product, the incidence of contributions is on the worker, irrespective of whether contributions are levied on the worker or the employer. This is not so under imperfect competition, when some of the burden might fall on profits or on the consumer. Further complications are introduced by the substitution of capital for labour, or by capital seeking industries where

[1] In Ch. V these benefits were regarded as being of the nature of transfer expenditure. On account of most of the subscriptions in question, exemption from contributing to the statutory schemes was granted.

[2] Though there is no central fund for workmen's compensation, its cost is compulsorily borne by employers and most of them insure against it. In Ch. V benefits paid under the Workmen's Compensation Acts were regarded as transfer expenditure.

[3] The subject has been more extensively discussed in America than here. Social insurance contributions as percentage of the national income were the same in both countries by 1939: it was probably the sudden increase in contributions in America which focused attention on the problem. But the discussions yielded no agreement. The latest summary is to be found in C. Ward Macy, 'Social Security Taxes in the War Finance Program' (*Journal of Political Economy*, 1943). This includes a very good bibliography of the subject.

little labour is used. Moreover, the situation varies greatly from industry to industry and even from one case to the other.

In this country the incidence of social insurance contributions was first discussed by D. Caradog Jones,[1] when estimating the burden of taxation. He assumed that workers' contributions fall on the workers[2] and employers' contributions on the employers who may, however, shift it to the consumer. But Mr. Hawtrey thought that 'the employer's contribution fell not upon the employer or the consumer, but upon the workman. It was merely a disguised contribution from wages'.[3] Employers' contributions are shifted to the workers by not increasing wages as much, in the normal course of long-run increase, as they would be increased in the absence of contributions.[4]

Mrs. Hicks has also discussed the incidence of employers' contributions.[5] 'It may be that in certain cases the eagerness of labour for employment is so great that workers consent to pay the employers' contributions in the form of lower wages. More normally it should probably be attributed to the consumers of the final product—or to the owners of the business. Hence it is very difficult to allot this tax at all.'

In national income studies[6] it has been implied that the incidence of workers' contribution is on the worker, i.e. it is a direct tax, and that employers' contribution has a price-raising effect, i.e. it is an indirect tax on production in general. This assumption was adopted in *The Burden of British Taxation* also, where it was assumed that the incidence of employers' contribution is on the consumer.[7]

The latest contribution is that of Mr. Kaldor.[8] He admits that

[1] 'Taxation before and after the War' (*Journal of the Royal Statistical Society*, 1927). Mr. Jones did not deal with the distribution of the burden between income groups, but estimated the net benefit of social expenditure to the working classes.

[2] It has nowhere been suggested that the incidence of workers' contribution can be other than on the worker. But it is conceivable, if emphasis is laid on the supply of and not the demand for labour, that this is not always the case.

[3] Loc. cit., p. 722. (In the debate following Mr. Caradog Jones's paper.)

[4] Mr. Hawtrey thus adopted the same view as that of, what was called above, the classical school in the United States.

[5] *The Finance of British Government, 1920–1936*, p. 267.

[6] C. Clark, *National Income and Outlay*, Table 59, and the official estimates, Cmd. 6261 (1941), Cmd. 6347 (1942), Cmd. 6438 (1943), &c. (Bowley's attitude is not clear.)

[7] The same assumption was made by Colm-Tarasov, *Who pays the Taxes?* (T.N.E.C., No. 3, 1940), with an alternative assumption that the incidence is on the workers.

[8] 'The Beveridge Report: The Financial Burden', *Economic Journal*, 1943, p. 25. (Also *Manchester Guardian*, 11 Feb. 1943.) Beveridge himself hardly mentioned

employers' contributions will raise prices, but goes further and argues that it 'will raise prices not only by the amount of the tax, but in proportion to the increase in prime costs caused by it; for exactly the same reasons for which a general rise in wages is likely to be followed by a proportionate rise in prices'.[1]

It will be assumed here that contributions by insured persons are a direct tax, to be discussed in the following sections, and contributions by employers an indirect tax on production in general,[2] discussed in Ch. XIV, together with other similar taxes.

ii. An analysis of contributions

Employers and workers contributed the following sums in 1937:

	£'000
Unemployment insurance:	
General Account:	
Contributions by employers and workers	42,725
Contributions by Defence departments	161
Agricultural Account	1,244
TOTAL	44,130
National Health Insurance	30,090
Contributory pensions	32,450
TOTAL	106,670

the incidence of employers' contribution except on p. 109, Cmd. 6404. 'Though such a contribution can be described as a direct tax on employment, it can equally be described as an addition to wages; it does not enter into the cost of production any more or less than do wages or the contribution of the employee that is taken out of his wages; it can and should be regarded as a proper part of the cost of production, maintaining the labour force that is necessary both when it is actually working and when it is standing by.'

This passage seems to be consistent with Mr. Kaldor's theory, and if this is so, it is curious to note that so little attention has been paid to reforming the method of employers' contribution, though the Liberal Parliamentary Party suggested (Cmd. 6405, p. 42) that employers' contribution should be related to profits and not to employment.

[1] For the latter proposition, cf. J. M. Keynes, *General Theory*, ch. 19. It is interesting to note that Mr. Kaldor reaches the same conclusion as Mr. Hawtrey, though his is a short-period analysis while Mr. Hawtrey's is a long-period one. But the reasons for reaching the same conclusion are different. According to Mr. Kaldor the tax is shifted *forward* through higher prices, according to Mr. Hawtrey *backward* through lower money wages. The latter proposition is not consistent with the Keynes theory.

[2] There are, however, the following small differences between the definition adopted here and that followed in *The Burden of British Taxation*.

(i) There are voluntary contributors to the Health and Pensions schemes and it is doubtful whether their contribution can be regarded as a tax. Most of these persons pay the employer's contribution as well.

(ii) It can be argued that part of the employer's contribution is a tax on specific consumption and not on production, e.g. contributions on account of domestic

290,000 men and 61,000 women over 65 were in employment, insured for health and pensions. It can be estimated that of this number 209,000 men and 14,000 women were insured for unemployment under the General Scheme, and 51,000 men and 1,000 women under the Agricultural Scheme. Elderly persons do not pay workers' contributions but their employers do contribute; the amount of employers' contributions for persons over 65 can be put at £1,045,000.[1]

Members of the Forces contributed to the pensions schemes only, not to the unemployment and health schemes. The government contributed on their behalf £161,000 for unemployment and an estimated £220,000 for health insurance.

Deducting these sums, it is estimated that contributions by workers and employers, when both parties were contributing, amounted to the following:

	£'000
Unemployment insurance:	
General Account	42,345
Agricultural Account	1,194
Health insurance	29,580
Pensions insurance	32,125

Weekly contributions were the following in 1937:

	Employers		*Workers*	
	Men	*Women*	*Men*	*Women*
	d.	*d.*	*d.*	*d.*
Unemployment insurance, General Account:				
Age 14–15	2	2	2	2
,, 16–17	5	4½	5	4½
,, 18–20	8	7	8	7
,, 21–64	9	8	9	8
Health insurance:				
Age 16–64	4½	4½	4½	4
Pensions insurance:				
Age 16–64	5½	2½	5½	3

servants and contributions by the government or charitable institutions on account of their employees (including members of the Forces). In any case, contributions on account of government employees ought to be omitted since these are transactions between government departments. (Except on account of employees in the trading services.)

(iii) It is known that a small part of workers' contribution is paid by their employers, e.g. most contributions for private domestic servants.

[1] It can be estimated from health and pensions insurance statistics that, on the average, 45 weekly contributions were paid annually on account of persons over 65.

Both parties made the same contributions for unemployment insurance, and both parties made the same contributions to health and pensions insurance in the case of men, but not in the case of women, unless they were insured for both health and pensions. Only a small number of women were insured for pensions only, and on this account workers' contributions exceeded employers' by £10,000. The following analysis of contributions can therefore be made:

	£'000
Workers' contributions	
Unemployment insurance:	
General Account	21,173
Agricultural Account	597
Total	21,770
Health and pensions insurance	30,855
Total	52,625
Employers' contributions	
On account of persons and contributions included above	52,615
On account of persons over 65	1,050
Unemployment and health insurance for the Forces	380
Total	54,045
TOTAL	106,670

Bowley assumed that persons in employment worked, on the average, 48 weeks in a year.[1] This figure, which itself needs confirmation, is not identical with the annual number of contributions.[2] Contributions are payable in respect of any *calendar* week in which work was done or for which, or part of which, payment was made.[3] Contributions are payable for weeks in only part of which the insured person was employed and therefore the number of contributions is necessarily greater than the ratio of annual to a full week's earnings.

If we assume that wage-earners over 18 made 49 contributions each to unemployment insurance in 1937, juveniles under 18, salaried persons, and shop-assistants 50,[4] the correct total of contributions is obtained.[5] Similar calculations for agriculture suggest 49·5 contri-

[1] See p. 242.

[2] For Scotland some information is published annually by the Department of Health. Employed persons have their health insurance cards stamped, unemployed have theirs franked. In 1937–8 the average number of stamps and franks was 48·5 for insured men and 48 for women. By definition these figures give the average number of contributions by persons not unemployed, but there is no basis for accepting them as being valid for the whole country.

[3] Contributions are payable for holidays with pay, &c.

[4] It has been estimated on p. 100, above, that on account of elderly persons 45 contributions were made.

[5] Actual total is 0·1 per cent. greater. The distribution of insured persons in employment, shown on p. 280, was used to obtain the estimated total.

butions. To obtain the correct total of health contributions it was assumed that the average number of contributions was 0·5 more in each category than for unemployment, and that persons included in health and pensions insurance only made 50·5 contributions.[1] The same number of contributions is made for pensions as for health insurance since they are covered by the same stamp.[2,3]

Contributions by workers can be summarized in the following alternative way:

	£'000
Persons insured in all schemes	
All industries, except agriculture	
Unemployment insurance	21,173
Health and pensions	23,190
	44,363
Agriculture	
Unemployment insurance	597
Health and pensions	1,320
	1,917
TOTAL	46,280
Persons insured for health and pensions only	4,145
Persons insured for pensions only	160
Voluntary contributors for health and pensions	1,640
Contribution of the Forces for pensions	400
TOTAL	52,625

Contributions by persons insured for all the three schemes can be further analysed according to age, sex, and industrial status:

	£'000		£'000
Juveniles, 14–15	379	21–64, men	2,481
16–17, boys	2,133	women	2,631
girls	1,348	Agriculture, 14–15	10
Wage-earners, 18–20, men	1,978	16–17, boys	103
women	965	girls	10
21–64, men	26,562	18–20, men	120
women	4,674	women	8
Salaried and shop-assistants,		21–64, men	1,590
18–20, men	600	women	76
women	614	TOTAL	46,280

[1] Actual total is 0·1 per cent. smaller. The reason why the average number of contributions to health insurance should be greater than to unemployment insurance is not known.

[2] Total contributions by persons insured for pensions only are officially given. The estimated total of contributions for pensions falls short of the actual total by £0·5 mn. This is accounted for by the fact that the 600,000 voluntary contributors pay at a rate dependent on the age of entry into the scheme. According to this estimate their average rate of contribution exceeds the flat rate by about one-third.

[3] In *The Burden of British Taxation* 44 contributions per annum were assumed. This is the number of contributions per *insured* person (employed or unemployed) but not per *employed* persons.

Of persons not insured for unemployment the following classes may be distinguished:

	£'000
Domestic servants, men	485
women	2,120
Female nurses	207
Persons in excepted employment, men	779
women	21
Other persons, men	229
women	306
TOTAL	4,147

It is known that for a great number of domestic servants in private employment the contributions are paid by the employers. Owing to the stability of domestic servants' wages it can be assumed that the incidence of such contributions is on the employer. It has been assumed that out of £2·6 mn. workers' contributions, employers paid £1·6 mn.

iii. THE ALLOCATION OF CONTRIBUTIONS

In Appendix F the distribution of salaries and wages was estimated and contributions by workers, as analysed above, were distributed according to the distributions on pp. 282–5.[1] It was assumed that the cash income of all domestic servants and members of the Forces (other than officers) was less than £125. It is known that about one-third of voluntary contributors had an income of £250 or more, which proportion was kept in mind when allocating their contributions. The resulting distributions were corrected to allow for the joint incomes of man and wife where both were earning and they therefore fell into a higher income group. A correction was also made for the inconsistency in the distribution of salaries and wages explained on p. 65.

In Ch. V £8·0 mn. paid by trade unions and friendly societies for unemployment, sickness and old age has been regarded as being of the nature of transfer expenditure by the government and, therefore, the same sum is regarded here as being of the nature of direct taxation. This sum has been allocated in proportion to the wage distribution of adult males in industry and the results obtained are shown in Table 25.

[1] On pp. 282–5 it was assumed that owing to unemployment 48, 42, 30, &c., weeks were worked. Correspondingly it is assumed here that the number of contributions for, e.g. unemployment, was 49, 43, 30·5, respectively.

TABLE 25. *Contributions by insured persons*

Range of incomes	*Insurance contributions*	*Trade union, &c., contributions*	*Total*
£	£'000	£'000	£'000
Under £125	27,400	2,020	29,420
125–150	7,750	1,870	9,620
150–175	6,210	1,860	8,070
175–200	3,690	1,030	4,720
200–250	4,030	1,090	5,120
250–300	1,240	110	1,350
300–400	690	30	720
400–500	25	—	25
TOTAL .	51,035	8,010	59,045
£	£ mn.	£ mn.	£ mn.
Under £125	27·4	2·0	29·4
125–250	21·6	5·9	27·5
250–500	2·0	0·1	2·1
TOTAL .	51·0	8·0	59·0

iv. EMPLOYERS' CONTRIBUTION

Employers' contribution to the three schemes amounted to £54 mn., to which should be added £1·6 mn. paid on behalf of domestic servants[1] and £13 mn., the cost of workmen's compensation, giving a total of £68·6 mn. Employers' contribution will be regarded as an indirect tax raising prices in general. Since the amount of employers' contribution per unit of output can be varied by varying the amount of labour employed, this tax enters into marginal cost and into prices. But it differs from taxes specifically on consumption in that it cannot be avoided by switching to other lines of production since all production needs labour. Moreover, while it can be said that it enters into the prices of all commodities, it is difficult to say what proportion it forms of the price of a particular commodity because we do not know the wage content of each commodity. It would be possible to allocate employers' contributions in consumer-good industries to the consumers of these goods, but we should have the greatest difficulties in the allocation of contributions in producer-good industries.

In certain cases the employer himself consumes the services produced, as in the case of employment by the government or of private domestic servants and gardeners. The amount of contributions on these accounts will now be estimated.

[1] See p. 103, above.

It was estimated on p. 100 that the government contributed on account of the Forces £380,000 for unemployment and health, and £400,000 for pensions insurance, a total of £780,000. The government also employs persons who are insured for unemployment. Total contributions on their account would come to £1,930,000. £80,000 was contributed on account of gardeners, £185,000 on account of domestic servants, and £95,000 on account of nurses employed by the government. On account of persons in government employment who were excepted from unemployment insurance £420,000 was paid. This gives a total of £3·5 mn. paid by the government which should be regarded as cancelling in the government accounts.

Charities also employed gardeners, nurses, and domestic servants and can be estimated to have paid £350,000.

On account of private domestic servants (£2,340,000) and private gardeners (£180,000), a total of £2,520,000 was paid. Together with part of the workers' contribution, employers of domestic servants and gardeners paid £4·1 mn. which will be regarded as a tax specifically on consumption.[1]

Deducting these items £60·7 mn. can be regarded as being a tax on production in general.

[1] See p. 164, below.

VIII

DEATH DUTIES

In § i of this chapter death duties are allocated to income groups according to a new method[1] and later a historical and critical survey of other methods is given.

i. The allocation of death duties

The allocation of death duties is with reference to average receipts in 1936–8, and not in 1937 alone, in order to avoid the effects of year-to-year fluctuations in capital values and of fluke estates falling in. It can be estimated that residents abroad paid on capital in Britain (taking account of the greater possibility of evasion) £1·3 mn. in death duties.[2] On the other hand, British residents paid death duties abroad on account of their foreign investments. £0·5 mn. Dominion, &c., estate-duty relief was granted in order to avoid the effects of double taxation, but this relief was ignored here since the taxpayer must be indifferent between paying to the United Kingdom or other exchequers.[3] The total liability of British residents was £85 mn. for the average of 1936–8.

The distribution of capital in private ownership is shown on p. 259. This distribution includes, however, *settled estates* which are not subject to death duties and are therefore, for the purposes of the present chapter, to be omitted.[4] Estates liable to death duties are shown in col. (2) of Table 26. In col. (3) is shown the *rate of risk*, which is equivalent to the proportion of persons in a given income group dying each year.[5] The product of the figures in these two columns gives the amount of *capital falling in*, shown in col. (4). The next column shows the rate of estate duty applicable to the group.[6]

Minor duties are, in practice, very much in the nature of an addition to the estate duty, and are treated as such in the present chapter.

[1] Published in 'The Burden of Death Duties in Terms of an Annual Tax', *Review of Economic Studies*, 1941.

[2] See p. 265.

[3] See p. 42, above.

[4] Settled estates were proportionately added to the distribution on p. 265 and they can be omitted here in the same way.

[5] For the median capital of each group, obtainable from Table 76, the rate of risk has been estimated by interpolation in Fig. 24.

[6] Determined with reference to the limiting capital values shown in Table 76. For groups where two or more rates of estate duty were applicable, weighted averages have been calculated.

TABLE 26. *Death duties, 1936–8*

Range of incomes (1)	*Capital liable to duty* (2)	*Rate of risk* (3)	*Capital falling in* (4)	*Rate of estate duty* (5)	*Estate duty* (6)	*Minor duties* (7)	*Death duties* (8)	*Cumulative distribution* (9)	*Proportion to unadjusted producers' incomes* (10)
£	£ mn.	%	£ mn.	%	£'000	£'000	£'000	%	%
Under £125	1,025	1·63	16·8	0·8	130	—	130	100·0	0·0
125–150	391	1·95	7 6	2	150	—	150	99·8	0·0
150–175	460	2 05	9·4	2	190	—	190	99·6	0·1
175–200	428	2·15	9·2	2	180	—	180	99·4	0·1
200–250	619	2·28	14 1	3	420	270	690	99·2	0·2
250–300	593	2·42	14·4	3	430	270	700	98·4	0·3
300–400	1,025	2·58	26 5	3	790	500	1,290	97·6	0·5
400–500	814	2·75	22·4	3	670	430	1,100	96·1	0·7
500–600	679	2·86	19 4	3·4	660	370	1,030	94·8	0·9
600–800	1,050	2·98	31·3	4	1,250	590	1,840	93·6	1·3
800–1,000	820	3·08	25·3	4	1,010	480	1,490	91·4	1·5
1,000–1,500	1,480	3·20	47·4	5·6	2,650	900	3,550	89·6	2·1
1,500–2,000	1,052	3·31	34·8	7·8	2,720	780	3,500	85·4	3·2
2,000–2,500	782	3·39	26 5	9·4	2,490	590	3,080	81·3	3·9
2,500–3,000	633	3·45	21 8	10·6	2,310	480	2,790	77·7	4·6
3,000–4,000	982	3·51	34·5	12·4	4,270	740	5,010	74·4	5·6
4,000–5,000	707	3·58	25 3	14·9	3,770	530	4,300	68·5	6·9
5,000–6,000	556	3·64	20·2	16·5	3,340	440	3,780	63·4	7·9
6,000–8,000	778	3·70	28·8	18·4	5,300	620	5,920	58·9	9·1
8,000–10,000	524	3·77	19·7	20·5	4,040	420	4,460	51·9	10·3
10,000–15,000	844	3·89	32·8	23·4	7,650	670	8,320	46·6	12·4
15,000–20,000	460	3·92	18·0	26·8	4,830	350	5,180	36·8	14·5
20,000–30,000	468	3·97	18·6	29·6	5,510	350	5,860	30·7	16·3
30,000–50,000	393	4·02	15·8	32·8	5,180	280	5,460	23·8	18·3
50,000–100,000	429	4·07	17·5	37·6	6,580	290	6,870	17·4	22·7
100,000 and over	399	4·10	16·3	47·0	7,690	230	7,920	9·3	32·9
TOTAL . .	18,394	(3·12)	574·6	(12·9)	74,210	10,580	84,790	—	(1·8)

TABLE 27. *Death duties, 1936–8 (Summary)*

Range of incomes (1)	*Capital liable to duty* (2)	*Rate of risk* (3)	*Capital falling in* (4)	*Estate duty* (5)	*Estate duty* (6)	*Minor duties* (7)	*All death duties* (8)	*Relative distribution* (9)	*Proportion of unadjusted producers' income* (10)
£	£ mn.	%	£ mn.	%	£ mn.	£ mn.	£ mn.	%	%
Under £125	1,025	1·6	17	1	0·1	—	0·1	0·1	0·0
125–250	1,898	2·1	40	2	0·9	0·3	1·2	1·4	0·1
250–500	2,432	2·6	63	3	1·9	1·2	3·1	3·7	0·6
500–1,000	2,549	3·0	76	4	2 9	1·4	4·3	5·1	1·5
1,000–2,000	2,532	3·2	82	7	5·4	1·7	7·1	8·4	3·0
2,000–10,000	4,962	3·6	177	14	25·5	3·8	29·3	34·6	6·6
10,000 and over	2,993	4·0	119	31	37·4	2·2	39·6	46·8	17·8
TOTAL . .	18,391	(3·1)	574	(13)	74·1	10·6	84·7	100·0	(1·8)
Under £250	2,923	2·0	57	2	1·0	0·3	1·3	1·5	0·0
Over £250	15,468	3·3	517	14	73·1	10·3	83·4	98·5	4·3

an annual tax according to three different methods.[1] Method *A* is but a crude form of method *B*, omitting graduation of duty. Method *B* assumes that property passes every 30 years[2] and produces an income of 4 per cent. In any grade the rate of tax on income is the proportion of duty paid on capital falling in to income from capital in that grade. Method *C* assumes that the incidence is on the successor, who 'has to suffer not only the loss of income from the slice taken out of his inheritance, but has also to establish, so to speak, a sinking fund which will replace the slice in thirty years'. If £100 purchases a £5 terminable annuity for 30 years, the annual burden of the duty will be 5 per cent. of its total amount. In each case the annual tax is a constant proportion of total duties payable but the constants are different.[3] If the length of a generation equalled the reciprocal of the rate of yield on annuities, methods *B* and *C* would produce the same result.

In 1914 tables were laid before Parliament showing death duties as an equivalent annual charge on income.[4] The first two tables were based on methods *B* and *C* of Sir Henry Primrose, a third table gave the burden on the estate owner assuming a 3 per cent. annuity. Out of this third table the well-known insurance method developed by 1918.[5] Instead of taking 30 years as the length of a generation, the age of 40 was taken as the age when a person takes out a life policy, and instead of a 3 per cent. annuity a 2·8 per cent. insurance premium rate was used. Estates were capitalized at 5 per cent. The second formula differs from the first only in the constants. In 1919 the same method was adopted by Lord Samuel, who also included minor duties, adding them in proportion to estate duty.[6] He was, however, careful to point out that of all methods the insurance method yielded the lowest annual burden.

This method was refined and its limitations discussed by the Colwyn Committee.[7] Later calculations introduced no improvement.[8]

[1] *Report*, App. 8.

[2] A figure taken over from Gladstone rather than calculated.

[3] Writing *I* for investment income and $r(C)$ for the rate of duty on capital *C*, the rate of equivalent income tax according to method *B* is $t = \frac{2}{3}\frac{5}{0}r(25\,I)$ and according to method *C* $t = \frac{2}{2}\frac{5}{0}r(25\,I)$.

[4] 42, *H.C. Deb.* 5 *s.*, p. 2103 (A. Chamberlain, 21 May 1914).

[5] 108, *H.C. Deb.* 5 *s.*, p. 511 (Bonar Law, 11 July 1918).

[6] 'The Taxation of the Various Classes of the People', *Journal of the Royal Statistical Society* (presidential address).

[7] *Report of the Committee on National Debt and Taxation, 1926*, §§ 228–37 and 452–548.

[8] D. Caradog Jones, *Journal of the Royal Statistical Society*, 1927, and M. Sandral, ibid., 1931; also tables laid before Parliament showing the burden of

In the Colwyn Report investment income is capitalized at 5 per cent. and minor duties are added in proportion to estate duty. It was assumed that an individual takes out a life policy at the age of 45 on which the rate of premium is 3·5 per cent. The value of the policy was added to the value of the estate, but income-tax rebate on premiums was allowed for. In the General Tables of the report incomes are assumed to be half earned and half investment.

The Colwyn method, though *actuarily* sound, is not realistic for reasons given below. It is also open to objection on the grounds given by Mr. Kaldor.[1] Nevertheless, the Colwyn method enjoyed a great degree of popularity and no objection was raised against its application.[2]

The Colwyn method has been subjected to criticism on the basis that it was not applicable to a significant proportion of cases and that it gave a biased comparison between the burden on different classes.[3] The method described in § i, above, was suggested as an alternative and it was argued that this method bore a similar relation to method *B* of Sir Henry Primrose as did the Colwyn method to his method *C*. Both methods, method *B* and the one described above, approached the problem from a macro-economic point of view. But it is also possible to find a micro-economic approach, based on the theory of probability, which would give the same numerical results as the method in § i. This approach is the following.

An estate of a certain value is liable, on the owner's death, to pay a certain amount of death duties, which will be called *potential death duties*. Every individual has a certain probability of dying within a year, and the burden of potential duties upon him within that year—the equivalent annual capital tax—equals the amount of potential death duties multiplied by the probability of death. If the individual is of normal health, which assumption is necessarily implied in the insurance method also, his chance of dying within a year will be the mortality rate of his age and sex.[4]

If any normal individual approached the Exchequer suggesting

direct taxes in 1913 and 1930 (238, *H.C. Deb.* 5 *s.*, col. 1628–30: Mr. Snowden, 13 May 1930).

[1] See p. 117, below.

[2] In the United States the Colwyn method has been accepted without reservations by Newcomer, 'Estimates of the Tax Burden', in *Studies in Current Tax Problems*, 1937. The Colm-Tarasov inquiry (cf. p. 98, above) allocated estate duties on a hypothetical basis.

[3] *Review of Economic Studies*, November 1941, p. 33.

[4] It is more proper to use 'social class' mortality rates. Cf. H. Campion, *Public and Private Property in Great Britain*, pp. 15–16.

that he should be allowed to pay, instead of the statutory death duties, an annual capital tax the value of which was equal to the amount of his potential duties multiplied by the relevant mortality rate, the Exchequer must be indifferent between the application of the law and this proposal as they would both yield the same revenue.[1] If a great number of individuals is taken, the annual tax, as calculated by the method suggested here, must equal annual Exchequer receipts from these individuals on account of death duties. The group to which the method is applied might be any group of individuals; we are here interested in income and capital groups.

The average rate at which a group transforms its potential death duties into an annual tax is the weighted average of mortality rates of members of the group, weights being potential death duties payable. When dealing with capital groups the weighted average mortality rate of the group will be called the *rate of risk*. Since in a capital group potential death duties are proportional to capital, capital can be used for weights instead of potential death duties. According to the 'estate method'[2] the section of the national capital owned in a certain grade is calculated by dividing capital left at death within a year, classified according to the age and sex of owners, by the respective social class mortality rates. Therefore a section of the national capital can be taken in any grade (classified according to the age and sex of the owners) and, *multiplied* by the relevant mortality rates, will give capital falling in within a year. Hence in any capital group the rate of risk is the ratio of capital left in that group to the section of the national capital held in that group.[3]

Our formula for the burden of death duties in terms of an annual tax involves two new functions, the rate of risk function which has taken the place of the assumption that the length of a generation is the same for each group, and the yield function which supersedes the assumption that the rate of capitalization is the same for each group, at any time.[4,5]

On the basis of the new method the following objections were raised against the Colwyn method. The rate of insurance premium used in the Colwyn estimate might be regarded as a rate of risk not varying

[1] Administrative expenses, &c., are ignored.

[2] Cf. H. Campion, op. cit., pp. 5–7.

[3] This ratio is the inverse of what corresponds to the 'estate multiplier' when applied to a group.

[4] For the rate of risk function see Fig. 24, for the yield function Fig. 25.

[5] The latter refinement becomes important when examining changes in the burden of death duties during the trade cycle.

with the amount of capital owned and could be represented by a horizontal line at 3 per cent. in Fig. 24.[1] This line cuts the rate of risk curve at £10,000, and therefore the Colwyn method, compared to our own, overstates the burden on estates of £10,000 or less and understates it on greater estates.[2] But it is possible that the 3 per cent. insurance premium used in the Colwyn method is a good average of all rates of risks,[3] in which case both methods would give the same total burden, which equals Exchequer receipts, but the Colwyn method would distribute this burden in erroneous proportions.

The insurance method, moreover, is subject to a considerable degree of arbitrariness from which our method is free. In the first place an arbitrary assumption has to be made with regard to the age at which the individual takes out a life policy. Another arbitrary factor enters into the rate of premium in the form of the rate of interest earned on assets of insurance companies and their cost ratios. These and other difficulties were recognized and discussed by those employing the method, but there are further difficulties also, suggesting that it would be better to discard the insurance method altogether.

The assumption of the Colwyn Committee that individuals take out a policy at the age of 45, carried to its logical conclusion, implies that no burden is placed on individuals under 45 who have not taken out insurance and pay no premiums. The proportion of estate owners under 45 is quite significant and varies with the size of the estate, as shown in Fig. 2. It falls, as capital increases, from 50 to 10 per cent. Every year some duty is paid on estates of persons dying before they reach the age of 45, and the insurance method does not deal with this problem.

The figures of the Colwyn Report apply to men only, an omission which, though not important theoretically, is significant in practice because a considerable proportion of estates is owned by women, a proportion which varies with the size of the estate as shown in Fig. 3. In the lowest group the value of estates owned by women is greater than that owned by men, while in the highest group it is still about half of the estates owned by men, considering persons over 45 only. A distinction must be made because insurance premiums for men and women are different.

[1] This rate was relevant for a man of 45 in 1937.

[2] Our results might, in extreme cases, differ from those of the Colwyn Report by 50 per cent. in either direction.

[3] i.e. the average mortality rate of all estate owners, which is equal to the reciprocal of the general estate multiplier.

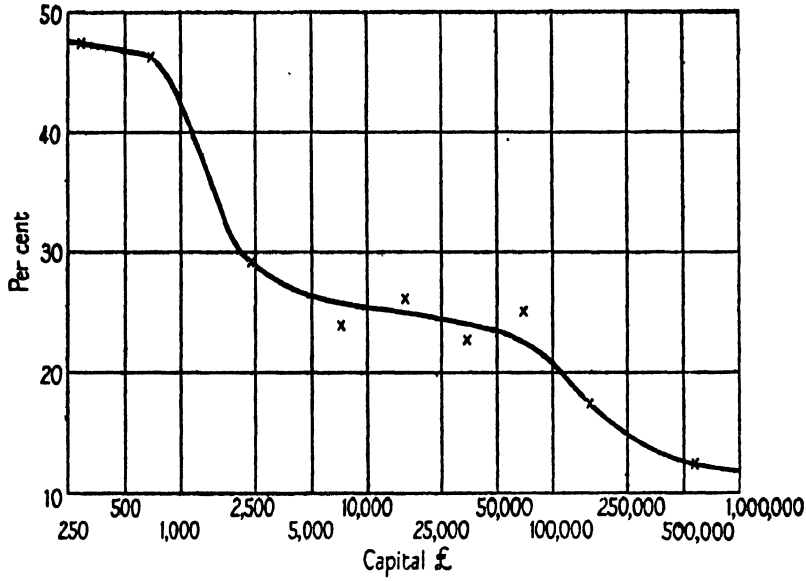


FIG. 2. Proportion of estates owned by persons under 45, 1936–8.

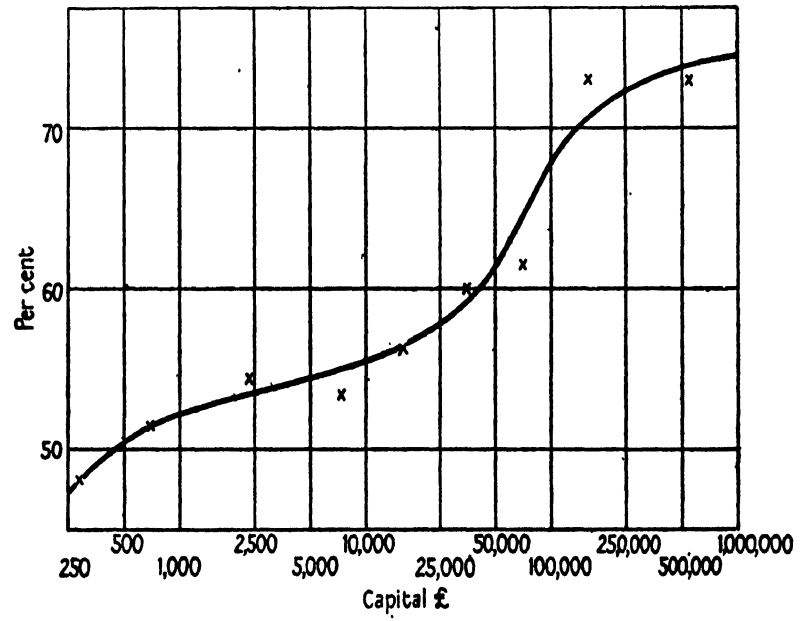


FIG. 3. Proportion of estates owned by men (of estates owned by persons over 45), 1936.

Lastly, the insurance method is highly unrealistic because the value of life policies left at death is much less than the amount of death duties payable. In 1937–8 the value of policies was only 29 per cent. of the amount of duties payable and was much less in the higher estate groups, as shown in Fig. 4. This suggests that even if the insurance method is used for illustrative purposes, the value of the policy should not be added to the estate.

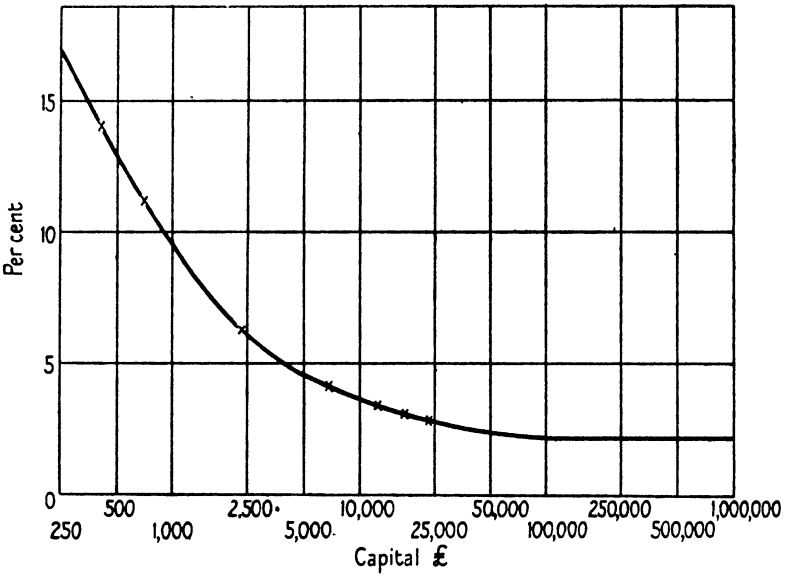


FIG. 4. Proportion of life policies in net capital.

At one point the insurance method, if it were used again, could be greatly improved. The Colwyn Committee, while admitting that estates increase with the age of the owner, did not apparently discover any quantitative measure of that increase and therefore ignored it. The individual, it was stated, disclaims any knowledge of the future. In reality every individual has a certain expectation of the future and the Committee implicitly assumed that people expect their estates to remain stationary. An alternative assumption would be that estates do increase and that they increase normally. The expectation of normal change seems more realistic than the expectation of no change at all. It will be assumed that an individual's estate increases normally if his relative social position does not change at any age over 45, the relative social position of an individual being determined by the proportion of persons of his age and sex who have an estate greater than his own.

If it is further assumed that the distribution of estates for a given age and sex group will remain unchanged, empirical results can be obtained.[1] It was found, on this basis, that between 1937 and the expected time of death, estates would increase by 20 to 70 per cent., depending on the size of the estate owned.[2,3]

iii. An alternative method

The latest and most fundamental objections against the Colwyn method were raised by Mr. Kaldor, who also suggested an alternative method according to which direct taxes on an estate are calculated as the interest on the capitalized value of all future tax-payments.[4]

Calculated by the insurance method, the burden of death duties, together with income tax and surtax, might exceed 100 per cent. of the income. This is so even when the Colwyn method is modified and one assumes that a policy is taken out at the age of 38 instead of 45. At the latter age expectation of life is equal to the length of a generation.[5] Mr. Kaldor argues that the age at which a policy is taken out cannot be arbitrarily chosen but must correspond to the 'average length of a generation'. This, however, is not necessarily true except of estates established in the past and handed down by inheritance. In the real world estates are broken up and new estates are formed. It is well known that estates which are not inherited are acquired at a later age than inherited estates and, no doubt, the Colwyn Committee had these also in mind. If the method is to cover such cases it must also remain arbitrary.

Mr. Kaldor's fundamental objection against the Colwyn method was that it misrepresents the burden of death duties because it attempts to estimate it assuming that gross capital is maintained intact under circumstances where this is impossible. If the burden of direct taxes is over 100 per cent. of income it is impossible to save enough to maintain gross capital intact. Developing this idea, it can be demonstrated that before the average rate of direct taxes becomes

[1] For the method and estimates see *Review of Economic Studies*, 1941, op. cit., Note B.

[2] The increases for women would be different because of different distributions and mortality rates for women.

[3] If the arbitrary age at which a policy is taken out were raised the average expected increase of the estate would be necessarily reduced. Hence by taking into account the normal increase of estates the arbitrariness of the insurance method can be somewhat reduced.

[4] *The Burden of British Taxation*, ch. iv, and in more extended form, *Review of Economic Studies*, Summer 1942.

[5] Cf. *Review of Economic Studies*, Summer 1943, p. 147.

100 per cent., the marginal rate of direct taxes reaches 100 per cent. and beyond that level, though it is possible to save, this would be nonsensical because smaller net income would correspond to greater gross income.[1]

From an analytical point of view Mr. Kaldor's method is an approach to what could be called a general theory of the tax burden on investment incomes.[2] He demonstrates that the main variable is saving, which has the same relevance to capital taxes payable as consumption has to taxes on consumption. Two typical levels of saving are assumed. The typical maximum is calculated by assuming that a maximum net income stream is maintained, the typical lower limit assumes that there is no saving.[3]

From one point of view, perhaps, the method outlined in § i is preferable to Mr. Kaldor's. Under present law there is a wide scope for avoiding death duties by way of gifts *inter vivos*. Rational behaviour—which is assumed by Mr. Kaldor—would demand the transference of estates to sons during the lifetime of their fathers and estate duties would never be paid. In our method an allowance for avoidance is implied, since the more gifts *inter vivos* there are the lower is the average age of estate owners and the higher the 'estate multiplier'. Hence the capital distribution on p. 259 is not affected, and our estimate of the burden of death duties makes an automatic allowance by the rate of risk being lower than it would otherwise be. The case of settled estates is exactly similar in its consequences.

For a person faced with income tax, surtax, and death duties (who does not try to avoid death duties, and does not expect capital appreciation) Mr. Kaldor prescribes a very good policy to be followed.[4] But in this inquiry a method was needed which would be applicable

[1] This argument is very useful in exposing a popular fallacy. Mr. Churchill in a speech in the Commons, 1 June 1937, said that income tax, surtax, and death duties (if insured against) would about take away the whole income in the higher groups. An Hon. Member interjected: 'Even more!'

[2] Mr. Kaldor states that our method is but another form of insurance method insuring for one year only instead of for life. It seems more correct to say that both the insurance method and ours are based on the theory of probability: but so is Mr. Kaldor's method, for it involves the probable expectation of life.

[3] § 8, loc. cit., summarizes the assumptions and the results are shown in Tables 1–4, ibid.

[4] But it cannot be accepted that Mr. Kaldor's method is free from arbitrariness by taking the insurance period for each person as being equivalent to the length of a generation. An infinite future period is considered, but the results obtained are essentially dependent on the *beginning* of this period and this is arbitrarily chosen. Taking as the beginning of the period, instead of the time of inheritance by the present owner, the time of inheritance by his predecessor, the results would be changed.

to all cases and which would give the total burden as being equivalent to Exchequer receipts. The adoption of Mr. Kaldor's method would have made necessary the adoption of similar methods to deal with other taxes, a method which takes into account, for example, future variations in tobacco consumption. Instead, our method completely ignores the future.[1] By adopting a different method a different picture of redistribution would have been obtained in other respects also.[2]

It has to be concluded that an exact calculation in this sphere must remain illusory, and the warning of Sir Henry Primrose must be kept in mind, that 'in view of the uncertainty of life, it is manifest that no one [of the calculations] can do more than show the average of the burden of death duties, when translated into an annual burden, and that for any given piece of property, the actual burden must depend upon a number of circumstances which may vary within very wide limits'.[3] The estimates in this chapter should be regarded as being formal; they do not imply any suggestion that income tax should replace death duties, as the economic effects of the two taxes are different.

[1] We have defined income *ex post* (p. 8, above) while Mr. Kaldor uses an *ex-ante* definition corresponding to the second definition of Professor Hicks (p. 7). The difference in the respective definitions of income is probably the cause of the differences between the two methods.

[2] e.g. insured persons contributed for old age pensions which old people received as transfers. Taking a longer view, insured persons did not pay a tax but saved (though the saving was compulsory).

[3] Loc. cit. On pp. 109–10.

IX

STAMP DUTIES, N.D.C., AND OTHER INLAND REVENUE DUTIES

IN this chapter stamp duties, the National Defence Contribution, and other Inland Revenue duties will be discussed, deciding which of these taxes can be regarded as a direct tax and how they can be allocated to income groups.[1]

i. STAMP DUTIES

In the various inquiries into the burden of taxation not much attention has been paid to stamp duties. Lord Samuel discussed their incidence in qualitative terms[2] but omitted them from his calculation, and this precedent was followed by the Colwyn Committee. Mr. Sandral[3] allocated stamp duties in proportion to the income of the classes paying income tax, a procedure which, though inadequate, is better than omitting stamp duties altogether. In *The Burden of British Taxation* about 40 per cent. of all stamp duties, those not on transfers of property, were included with other indirect taxes on production in general while the rest was omitted.

Though stamp duties are the most ancient form of tax, it is difficult to find a concise treatment of the economic problems they raise. True, the importance of stamp duties in Britain has greatly diminished by now but, owing to certain special circumstances, they are still important.[4] 'The modern importance of stamp duties is due to the change in the method of financing long-term investment, and to the growth of the limited liability company.'[5] This can be demonstrated by an account of average stamp-duty receipts for 1936–8:

	£ *mn.*
Transfer of land and property, other than shares	5·3
Transfer of stocks, shares, debentures, &c.	8·5
Companies share capital duty	1·2
Cheques, bills of exchange, &c.	4·6
Receipts	3·1
Marine insurance	0·7
Certificates and licences	0·2
Miscellaneous	1·2
TOTAL	24·8

[1] Stamp duties regarded as indirect taxes are discussed in Ch. XI. [2] Op. cit.

[3] 'The Taxation of the Various Classes of the People', *Journal of the Royal Statistical Society*, 1931.

[4] For a good account cf. *Colwyn Report*, p. 549, et seq.

[5] U. K. Hicks, op. cit., p. 244.

As can be seen, 70 per cent. of the receipts is on account of financial transactions. Some stamp duties can be regarded as a sales tax (the only sales tax of any importance in Britain).[1] Stamp duties are important from the economist's point of view also because of their sensitiveness to the trade cycle, fluctuations in receipts preceding fluctuations in national output.[2]

The best discussion of the incidence of stamp duties is that of Professor Shirras.[3] Duties on the conveyance of land tend, 'in so far as it is a recurrent liability, to fall on landowners'. In the case of bearer bonds the incidence tends to be on the borrower. Companies share capital duty tends to fall on the company, it is not passed on in higher prices to the consumer. Since the duty is a charge on profits the effect falls on the shareholder. The incidence of the duty on cheques is on the person drawing them, but if drawn by a trader, he passes the burden to the consumer.

More recently Messrs. J. E. Meade and R. Stone discussed the problem in more general terms.[4] They argue that tax payments not deducted by business firms from current receipts as cost are direct taxes and those which are deducted are indirect taxes. Duties on cheques drawn by business are included in the cost of production, hence they are indirect taxes. Duties on cheques drawn by private individuals are indirect taxes if they are regarded as an addition to the market price, but if not so regarded, are direct taxes.[5] Similar criteria apply to duties on the transfer of property.

In the White Papers on national income stamp duties on the transfer of property were regarded as a direct tax and other stamp duties as an indirect tax on production in general. A similar procedure was followed in *The Burden of British Taxation*. The following method has been adopted in this chapter.

The incidence of duties on the *transfer of real property* is either on the buyer or the seller of the property, though it may be the case that the whole or part of the burden was borne by the owner at the time of the imposition of the duty. Since it can be assumed that, on the average, buyer and seller are in the same income class, this duty can

[1] Ibid., p. 248. (There was no purchase tax in 1937.)

[2] Ibid., pp. 302–6.

[3] *The Science of Public Finance*, pp. 676–7. (The same conclusions were reached by the Colwyn Committee.)

[4] 'Tables on National Income and Expenditure', *Economic Journal*, 1941, p. 225.

[5] It can be argued, however, that the duty on cheques drawn by private individuals cannot be regarded as an indirect tax, raising prices, because the duty is proportional neither to the value nor to the quantity of the commodities bought.

be regarded as a direct tax and allocated in proportion to the value of real property owned.

In 1937–8 £5,580,000 was received on transfers of real property. About four-fifths of real property were owned by persons liable to death duty[1] and therefore £4,460,000 has been allocated in proportion to real property in personal ownership,[2] while £1,120,000 was likely to have been paid by companies and was allocated similarly to the distribution of the duty on the transfer of shares.

The duties on the *transfer of shares, &c., and companies share capital duty* are likely to fall on buyers and sellers of shares. Using the same argument as above, this duty, with the exception of composition transfer duty and the duty on bearer bonds, has been allocated in proportion to the value of shares in personal ownership.[3] In 1937–8 £8,230,000 were received from these duties, to which must be added £1,120,000 from the preceding heading, giving a total of £9,350,000. It can be estimated that of this sum £200,000 were paid by foreigners and £300,000 by life insurance companies, while the rest, £8,850,000, has been allocated in proportion to the value of shares in personal ownership.

Composition transfer duty, £395,000, was payable by municipal corporations, when floating loans, in lieu of stamp duties on future transactions in these bonds. This is, from our point of view, a payment of tax by the government.

As argued by the Colwyn Committee[4] the *duty on bearer bonds* falls on borrowers abroad. Receipts in 1937–8 were £275,000, much less than in earlier years.

Receipts from other stamp duties, of which three kinds must be discussed separately, came to £9,860,000. The duty on cheques came to £4,060,000 in Great Britain, paid on 488 million cheques.[5] Duty on cheques drawn by private individuals can be regarded as a direct tax. There is no known estimate of the number of cheques drawn by individuals, and it will be assumed that the amount of duty per annum and per income was 5*s.* in the case of incomes £200–250, 15*s.* £250–500, 25*s.* £500–1,000, and 30*s.* £1,000 and over, on which assumption a total of £2,840,000 was received from individuals.

The *duty on receipts* is, similarly to the duty on cheques, regarded as a direct tax if receipts are drawn by private individuals. Total

[1] Ratio of total in Table 77 to value of real property estimated by H. Campion, op. cit., Table 5.

[2] See col. (7), Table 77.

[3] See col. (5), Table 77.

[4] *Report*, §§ 562–5.

[5] 1937 was a peak year in cheque receipts.

revenue was £3,070,000, paid on 368 million receipts.[1] It was assumed that individuals paid in duty per income and per annum 6*d.* in the case of incomes under £200, 1*s.* £200–250, 2*s.* £250–1,000, and 3*s.* £1,000 and over, on which assumption total duties paid by individuals came to £790,000.

Included in stamp duties on miscellaneous items was £280,000 paid on life insurance policies, and it can be assumed that this duty was borne by holders of policies. We also added £300,000, the estimated amount of duty on the transfer of shares paid by life companies and included in their cost of administration.[2] £580,000 were allocated in proportion to premiums paid on life policies.[3]

Other stamp duties amounting to £6,090,000 must be considered as an indirect tax on production in general. Included are £3,500,000 duty on cheques and receipts drawn by businesses and duties on licences, marine and fire insurance, all of which are likely to be passed on to the consumer.

The following figures summarize the results:

Stamp duties, 1937

	£ *mn.*
Direct tax	
On owners of real property	4·46
On owners of shares	8·85
On cheques, receipts, and insurance by private individuals	4·21
Total	17·52
Indirect tax	
On production in general	6·09
On the government and residents abroad	0·87
TOTAL	24·48

The allocation of stamp duties regarded as a direct tax is shown in Table 28 as duties falling on owners of real property, owners of shares, and duties on cheques, receipts, and life policies paid by private individuals. Stamp duties falling on owners of real property came to 0·11 per cent. of the value of real property, stamp duties on shares to 0·14 per cent. of the value of shares.[4] Duties on cheques, receipts,

[1] The revenue from the duty on receipts is *estimated* by the Inland Revenue since postage stamps can also be used for payment.

[2] For the volume of transaction of life companies cf. Wilson and Levy, *Industrial Assurance*, p. 384.

[3] See Table 21; £180,000 on industrial and £400,000 on ordinary policies.

[4] It seems, on the basis of these findings, that there is not much truth in the claim voiced, especially before the Colwyn Committee, that the relative burden of stamp duties is so much greater on shares because of the greater turnover of shares, though this might be true for certain kinds of shares.

TABLE 28. *Stamp duties and N.D.C.*

Range of incomes (1)	*Stamp duties*					*N.D.C.* (7)
	On transfers			*On cheques, receipts, &c.* (5)	*Total* (6)	
	Real property (2)	*Shares* (3)	*All* (4)			
£	£'000	£'000	£'000	£'000	£'000	£'000
Under £125	560	40	600	370	970	80
125–150	160	20	180	90	270	40
150–175	200	30	220	80	300	50
175–200	180	30	210	60	270	60
200–250	250	60	310	500	810	120
250–300	230	70	300	720	1,020	150
300–400	370	180	540	670	1,210	360
400–500	260	210	470	310	780	430
500–600	190	240	430	280	710	480
600–800	260	460	710	290	1,000	930
800–1,000	180	410	590	160	750	820
1,000–1,500	290	820	1,110	250	1,360	1,650
1,500–2,000	190	630	820	120	940	1,270
2,000–2,500	130	490	620	70	690	990
2,500–3,000	100	400	500	50	550	810
3,000–4,000	150	650	810	60	870	1,320
4,000–5,000	100	480	590	30	620	980
5,000–6,000	80	390	470	20	490	780
6,000–8,000	110	550	660	20	680	1,120
8,000–10,000	70	380	450	10	460	770
10,000–15,000	110	640	760	20	780	1,300
15,000–20,000	60	350	420	10	430	720
20,000–30,000	60	370	430	10	440	750
30,000–50,000	50	320	380	—	380	650
50,000–100,000	60	350	400	—	410	700
100,000 and over	50	290	340	—	340	580
TOTAL . .	4,460	8,850	13,320	4,210	17,530	17,910

and life policies reached a maximum of 0·35 per cent. of income at an income of £250, on the assumptions made, and were negligible for higher incomes. As seen in Table 29, the bulk of stamp duties is paid by incomes over £250. This is particularly the case of the duty on transfers of property, of which incomes over £250 pay 90 per cent. Of all stamp duties regarded as a direct tax persons with over £250 paid 85 per cent., surtax payers (incomes over £2,000) paid 40 per cent. Although stamp duties are levied at flat rates, in their whole effect they are progressive but not to the same extent as income tax and surtax.

TABLE 29. *Stamp duties and N.D.C. (Summary)*

Range of incomes	*Stamp duties*						*N.D.C.*	
	On transfers of property		*On cheques and receipts*		*All*			
£	£ mn.	%	£ mn.	%	£ mn.	%	£ mn.	%
Under £125	0·6	5	0·4	10	1·0	6	0·1	1
125–250	0·9	7	0·7	17	1·7	10	0·3	2
250–500	1·3	10	1·7	40	3·0	17	0·9	5
500–1,000	1·7	13	0·7	17	2·4	14	2·2	12
1,000–2,000	1·9	14	0·4	10	2·3	13	2·9	16
2,000–10,000	4·1	31	0·3	7	4·4	25	6·8	38
10,000 and over	2·7	21	0·0	0	2·8	16	4·7	26
TOTAL . .	13·2	100	4·2	100	17·6	100	17·9	100
Under £250	1·5	11	1·1	26	2·7	15	0·4	2
Over £250	11·7	89	3·1	74	14·9	85	17·5	98

ii. NATIONAL DEFENCE CONTRIBUTION

The National Defence Contribution was introduced in 1937, imposed, generally speaking, on all business except public utilities (inclusive of railways). The first period for which profits were liable to tax began on 1 April 1937 and the rate of tax was 5 per cent. on the profits of companies and 4 per cent. of private firms. Profits of less than £2,000 were exempt and abatement was granted on profits between £2,000 and £12,000 amounting to one-fifth of the sum by which profits fell short of £12,000.[1] Receipts were £1·4 mn. in 1937–8, £21·9 mn. in 1938–9, and £26·7 mn. in 1939–40.[2] National Defence Contribution is deductible from income-tax assessments but, in spite of this, it is regarded as a direct tax.

Owing to the time-lag between receipts and assessments, receipts would not give a true picture of liability for 1937. Since there is a lag in assessment, liability is also underestimated. But, since profits were about the same in 1937 and 1938, we can use assessment in 1938–9 and assume that liability for 1937, i.e. from 1 April to 31 December 1937, came to three-quarters of the assessments for 1938–9 and was £18·6 mn. Some of this, an estimated £0·7 mn., was paid on profits due to residents abroad, the rest, £17·9 mn., has been allocated in proportion to the value of shares held.[3]

[1] Profits were computed for assessment as for income-tax purposes, but interest on loans, &c., was allowed and rent on own premises not deducted. Building societies received special attention.

[2] There were some slight modifications in the law relating to this tax, soon merged with E.P.T. and losing its significance.

[3] Shown in Table 77.

National Defence Contribution being a direct tax should not have been deducted from income-tax assessments and is, therefore, imputed to holders of shares in Table 17 and deducted here in the same way. The figures are shown in Tables 28 and 29. The bulk of the burden falls on incomes over £250 and only 2 per cent. is paid by incomes under £250. 64 per cent. is paid by surtax payers who pay the same percentage of income tax and surtax also.

iii. Other inland revenue duties

Of seven kinds of death duties on the statute book only three were payable on deaths occurring in 1937. Receipts from *Probate and Inventory duty*, *Account duty*, *Temporary* and *Settlement Estate duty* were paid for deaths which occurred a long time ago, hence there was no liability on account of these taxes for deaths occurring in 1937.

E.P.T. (of the last war) *and Munitions Levy* and *C.P.T.* came into the same category; all revenue coming in was on account of liability incurred in the past.

Land tax brought in, on the average, £0·6 mn. in 1936–9. The incidence of this tax is on the owner of the land at the time when the tax was imposed; by 1937 most land in the country had redeemed its obligation. It can be assumed that this tax has been capitalized and its whole burden fell on landowners in the past. On the principle of 'old tax is no tax' it was omitted. The same criteria apply to *Mineral Rights duty* payable on the working of mines. Revenue was £0·2 mn.

Corporation duty was payable as a stamp duty, since 1885, by way of compensation for non-liability to death duties of certain property of corporate and unincorporate bodies. It was payable at the rate of 5 per cent. of the net income of property, but the greater part of the property liable was specifically exempt and receipts came to £0·1 mn. only.

X

DIRECT TAXES: A SUMMARY

i. Direct taxes

In Chapters VI–IX direct taxes amounting to £539·5 mn. were allocated. It was also estimated that income tax, social insurance contributions, death duties, stamp duties, and N.D.C. amounting to £24 mn. were paid by the government or residents abroad.[1]

Table 30. *Direct taxes*

Range of incomes	*Income tax and surtax*		*Social insurance contributions, &c.*	*Death duties*	*Stamp duties on transfer of property, &c.*	*Duties on cheques, receipts, &c.*	*N.D.C.*	*Total*
	Personal	*Non-personal*						
£	£'000	£'000	£'000	£'000	£'000	£'000	£'000	£'000
Under £125	—	1,040	29,420	130	600	370	80	31,640
125–150	320	470	9,620	150	180	90	40	10,870
150–175	1,110	455	8,070	190	220	80	50	10,175
175–200	1,475	445	4,720	180	210	60	60	7,150
200–250	3,330	705	5,120	690	310	500	120	10,775
250–300	3,680	1,340	1,350	700	300	720	150	8,240
300–400	7,330	2,615	720	1,290	540	670	360	13,525
400–500	7,540	2,515	25	1,100	470	310	430	12,390
500–600	7,620	2,540	—	1,030	430	280	480	12,380
600–800	13,480	4,260	—	1,840	710	290	930	21,510
800–1,000	11,415	3,545	—	1,490	590	160	820	18,020
1,000–1,500	22,480	6,915	—	3,550	1,110	250	1,650	35,955
1,500–2,000	16,775	5,220	—	3,500	820	120	1,270	27,705
2,000–2,500	13,130	3,985	—	3,080	620	70	990	21,875
2,500–3,000	10,890	3,225	—	2,790	500	50	810	18,265
3,000–4.000	18,260	5,010	—	5,010	810	60	1,320	30,470
4,000–5,000	14,330	3,600	—	4,300	590	30	980	23,830
5,000–6,000	12,340	2,820	—	3,780	470	20	780	20,210
6,000–8,000	18,055	3,970	—	5,920	660	20	1,120	29,745
8,000–10,000	13,450	2,715	—	4,460	450	10	770	21,855
10,000–15,000	22,835	4,510	—	8,320	760	20	1,300	37,745
15,000–20,000	13,320	2,490	—	5,180	420	10	720	22,140
20,000–30,000	14,450	2,590	—	5,860	430	10	750	24,090
30,000–50,000	13,135	2,205	—	5,460	380	—	650	21,830
50,000–100,000	13,940	2,360	—	6,870	400	—	700	24,270
100,000 and over	12,090	1,930	—	7,920	340	—	580	22,860
Total . .	286,780	73,475	59,045	84,790	13,320	4,210	17,910	539,530

Table 30 gives the results of the previous chapters. For analytical purposes seven kinds of direct taxes are distinguished, income tax on personal incomes and surtax, income tax on non-personal incomes, social insurance contributions by workers (and similar payments in lieu of them), death duties, stamp duties on the transfer of property,

[1] Taxes paid by the government are cancelled in the government accounts; taxes paid by residents abroad are included in government income.

stamp duties on cheques, receipts, and life policies, paid by individuals, and N.D.C. The last column shows all direct taxes distributed between income groups.

The same set of figures is shown, in the form of cumulative percentages, in Table 31. It can be seen that persons with incomes over £10,000 paid 28 per cent. of all direct taxes, those with incomes over

TABLE 31. *Direct taxes (cumulative distribution)*

Incomes	*Income tax and surtax*		*Social insurance contributions, &c.*	*Death duties*	*Stamp duties on transfer of property, &c.*	*Duties on cheques, receipts, &c.*	*N.D.C.*	*Total*
	Personal	*Non-personal*						
£	%	%	%	%	%	%	%	%
Over £0 .	100·0	100·0	100·0	100 0	100·0	100·0	100·0	100·0
125 .	100·0	98 6	50·2	99 8	95·6	91·2	99 6	94·1
150 .	99·9	98·0	33 9	99·6	94·4	89·1	99·4	92·1
175 .	99·5	97·4	20 2	99·4	92 7	87·2	99·1	90 2
200 .	99·0	96·8	12·2	99·2	91·1	85 8	98·8	88·9
250 .	97·8	95·8	3·6	98·4	88·8	73·9	98·1	86 9
300 .	96·5	94 0	1·2	97·6	86·5	56·8	97·3	85·4
400 .	93·9	90 4	—	96 1	82·4	40 9	95·3	82·9
500 .	91·3	87 0	—	94·8	78 9	33 5	92·9	80·6
600 .	88·6	83 5	—	93·6	75 7	26·8	90·2	78·3
800 .	83·9	77·7	—	91·4	70·4	19·9	85 0	74 3
1,000 .	79·9	72 9	—	89·6	66·0	16·1	80·4	71·0
1,500 .	72·1	63·5	—	85·4	57·7	10·2	71 2	64 3
2,000 .	66·3	56 3	—	81·3	51 5	7·3	64·1	59·2
2,500 .	61·7	50 9	—	77 7	46 8	5 6	58 6	55·1
3,000 .	57·9	46·5	—	74·4	43 0	4 4	54·1	51·7
4,000 .	51 5	39·7	—	68·5	36·9	3·0	46·7	46·1
5,000 .	46·5	34 8	—	63 4	32·5	2·3	41·2	41·7
6,000 .	42 3	31·0	—	58 9	29 0	1 8	36·8	38·1
8,000 .	36·0	25 6	—	51 9	24·0	1·3	30·5	32·5
10,000 .	31 3	21·9	—	46·6	20 6	1·1	26·2	28·4
15,000 .	23·3	15·8	—	36·8	14·9	0·6	18·9	21·4
20,000 .	18 7	12·3	—	30 7	11·7	0·4	14 9	17 3
30,000 .	13 7	8 8	—	23·8	8 5	0·2	10·7	12·8
50,000 .	9·1	5·8	—	17·4	5·6	0 1	7·1	8 7
100,000 .	4·2	2 6	—	9·3	2 6	—	3·2	4 2

£3,000 paid 52 per cent., and those with incomes over £500 paid 81 per cent. Only 8 per cent. was paid by persons with an income of £150 or less.

These two tables are given in a summary form in Table 32. It is shown in the lower table that death duties were the most progressive kind of direct tax, followed by income tax on personal incomes and surtax. Social insurance contributions, levied at a flat rate, are obviously a regressive proportion of income.[1] 87 per cent. of all direct

[1] Different conclusions would, of course, be reached if social insurance contributions were not regarded as a tax but, instead, social insurance services were regarded as a subsidized government service.

taxes was payable by persons with incomes over £250. Persons with incomes under £250 paid only 1·5 per cent. of death duties and 2 per cent. of income tax on personal incomes and surtax, and also 2 per cent. of N.D.C.

Finally, in Table 33, direct taxes are given in three categories. Direct taxes payable out of actual incomes include income tax on

TABLE 32. *Direct taxes (Summary)*

Range of incomes	*Income tax and surtax*		*Social insurance contributions, &c.*	*Death duties*	*Stamp duties on transfer of property, &c.*	*Duties on cheques, receipts, &c.*	*N.D.C.*	*Total*
	Personal	*Non-personal*						
£	£ mn.	£ mn.	£ mn.	£ mn.	£ mn.	£ mn.	£ mn.	£ mn.
Under £125	—	1·0	29·4	0·1	0·6	0·4	0·1	31 6
125–250	6·2	2·1	27 5	1·2	0·9	0·7	0·3	38 9
250–500	18·6	6·5	2·1	3·1	1·3	1·7	0·9	34·3
500–1,000	32·5	10 3	—	4·3	1·7	0·7	2·2	51·9
1,000–2,000	39·3	12·1	—	7·1	1 9	0·4	2·9	63·7
2,000–10,000	100 4	25 3	—	29·3	4·1	0·3	6 8	166·2
10,000 and over	89·8	16·1	—	39·6	2·7	—	4·7	152·9
TOTAL . .	286 8	73·4	59·0	84·7	13·2	4 2	17·9	539·5
Under £250	6·2	3 1	56·9	1·3	1·5	1 1	0·4	70·5
Over £250	280 6	70 3	2·1	83 4	11·7	3·1	17·5	469 0
	%	%	%	%	%	%	%	%
Under £125	—	1·4	49·8	0·1	4·6	9·5	0·5	5 9
125–250	2·2	2·8	46·8	1·4	6 8	16 7	1·7	7·2
250–500	6·5	8·8	3·4	3·7	9·8	40 4	5·0	6 3
500–1,000	11·4	14·1	—	5·1	12 9	16·7	12·3	9·6
1,000–2,000	13·6	16·5	—	8·4	14·4	9·5	16·2	11·8
2,000–10,000	35·0	34·5	—	34·6	31·1	7·1	38 0	30·8
10,000 and over	31·3	21 9	—	46·8	20·5	—	26·3	28·4
TOTAL . .	100 0	100 0	100·0	100 0	100·0	100·0	100·0	100·0
Under £250	2·2	4·2	96 6	1·5	11·4	26 2	2·2	13·1
Over £250	97·8	95 8	3 4	98 5	88 6	73·8	97 8	86·9

personal incomes, surtax, workers' contribution to social insurance, and stamp duties on cheques, receipts, and life insurance, payable by individuals. Direct taxes payable out of imputed incomes include income tax on non-personal incomes and N.D.C. Death duties and stamp duties on the transfer of property are not included in either category but given separately, since they fall on both actual and imputed incomes from property.

The same set of figures is summarized in Table 34. It is shown that 82 per cent. of direct taxes on actual (personal) incomes, 96 per cent. on imputed (non-personal) incomes, and 97 per cent. of taxes falling on both categories of income are paid by persons with incomes over £250.

The results given in Table 32 are represented in Fig. 5, which consists of seven rectangles corresponding to the different kinds of direct taxes. The area of each is proportional to the amounts of tax payable. The rectangles are then divided according to the amount of tax payable by the various income groups.

TABLE 33. *Direct taxes on actual and imputed income*

Range of incomes	*Direct taxes falling on*			
	Actual incomes	*Imputed incomes*	*Unadjusted producers' incomes*	*Total*
£	£'000	£'000	£'000	£'000
Under £125 . .	29,790	1,120	730	31,640
125–150 . .	10,030	510	330	10,870
150–175 . .	9,260	505	410	10,175
175–200 . .	6,255	505	390	7,150
200–250 . .	8,950	825	1,000	10,775
250–300 . .	5,750	1,490	1,000	8,240
300–400 . .	8,720	2,975	1,830	13,525
400–500 . .	7,875	2,945	1,570	12,390
500–600 . .	7,900	3,020	1,460	12,380
600–800 . .	13,770	5,190	2,550	21,510
800–1,000 . .	11,575	4,365	2,080	18,020
1,000–1,500 . .	22,730	8,565	4,660	35,955
1,500–2,000 . .	16,895	6,490	4,320	27,705
2,000–2,500 . .	13,200	4,975	3,700	21,875
2,500–3,000 . .	10,940	4,035	3,290	18,265
3,000–4,000 . .	18,320	6,330	5,820	30,470
4,000–5,000 . .	14,360	4,580	4,890	23,830
5,000–6,000 . .	12,360	3,600	4,250	20,210
6,000–8,000 . .	18,075	5,090	6,580	29,745
8,000–10,000 . .	13,460	3,485	4,910	21,855
10,000–15,000 . .	22,855	5,810	9,080	37,745
15,000–20,000 . .	13,330	3,210	5,600	22,140
20,000–30,000 . .	14,460	3,340	6,290	24,090
30,000–50,000 . .	13,140	2,855	5,840	21,830
50,000–100,000 . .	13,940	3,060	7,270	24,270
100,000 and over . .	12,090	2,510	8,260	22,860
TOTAL . . .	350,030	91,385	98,110	539,520

Direct taxes are expressed in a different way in Table 35, where taxes payable by the various groups are given in percentages of income—direct taxes on actual income as a percentage of actual income, direct taxes on imputed income as a percentage of imputed income, and direct taxes on unadjusted producers' income, and all direct

taxes, as a percentage of unadjusted producers' income. Percentages referring to all direct taxes are represented in Fig. 6. It is remarkable that above an income of £500 the curve, if drawn on a semi-logarithmic scale, approximates the straight line. Only 3 per cent. of incomes under £125 is paid in direct taxation, 5 per cent. of incomes of

TABLE 34. *Direct taxes on actual and imputed income (Summary)*

Range of incomes	*Direct taxes falling on*			
	Actual incomes	*Imputed incomes*	*Unadjusted producers' incomes*	*Total*
£	£ mn.	£ mn.	£ mn.	£ mn.
Under £125	29·8	1·1	0·7	31·6
125–250	34·5	2·4	2·1	38·9
250–500	22·3	7·4	4·4	34·3
500–1,000	33·2	12·5	6·0	51·9
1,000–2,000	39·7	15·0	9·0	63·7
2,000–10,000	100·7	32·1	33·4	166·2
10,000 and over	89·8	20·8	42·3	152·9
TOTAL . .	350·0	91·3	97·9	539·5
Under £250	64·3	3·5	2·8	70·5
Over £250	285·7	87·8	95·1	469·0
£	%	%	%	%
Under £125	8·5	1·2	0·7	5·9
125–250	9·9	2·6	2·1	7·2
250–500	6·4	8·1	4·5	6·3
500–1,000	9·5	13·7	6·1	9·6
1,000–2,000	11·3	16·4	9·2	11·8
2,000–10,000	28·8	35·2	34·1	30·8
10,000 and over	25·7	22·8	43·2	28·4
TOTAL . .	100·0	100·0	100·0	100·0
Under £250	18·4	3·8	2·8	13·1
Over £250	81·6	96·2	97·2	86·9

£300–400, 10 per cent. is reached at the level of £500, 20 per cent. at £1,000, 40 per cent. at £5,000, and 60 per cent. at £15,000. In the case of the largest incomes 100 per cent. is approached.[1]

The percentages paid out of actual incomes rise from the same level up to 60 per cent. and over, the percentages on imputed incomes show a similar graduation.

[1] The proportion of income paid in direct taxation is, obviously, dependent on the particular method chosen for the allocation of death duties. Cf. Ch. VIII.

The same set of figures is summarized in Table 36. Direct taxes came, on the average, to 12·2 per cent. of unadjusted producers' income, but whereas the proportion was 2·9 per cent. for incomes under £250, it was 24·1 per cent. for incomes over £250. The proportion is fairly constant under £250 but it rises rapidly above that level to

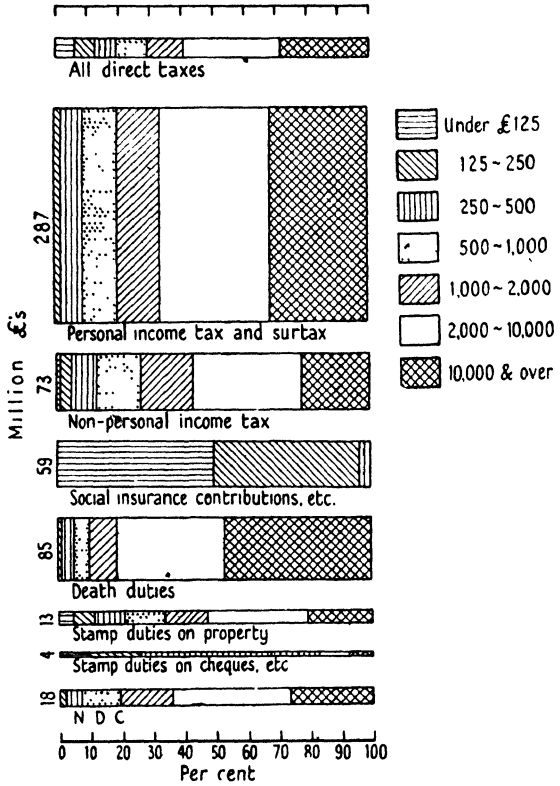


FIG. 5. Direct taxes.

69 per cent. for incomes of £10,000 and over. Of actual incomes over £10,000 just one-half was payable in direct taxation.

ii. AVAILABLE INCOME

The immediate aim of allocating direct taxes was to estimate the distribution of available income, that is, income available for private individuals or corporations to be spent on consumption or investment, both valued at market prices.

In Table 37 transfer expenditure by the government was added to producers' income. Nominal producers' income (that is, income in-

clusive of transfers) can be actual, imputed, or non-allocatable, corresponding to a similar classification of producers' income. Available income is obtained by omitting unallocatable income (public income) from nominal unadjusted producers' income (which is equal to the

TABLE 35. *The relative burden of direct taxes*

Range of incomes	*Direct taxes on actual income as proportion of actual income*	*Direct taxes on imputed income as proportion of imputed income*	*Direct taxes on unadjusted producers' income as proportion of unadjusted producers' income*	*All direct taxes as proportion of unadjusted producers' income*
£	%	%	%	%
Under £125	2·6	6·5	0·1	2·7
125–150	3·1	6·5	0·1	3·3
150–175	2·9	7·7	0·1	3·2
175–200	2·3	8·7	0·1	2·6
200–250	2·5	10·6	0·3	3·0
250–300	2·6	30·4	0·4	3·6
300–400	3·4	32·7	0·7	5·2
400–500	5·4	35·5	1·0	8·0
500–600	7·8	37·8	1·4	11·3
600–800	10·5	40·6	1·8	15·0
800–1,000	13·2	42·0	2·1	18·3
1,000–1,500	15·5	43·0	2·8	21·6
1,500–2,000	17·6	43·5	3·9	25·0
2,000–2,500	19·6	44·0	4·7	27·8
2,500–3,000	21·3	44·4	5·4	30·2
3,000–4,000	24·2	45·8	6·5	34·0
4,000–5,000	27·4	47·3	7·9	38·4
5,000–6,000	30·7	47·4	8·9	42·2
6,000–8,000	33·2	48·4	10·1	45·8
8,000–10,000	37·1	48·5	11·3	50·2
10,000–15,000	41·3	49·2	13·5	56·1
15,000–20,000	45·7	49·4	15·7	62·0
20,000–30,000	49·5	49·9	17·5	67·2
30,000–50,000	54·3	50·1	19·5	73·0
50,000–100,000	57·7	50·2	24·0	80·3
100,000 and over	63·0	51·3	34·3	94·9
TOTAL . .	8·4	37·4	2·2	12·2

sum of nominal actual and imputed producers' income), and then deducting direct taxes. Deducting direct taxes on actual income from nominal actual income, actual available income is obtained; deducting direct taxes on imputed income from imputed income, imputed available income is obtained. Total available income is obtained by deducting all direct taxes from nominal unadjusted income. It can be

seen that total available income is equal to the sum of actual and imputed available income less direct taxes falling on both categories of income (death duties and stamp duties on the transfer of property).[1]

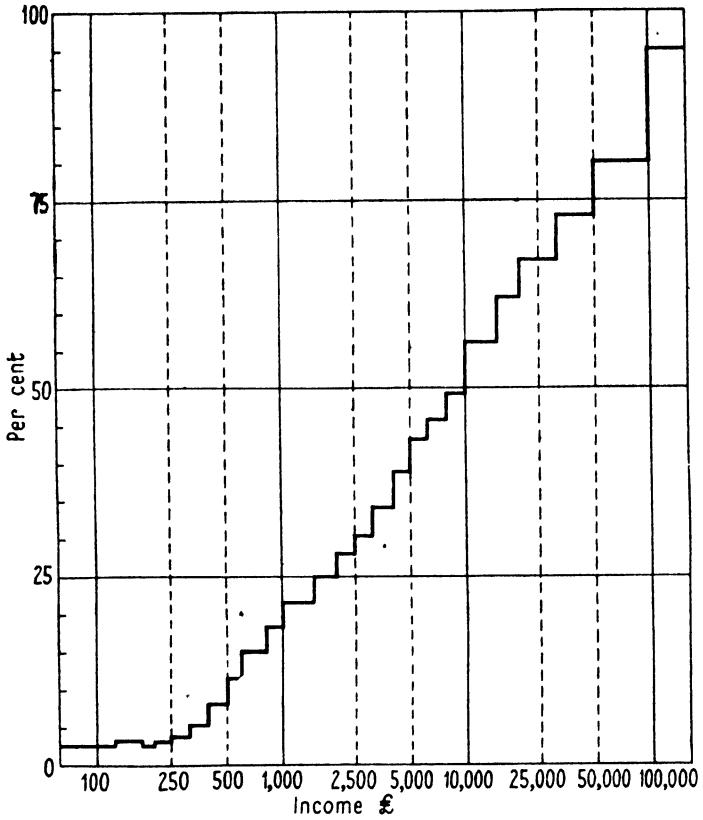


FIG. 6. Direct taxes as proportion of income.

Summary results are shown in Table 38 which gives, for seven income groups, the number of persons, producers' income, nominal producers' income, and available income; both actual and total incomes are given. The same set of figures is given in relative percentages. Finally, producers' and available income are given as percentages of nominal producers' income. It can be seen that 86 per

[1] Sum of producers' income = net national income. Sum of nominal producers' income = net national income + transfers. Sum of available income = net national income + transfers − public income − direct taxes = private consumption (at market prices) + private saving (at market prices).

TABLE 36. *The relative burden of direct taxes (Summary)*

Range of incomes	*Direct taxes on actual income as proportion of actual income*	*Direct taxes on imputed income as proportion of imputed income*	*Direct taxes on unadjusted producers' income as proportion of unadjusted producers' income*	*All direct taxes on proportion of unadjusted producers' income*
£	%	%	%	%
Under £125	2·6	6·5	0·1	2·7
125–250	2·7	8·6	0·2	3·0
250–500	3·6	33·6	0·7	5·3
500–1,000	10·4	40·4	1·7	14·8
1,000–2,000	16·4	42·9	3·2	23·0
2,000–10,000	26·7	46·5	7·5	37·2
10,000 and over	49·6	49·6	19·0	68·6
TOTAL . .	8·4	37·4	2·2	12·2
Under £250	2·7	7·8	0·1	2·9
Over £250	16·3	44·1	4·9	24·1

TABLE 37. *Available income, 1937*

(In million £'s)

Range of incomes £	*Nominal actual income*	*Imputed income*	*Nominal unadjusted income*	*Actual available income*	*Imputed available income*	*Total available income*
Under £125	1,390·6	16·8	1,407·4	1,360·8	15·7	1,375·8
125–150	338·7	7·8	346·5	328·7	7·3	335·6
150–175	330·8	6·6	337·4	321·5	6·1	327·2
175–200	279·5	5·8	285·3	273·2	5·3	278·1
200–250	360·9	7·8	368·7	351·9	7·0	357·9
250–300	226·1	4·9	231·0	220·3	3·4	222·8
300–400	254·6	9·1	263·7	245·9	6·1	250·2
400–500	145·8	8·3	154·1	137·9	5·4	141·7
500–600	101·3	8·0	109·3	93·4	5·0	96·9
600–800	130·5	12·8	143·3	116·7	7·6	121·8
800–1,000	87·9	10·4	98·3	76·3	6·0	80·3
1,000–1,500	146·3	19·9	166·2	123·6	11·3	130·2
1,500–2,000	95·9	14·9	110·8	79·0	8·4	83·1
2,000–2,500	67·5	11·3	78·8	54·3	6·3	56·9
2,500–3,000	51·4	9·1	60·5	40·5	5·1	42·2
3,000–4,000	75·6	13·8	89·4	57·3	7·5	58·9
4,000–5,000	52·4	9·7	62·1	38·0	5·1	38·3
5,000–6,000	40·3	7·6	47·9	27·9	4·0	27·7
6,000–8,000	54·4	10·5	64·9	36·3	5·4	35·2
8,000–10,000	36·3	7·2	43·5	22·8	3·7	21·6
10,000–15,000	55·4	11·8	67·2	32·5	6·0	29·5
15,000–20,000	29·2	6·5	35·7	15·9	3·3	13·6
20,000–30,000	29·2	6·7	35·9	14·7	3·4	11·8
30,000–50,000	24·2	5·7	29·9	11·1	2·8	8·1
50,000–100,000	24·2	6·1	30·3	10·3	3·0	6·1
100,000 and over	19·2	4·9	24·1	7·1	2·4	1·2
TOTAL . . .	4,448·1	244·0	4,692·1	4,098·0	152·6	4,152·8

TABLE 38. *Actual and total income*

Range of incomes	*Number of persons*	*Actual incomes*			*Actual incomes*			*Actual incomes*		
		Producers	*Nominal producers*	*Available*	*Producers*	*Nominal producers*	*Available*	*Producers*	*Nominal producers*	*Available*
£	Thousands	£ mn.	£ mn.	£ mn.	%	%	%	%	%	%
Under £125	21,800	1,159	1,391	1,361	27·8	31 2	33 2	83·3	100·0	97·8
125–250	18,750	1,262	1,310	1,275	30·3	29·4	31·1	96·4	100·0	97·3
250–500	4,816	624	627	604	15·0	14·1	14·7	99·5	100·0	96·4
500–1,000	1,209	320	320	286	7·7	7·2	7 0	100 0	100·0	89·7
1,000–2,000	451	242	242	203	5·8	5·4	4·9	100·0	100·0	83·5
2,000–10,000	258	378	378	277	9·1	8 5	6 8	100·0	100·0	73·2
10,000 and over	22	181	181	92	4·3	4·1	2·2	100·0	100·0	50·3
TOTAL . .	47,300	4,166	4,448	4,098	100 0	100·0	100·0	93 8	100·0	92·3
Under £250	40,550	2,421	2,700	2,636	58·1	60·6	64·4	89·7	100·0	97·8
Over £250	6,750	1,745	1,748	1,462	41·9	39·4	35·6	99 8	100·0	83·6

Range of incomes	*Number of persons*	*Total incomes*			*Total incomes*			*Total incomes*		
		Producers	*Nominal producers (unadjusted)*	*Available*	*Producers*	*Nominal producers (unadjusted)*	*Available*	*Producers*	*Nominal producers (unadjusted)*	*Available*
£	%	£ mn.	£ mn.	£ mn.	%	%	%	%	%	%
Under £125	46 1	1,172	1,407	1,376	26·9	30·0	33·1	83 3	100·0	97·7
125–250	39 6	1,284	1,338	1,299	29·5	28 5	31·3	96 0	100·0	97·1
250–500	10·2	640	649	615	14·7	13·8	14·8	98·6	100·0	94·8
500–1,000	2·6	344	351	299	7 9	7·5	7·2	98·0	100 0	85·2
1,000–2,000	1·0	270	277	213	6 2	5·9	5 1	97·5	100·0	76·9
2,000–10,000	0·5	433	447	281	9 9	9·5	6 8	96·9	100 0	62·9
10,000 and over	0·05	215	223	70	4·9	4·8	1 7	96·4	100·0	31·4
TOTAL . .	100·0	4,356	4,692	4,153	100·0	100 0	100·0	92·8	100 0	88·5
Under £250	85·7	2,456	2,745	2,675	56 4	58·5	64·4	89·5	100 0	97·4
Over £250	14·3	1,901	1,947	1,478	43·6	41·5	35·6	97·6	100·0	75·9

cent. of the population was included in the groups under £250, but they only had 56½ per cent. of producers' income (58 per cent. of actual income). This proportion was raised to 58½ per cent. by the allocation of transfers (60½ per cent. for actual income), and 64½ per cent. after allowing for direct taxes (64½ per cent. for actual income).

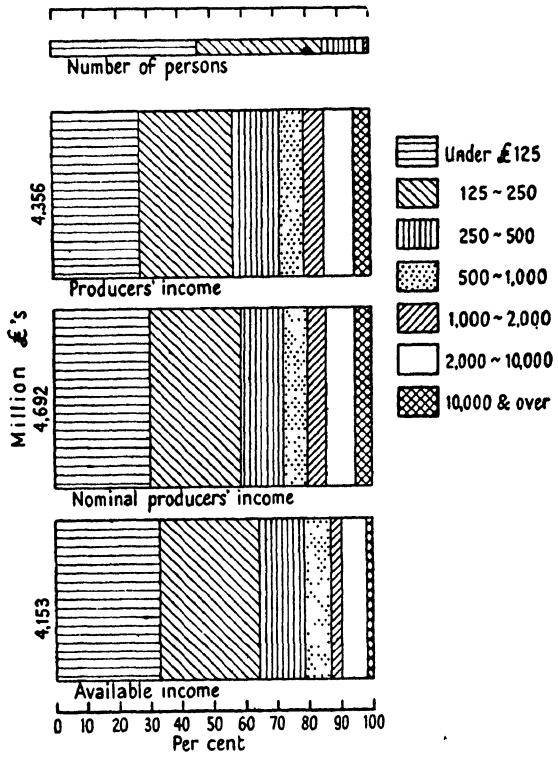


FIG. 7. Available income.

It can also be seen that available income as a proportion of nominal producers' income is 97–98 per cent. for the groups under £250, 95 per cent. for the group with incomes of £250–500, 85 per cent. for the group with incomes of £500–1,000, and gradually falls to 31 per cent. for incomes over £10,000.

Producers', nominal producers', and available incomes are represented in Fig. 7. The bar on the top represents the relative distribution of the number of persons. The areas are proportional to income and are divided according to income groups.

The same facts are exhibited, in a different arrangement, in Fig. 8. Each income group is represented by a column proportional to nominal producers' income. The columns are divided into producers'

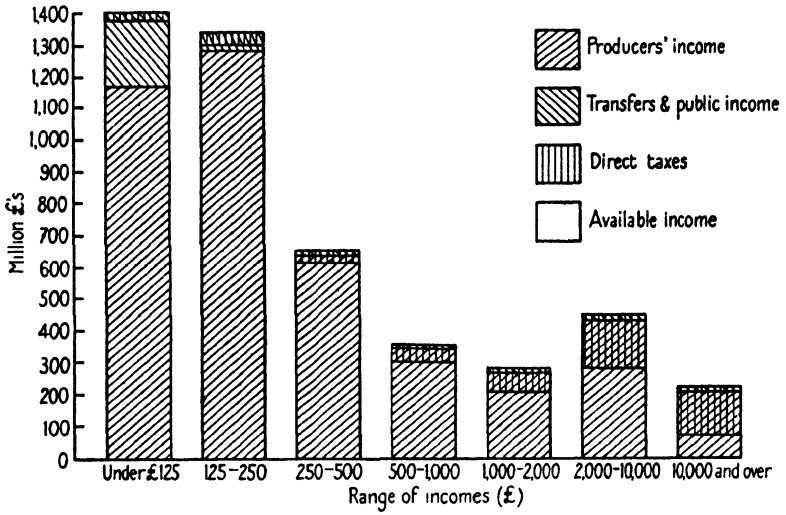


FIG. 8. Income and direct taxes

income and transfers on the one hand, and into direct taxes and available income on the other.[1]

iii. REDISTRIBUTION BY TRANSFERS AND DIRECT TAXES

Until redistribution is more fully discussed in Ch. XVII it can be assumed that redistribution of income by transfer or by direct taxes can be measured by the divergence from an hypothetical distribution of transfers or of direct taxes proportional to the distribution of producers' income. In Table 38, for instance, redistribution by direct taxes can be measured by taking available income as a percentage of nominal producers' income for each income class and by taking deviations from the average.

Redistribution is graphically exhibited in Fig. 9. The areas are proportional to transfers paid to (or direct taxes paid by) the various income classes.[2] The base of each rectangle is proportional to producers' income. Consequently, the hypothetical distribution, propor-

[1] The first division is represented by diagonal, the second by horizontal-vertical shading. It can easily be seen that Fig. 8 can be geometrically derived from Fig. 7 and that there is proportionality between corresponding areas in the two diagrams.

[2] The diagram relating to direct taxes can be geometrically derived from Fig. 5.

tional to the distribution of producers' income, can be represented by the rectangle shown in broken line. Redistribution is represented by the shaded areas falling above or below the broken line, which is so arranged that areas representing positive and negative redistribution cancel.

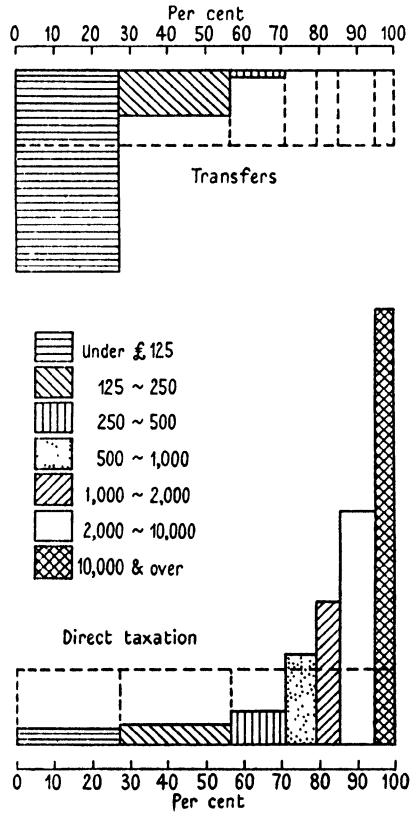


FIG. 9. Transfers and direct taxes.

The classes under £250 received 56·4 per cent. of producers' income, but received 99·1 per cent. of transfers and paid 13·1 per cent. of direct taxes. Hence of all transfers they received 42·7 per cent. more, and of all direct taxes paid 43·3 per cent. less than the amount proportionate to their income. This amounts to £120 mn. of transfers and £234 mn. of direct taxes.

XI

INDIRECT TAXES

i. The administrative sources of indirect taxes

From the administrative point of view indirect taxes consist of Customs and Excise duties, local rates, and tolls, &c., motor vehicle duties,[1] part of social insurance contributions,[2] part of stamp duties,[3] the net profits of the Post Office and of broadcasting, and the receipts of the Wheat Fund. These items brought in £642 mn., to which must be added the cost of workmen's compensation[4] and, owing to the complexity of sugar duties, the excess of the increase in the cost of sugar to the consumer over receipts of sugar duty.[5] The total of £664 mn. was divided in the following way.

Table 39. *The administrative sources of indirect taxation, 1937*

	£ mn.
Customs and Excise duties	334·9
Local rates, and tolls, &c.	200·5
Motor-vehicle duties	35·0
Social insurance contributions	51·8
Stamp duties	6·1
Post Office and broadcasting net profit	11·9
Wheat Fund receipts	1·6
Workmen's compensation	13·0
Excess sugar duty	8·9
Total	663·7

Note. Receipts in Northern Ireland are included under the appropriate headings. Customs and Excise duties include certain licence duties collected in England and Wales (but not elsewhere) by the Post Office on behalf of local authorities. To local rates were added tolls, &c., collected by local authorities in Scotland. The Post Office and broadcasting net profit are derived from the relevant commercial accounts and are not necessarily identical with the amount received by the Exchequer.

Though indirect taxes are collected by a number of different authorities in a number of different ways,[6] they are essentially a single body of taxes: they are taxes on particular goods and services, in contrast to direct taxes levied chiefly with reference to income and

[1] Collected locally on behalf of the central government.

[2] The rest is included in direct taxes in Ch. VII.

[3] Collected by the Inland Revenue. The remainder is included in direct taxes in Ch. IX.

[4] See p. 82, above.

[5] Equivalent to an invisible subsidy to growers of sugar at home and abroad. See p. 142.

[6] £388 mn. has been collected by the Exchequer, £201 mn. by local authorities, and £75 mn. otherwise.

capital. The amount of indirect taxes falling on an individual or family is not determined, like direct taxes, with reference to income and capital alone, but also depends on the expenditure pattern of the individual or family. For example, a smoker pays more in indirect taxation than a non-smoker with the same income. The estimate of the amount of indirect taxes borne is, therefore, always for an average or typical individual and family.

How far the average can also be regarded as *typical* must depend on the variations round this average. These variations may be small, as in the case of sugar and tea consumption, or large, as in the case of alcohol and tobacco. For our purposes only the totals of tax payments in any income group, based on averages, are needed and variations round these averages can be disregarded. But to assess the significance of the results, possible variations round the average must be kept in mind, especially when considering the equity of the tax system.[1]

ii. The incidence of indirect taxes

Indirect taxes are assumed to raise prices by their amount and by no more. This is so if the supply of the commodities or services taxed is elastic relatively to their demand. It has been proved by statistical analysis that the demand for certain commodities, e.g. sugar, tea, alcohol, and tobacco, is inelastic.[2] This is likely to be the case of all Customs and Excise duties,[3] but more will be said below on the incidence of protective duties. As to duties on motoring, the demand of the classes who use cars is likely to be inelastic, but there has been a *potential* elastic demand in the poorer classes.[4] In any case, it can be safely assumed that supply was elastic relatively to demand.

The incidence of local rates constitutes a more difficult problem. Incidence might be on the occupier (i.e. the consumer), the owner, or the builder, &c.[5] The local and individual variations in the condi-

[1] e.g. out of incomes £150–200, say, 12 per cent. was paid in indirect taxation. This figure might conceal the fact that persons with children paid, say, 8 per cent. and single persons, whose consumption of alcohol and tobacco might be heavier, 20 per cent. In this case our opinion as to equity could be different if we knew the details on which the average was based.

[2] Cf. G. V. Edelberg, 'Flexibility of the Yield of Taxation', *Journal of the Royal Statistical Society*, 1940, Part II.

[3] Except special duties on goods from Eire. See p. 145, below.

[4] The weekly cost of a small car, 20–25*s.* in 1937, was prohibitive to a wide range of persons who, however, could have afforded a car at the weekly cost (excl. tax) of 10–15*s.* (It can be argued, on the other hand, that motor taxation pays for expenditure on roads and its absence would have been equivalent to a subsidy.)

[5] Cf. J. R. Hicks and U. K. Hicks, 'An Economic View of Rating Reform', *Public Administration*, July–Sept. 1941.

tions which affect rates are so wide and complex that it is difficult to generalize. It is thought that in the particular circumstances of the period between the two wars, chiefly because of the housing shortage, the incidence of rates was on the occupier.[1] This assumption, which corresponds to the general assumption that the incidence of indirect taxes is on the consumer, will be accepted, but it could be alternatively assumed that the incidence is on the owner.[2]

There is, however, one important qualification to the above argument, concerning protective duties, which is difficult to put into quantitative terms.[3] Protective duties, defined in a narrow sense, became important only in the thirties, when they amounted to about 15 per cent. of Customs and Excise duties.[4] But in the strict sense of the term the bulk of Customs duties was protective, protecting, if not home, then Empire producers against foreign competition. Generally speaking, the 'burden' on the consumer of most types of Customs duties is greater than Exchequer receipts.[5] If the home price of any commodity is determined by the world price and a tariff is imposed on imports without a corresponding Excise duty, the home producer is able to raise his prices, imposing an extra burden on the consumer not reflected in Exchequer receipts.

The actual situation, which can be illustrated by the case of the sugar duty, is more complex. The full rate of the duty on sugar, 1*d.* per lb., was levied on foreign produce only. Empire sugar received preference and colonial sugar an additional preference. Home-produced sugar was taxed at the lowest rate and was, in addition, subsidized.[6] The price of sugar being determined in the world market the full rate of the duty entered into the price; the consumer paid 1*d.* extra per lb. The difference between the full and preferential rates of duty, if home-produced or Empire sugar was bought, benefited producers at home or in the Empire.

Sugar is an homogeneous commodity the price of which is deter-

[1] Cf. U. K. Hicks, *The Finance of the British Government*, pp. 267–8.

[2] The two assumptions lead to the same result in the case of owner-occupiers.

[3] It is usual to divide Customs duties into revenue and protective duties. Revenue duties are those on commodities which cannot be produced at home for physical reasons, e.g. tea, or for which there is a corresponding Excise duty.

[4] Protective duties consisted of McKenna (1915), Key Industries (1921), Silk (1925), Import Duties Act (1932), Ottawa (1932), Beef and Veal (1936), and Goods from Eire (1932–8) duties. The peak in receipts, £56 mn., has been reached in 1937–8.

[5] This is so apart from the 'announcement effect', defined on p. 12.

[6] The protection given to refinement at home can be neglected since almost all sugar was imported raw.

mined in the world market, and hence it was possible to estimate the amount of the extra burden involved and take account of it in the calculations. But in no other case has this been possible for several reasons. The commodity may not be homogeneous, e.g. China tea paying the full rate is different from Indian tea paying the preferential rate. Moreover, in the case of purely protective duties, it is argued that the protection afforded to home and Empire producers is due to other than fiscal reasons and should not be taken into account in inquiries like the present one. It is admitted that a line must be drawn somewhere between taxation proper and other government actions because all government actions, e.g. Factory Acts, minimum wage legislation, &c., affect the distribution of incomes; but the financial impact of some kinds of protection is too immediate to be ignored and the reasons for their being ignored here is chiefly due to a lack of statistical investigations tracing price changes caused by protective tariffs. It should be borne in mind, therefore, that in certain cases the figures to be calculated show a minimum burden.[1]

iii. Economic classification

Indirect taxes can be divided into taxes specifically on consumption and taxes on production in general.[2] Indirect taxes are levied with reference to physical or value units of particular goods or services; hence it could be ascertained how far the market price of any final commodity or service reflects indirect taxes. Difficulty is caused by the complexity of production because it is almost impossible to trace taxes levied on producers' goods or services in the price of the final goods or services. From the point of view of determinateness the entertainments duty is the ideal tax since its rate is fixed in relation to the retail price of the service. In other cases the duty is paid at earlier stages of production, e.g. the duties on sugar, tea, alcohol, and tobacco, but it can be related to the retail price of the commodity easily if allowance is made for wastage in production and so forth.

Let us consider a piece of clothing containing some silk or artificial silk. After allowing for wastage in production, the quantity of silk used, and hence the tax thereon, can be ascertained. But other indirect taxes also fall on that particular piece of clothing; for instance, rates are paid on the factory, warehouse, and shop through which the commodity

[1] For some estimates of the value of Empire preference cf. F. Benham, *Britain under Protection*, pp. 81–4 and 90.

[2] This division was followed in the White Papers on national income and *The Burden of British Taxation*. The division adopted here is, in all but details, the same.

passes, licence duty is paid on the lorry in which it is carried and duty paid on the petrol the lorry uses, and employers in the factory, warehouse, and shop contribute to social insurance. All these indirect taxes are reflected in the price, but it is impossible to estimate their amount without certain assumptions. For instance, it must be assumed that the duty on a lorry enters into the price of the commodities carried in proportion either to their value or weight. This uncertainty in allocation distinguishes indirect taxes on production in general from those on consumption. Another characteristic is that indirect taxes on production enter into the prices of all commodities and services, with only a few exceptions.[1]

The following table sets out indirect taxes according to commodities and services on which they are levied:

TABLE 40. *Indirect taxes, 1937*

(In million £'s)

Food	52·6
Alcoholic drinks	113·7
Smoking	83·2
Housing	135·0
Matches used by households	2·2
Domestic service	4·1
Private motoring	35·4
Other travel by road	11·3
Entertainments	8·3
Postal services and wireless	4·6
Patent medicine, game and dog licences, &c.	2·2
Silk and artificial silk	6·5
Other clothing	2·3
Pottery, glassware, cutlery, and clocks	1·6
Miscellaneous imported goods	3·6
Indirect taxes specifically on consumption	*466·6*
Stamp duties	6·1
Social insurance contributions	60·7
Rates on business premises	61·6
Motor and petrol duties on business	39·6
Postal services used by business	7·4
Tolls and licences	1·8
Miscellaneous imported goods	16·2
Indirect taxes on production in general	*193·4*
Taxes specifically on government consumption	3·6
TOTAL	663·7

[1] The exceptions are services where the seller has no business cost, such as services of civil servants, Forces, and domestic servants. (This refers to cash payments for these services only, for tax does enter into payments in kind.)

Taxes on food include Customs and Excise duties on food and non-alcoholic drinks (inclusive of protective duties on imported food or animal feeding stuff), Wheat Fund receipts, and the invisible sugar subsidy. Duty on sugar used by breweries is excluded here and included in taxes on alcoholic drinks. 1½ per cent. of all food duties is deducted as the estimated share of food consumption paid by the government and supplied to the Forces or to hospitals and Public Assistance institutions. Customs and Excise receipts are published for the fiscal year, but in the case of certain commodities, e.g. tea and sugar, consumption is officially estimated for both calendar and fiscal years; therefore receipts can easily be adjusted for the calendar year. Receipts of other duties were estimated by taking into account the trend of changes since the preceding fiscal year.

The invisible sugar subsidy was calculated with reference to the difference between full and preferential rates of duty and quantities of sugar of different origin consumed. The quantity of sugar used by breweries is officially estimated. The following estimates were obtained:

	£'000	£'000
Sugar		19,760
Total receipts	11,770	
Invisible subsidy	8,850	
less Consumption by breweries	—860	
Tea		7,550
Cocoa		870
Coffee		140
Dried fruits		740
Table waters and refreshment licences		340
I.D.A. duties		6,620
Ottawa duties		7,960
Beef and Veal duties		3,560
Goods from Eire		4,230
Wheat Quota payments		1,600
TOTAL		53,370
less Government consumption		—800
TOTAL		52,570

Revenue duties received were £20·6 mn., pure protective duties £23·9 mn. Special duties on goods from Eire (almost exclusively on food) could have been omitted because the effect of these duties might have been not to raise the price to the British consumer but to cause a decrease in imports from Eire and to shift the tax on actual imports to producers in Eire.

Taxes on alcoholic drinks consist of Customs and Excise duties on alcoholic drinks, duties on hops and sugar used in the manufacture of beer, licence duties on the manufacture and sale of alcoholic drinks, and duties on monopoly values and clubs. Customs and Excise duties are adjusted for the calendar year with reference to consumption estimated in the report. The detailed figures are the following:

	£'000	£'000
Duties on beer	65,540	
Hops used in beer	180	
Sugar used in beer	860	
Beer		66,580
Spirits: Home made	31,670	
Imported	4,920	
Spirits		36,590
Wine (imported)		5,120
British wine, cider, &c.		500
Licences on manufacture and sale		4,370
Licences on monopoly values and clubs		540
TOTAL		113,700

Taxes on smoking consist of the tobacco duty, licence duties on the manufacture and sale of tobacco, and duty on matches and lighters used by smokers. Since the consumption of tobacco was rapidly increasing receipts for the fiscal year were £2·1 mn. more than for the calendar year. The whole duty on lighters was imputed to smokers; the duty on matches is divided below between use by smokers and households. The tariff on imported pipes was added and the following figures obtained:

	£'000
Duty on tobacco	80,680
Licence duties	140
Duties on matches and lighters used by smokers	2,360
Import duty on pipes	50
TOTAL	83,230

Taxes on housing consisted of local rates. Receipts in the United Kingdom were £199·1 mn. The greater part was levied on dwellings, the smaller part on business premises, such as factories, railways, cinemas, offices, and shops. The exact division of this rather important tax is not known. The proportion not on dwellings has fallen since the Derating Act, 1929, exempting agricultural land and giving three-quarter exemption to 'productive industry' and railways. The exact amounts falling on 'productive industry' and railways are known, but these form a small proportion of all rates on business. In *The Burden of British Taxation* and in C. Clark, *National Income and Outlay*, rates on dwellings and business are divided in the proportion of 2 to 1. On this basis rates on dwellings would come to £132·7 mn., but in preference to this figure £135 mn. was taken with regard to the estimated expenditure on the rent of dwellings.

The *duty on matches* came to £4,240,000, on lighters £135,000. In recent years home-produced matches paid duty at a lower rate because imported timber, which paid duty, has been used. On account of this import duty £190,000 was added, making match duty £4,430,000. It was assumed that the whole duty on lighters falls on smokers. The weekly number of matches consumed was 2,600 millions, and if all smokers used

matches they would have consumed 1,540 millions. If all households used two boxes per week, household consumption was 1,300 millions. Since lighters were attributed to smokers it is reasonable to estimate that match consumption was divided equally between households and smokers.

The *duty on domestic service* consisted of social insurance contributions by employers (both their own contributions and those made on behalf of their employees). (See p. 103, above.)

Duties on motoring consisted of licence duties, £35·0 mn., duties on petrol, £49·6 mn., and McKenna duties on imported cars, £1·7 mn., which gives the total of £86·3 mn. (Duties for the fiscal year would be more by £1·1 mn.) In *The Burden of British Taxation*, p. 182, approximately the same amount is divided between three different uses, which division applied to our total would be the following:

	£ *mn.*
Private motoring	35·4
Buses and taxis used by private persons	11·3
Taxes on business	39·6
TOTAL	86·3

Duties on entertainment include the entertainments duty collected by the Customs and Excise and the Northern Ireland government (£8·1 mn.) and duty on imported cinematograph films (£0·2 mn.).

The *duty on postal services and wireless* includes the Post Office and broadcasting profits. The former was, according to the Post Office commercial accounts, £11,230,000, the latter £660,000. The total of £11·9 mn. was divided between private and business use. The whole wireless surplus has been imputed to private expenditure. Private expenditure on postal services was obtained from family budgets and the share in profits calculated with reference to rates of profits estimated from the Post Office accounts. These were, for 1937–8, 22·1 per cent. of postal receipts, and there was a loss of 0·1 per cent. on telephone and telegraph receipts. On this basis, £3·8 mn. was due to private and £7·4 mn. to business expenditure. £140,000 import duties on wireless sets were added to the wireless surplus.

The duty on *silk and artificial silk* includes an amount levied under the I.D.A. Duties on *clothing* (other than silk), on *pottery, glassware, cutlery, and other imported consumption goods* were levied under the McKenna, I.D.A., or, to a very small extent, Ottawa Acts. Duties on food, timber for matches, silk, pipes, cars, cinematograph films, and wireless sets levied under these Acts were already included in other items. The remaining items were divided between taxes specifically on consumption and on production in general. All taxes on imported textiles and most of those on pottery, glassware, cutlery, and clocks were specifically on consumption. The rest, together with Key Industry duties, was regarded as being on production; the majority of the goods taxed were used early in the

productive processes (e.g. metal, timber, or building materials), and enter into the price of most goods.

For stamp duties see Ch. IX and for social insurance contributions Ch. VII. The government is estimated to have paid £0·3 mn. I.D.A. duties, £0·8 mn. food duties, and £2·5 mn. in lieu of rates.

The definition of indirect taxes on production in general differs from the one in *The Burden of British Taxation* in the following respects.[1]

Here the cost of workmen's compensation (£13 mn.) and protective duties falling on production (£16·3 mn.) are included.[2] Further differences are due to a different division of stamp duties and the Post Office net revenue between private and business expenses, and to the exclusion of employer's contribution by the government and for domestic servants.

[1] In the White Paper, Cmd. 6347, 1942, the same definition is implied as in the latter and the figures are consistent.

[2] The White Paper, Cmd. 6438, 1943, uses a more inclusive definition than the previous one, Cmd. 6347, 1942. It seems to include all protective duties except those on food. See also Cmd. 6564, Table 38.

XII

INDIRECT TAXES SPECIFICALLY ON CONSUMPTION

In this chapter the distribution of indirect taxes specifically on consumption is estimated. Such taxes, falling on private incomes, came to £466·6 mn. and are given on p. 144. The distribution of actual available income is given in Tables 37 and 38; actual available incomes are spent on consumption (at market prices) or saved.

The best approach is to start with the division of available income into expenditure on the consumption of various goods and services, and saving, which is estimated in Table 41. If the distribution of taxes takes the whole distribution of expenditure into consideration, instead of considering each taxed commodity separately, the margin of error in the estimates is necessarily reduced because available income for each class and national expenditure on each commodity or service have been independently estimated.[1] This approach affects particularly the distribution of taxes on alcoholic drinks, tobacco, and of local rates, since a fairly large proportion of available income is spent on drink, tobacco, and rent, and since the rate of duty on these items is high.[2]

Initially five major groups are taken into consideration, as given below:

Income	*Number of persons*	*Actual available income*	*Total available income*[3]
£	Thousands	£ mn.	£ mn.
Under 125	21,800	1,361	1,376
125–250	18,750	1,275	1,299
250–500	4,816	604	615
500–1,000	1,209	286	299
1,000 and over	731	572	564
TOTAL	47,300	4,098	4,153

[1] In technical language, by this approach the degree of freedom in the estimated distribution of taxes is reduced. There is reason to assume that the amounts of indirect taxes allocated to the lowest incomes in *The Burden of British Taxation*, each tax estimated separately, are in the total inconsistent with that level of income.

[2] It should be remembered throughout the calculations leading to Table 41 that all these are subsidiary to the distribution of indirect taxes and, though satisfactory for this purpose, they are not as accurate as they could be if the aim had been to estimate the distribution of expenditure.

[3] Total available income consists of actual and imputed available income less death duties, &c.

i. The distribution of personal expenditure

Data on the food expenditure of all classes were collected by Crawford and Broadley in 1936–7.[1] The population was grouped in five classes, closely corresponding to the five income classes used here. Average expenditures by persons in the different classes, on food consumed at home, excluding a small amount spent on alcoholic drinks, were the following:

Class	*Weekly expenditure*	*Annual expenditure*
	s. *d.*	£
AA	18 2	47·2
A	15 10	41·2
B	12 4	32·1
C	7 11	20·6
D	5 10	15·2

The first four classes correspond to the income groups £1,000 and over, £500–1,000, £250–500, and £125–250, respectively; class D accounted for 15 per cent. of the population, but the class under £125 for 47 per cent. because it included a great number of supplementary earners belonging to class C. On this basis average annual expenditure on food by persons under £125 was £18·8.[2] The following table shows average annual expenditure in the different groups, the number of persons (including domestic servants living in),[3] and total expenditure on food in each group. Weekly expenditure *per income* on meals taken out was estimated as 1*s.*, 1*s.* 6*d.*, 2*s.* 6*d.*, 8*s.*, and 15*s.* for the respective income groups.[4]

Range of incomes	*Average expenditure*	*Number of persons*	*Food expenditure*		
			At home	*Meals out*	*Total*
£	£	Thousands	£ mn.	£ mn.	£ mn.
Under 125 . .	18·8	21,800	410	25	435
125–250 . .	20·6	18,750	386	29	415
250–500 . .	32·1	5,050	162	12	174
500–1,000 . .	41·2	1,500	62	10	72
1,000 and over .	47·2	1,500	71	11	82
TOTAL . .	—	—	1,091	87	1,178

The difference between the £1,178 mn. estimated here and the national food expenditure of £1,110 mn.[5] consists of £20 mn. food

[1] Sir W. Crawford and H. Broadley, *The People's Food.*

[2] Average expenditure in classes C and D were weighted in the proportion of 2 to 1.

[3] The average expenditures shown take domestic servants into account.

[4] Estimated from the Ministry of Labour working-class and Mr. P. Massey's middle-class budgets.

[5] For all national expenditure figures cf. Table 7.

consumed by domestic servants and £48 mn. services rendered by restaurants. The former amount has been included twice, as expenditure by employers on domestic service and as expenditure on food by domestic servants; the latter amount is included in expenditure on meals taken out.[1]

No reliable data exist as regards expenditure on drink and tobacco because family budgets, without exception, understate expenditure under this heading to a considerable extent.[2] The most informative data are based on the personal observations of certain investigators, supplemented by some information of a statistical nature.[3]

Expenditures on both drink and tobacco have been estimated in *The Burden of British Taxation* for two or three income groups and for different types of consumers, heavy, moderate, and light. These estimates have been accepted, but used in a somewhat different manner. For both drink and tobacco average consumption at different levels of income has been estimated instead of using the estimate for the moderate consumer.[4] Also, consumption at low levels of income has been put at a different figure.[5]

[1] The former is included in national expenditure on domestic service, the latter in services of hotels and restaurants.

[2] The understatement is least marked in the budgets collected by Mr. Ch. Madge in Leeds, 1942 (*War-time Pattern of Saving and Spending*). Not even these budgets are satisfactory, but they indicate certain variations in expenditure between families of different types and make it clear that supplementary earners spend a greater proportion of their income on drink and tobacco than the chief earner. The last fact makes it particularly difficult to collect reliable data by the usual family budget method.

[3] For instance, an inquiry into tobacco consumption made available to the authors of *The Burden of British Taxation*.

[4] The moderate consumption may be typical, and there is justification for showing typical consumption if it can be proved that the typical consumption differs from average consumption and that there is only one typical level of consumption (that is, the frequency distribution of consumption is skew and has one mode only). The estimate for moderate consumption in *The Burden of British Taxation* is considerably above the average consumption of drink, but below that of tobacco. Moreover, in that inquiry typical consumption is not varied with variations in the size of family, given the level of income.

[5] It is stated (op. cit., p. 130) that the figures for the broad income groups were varied upwards and downwards. The estimated expenditure of £20 on drink and tobacco by a married man with two children out of an income of £100, obtained by this method, seems to be excessive. It is implied (in the figures op. cit., pp. 136 and 158) that expenditures on both drink and tobacco were regarded as decreasing proportions of income. But, according to the findings of Mr. Ch. Madge, the proportion of income spent on drink and tobacco increases in the working-class range of incomes. This latter conclusion seems to be more plausible since a decreasing proportion of income is spent on food, housing, fuel, and insurance, expenditure on which accounts for a large part of working-class incomes, and there must be items expenditure on which is correspondingly an increasing proportion of income.

National expenditure on drink was £260 mn. In *The Burden of British Taxation* typical expenditure on drink is estimated for three income classes (incomes of £350 and £1,000 being the limits), and for six levels of consumption, each with five sub-groups.[1] From these figures averages have been calculated weighting moderate consumers by two, light and heavy consumers by one each. Average expenditure in the three income groups was found to be in the ratio of 1 to 1·17 to 3·21, and hence total expenditure was £229 mn. by persons with an income under £350, £18 mn. by persons with incomes of £350–1,000, and £12·5 mn. by persons with incomes over £1,000.

It was assumed that the consumption of supplementary earners is 40 per cent. higher than of the chief earners in the same income group. It was also assumed that average consumption between £125 and £250 was 20 per cent. greater than under £125.[2] For incomes between £250 and £1,000 the graduation implied in *The Burden of British Taxation* has been used. An allowance was made for the far lower average consumption of women in comparison with men.[3] The estimates obtained are shown in Table 41.

Tobacco consumption in 1937 was 183 million lb. at an estimated cost of £160 mn. It is assumed that only persons over 16 smoke and that consumption by women accounts for one-eighth of the total.[4] It can be estimated that the average number of cigarettes consumed by persons with incomes over £250 was 21 per cent. more than the average number consumed by persons with incomes under £250. Hence persons with incomes over £250 consumed 17 per cent. of the total number of cigarettes.

An equal number of first- and second-class cigarettes were marketed, but the price of first-class cigarettes exceeded that of second-class ones by 50 per cent.[5] Assuming that all consumption above £250 consisted of first-class cigarettes, 34 per cent. of first-class cigarettes were consumed by persons in that class. Distributing expenditure on pipe tobacco (estimated as £25 mn.) in proportion to expenditure on cigarettes, it is estimated that the classes below £250 spent £128 mn. on smoking, those above £250 spent £32 mn.

[1] Op. cit., Table 43.

[2] It is estimated from the data given in Ch. IV and Appendixes D and F that the under-£125 class consisted of 4,000,000 families (according to the income-tax definition), 3,500,000 other men, and 7,000,000 women; the £125–250-class of 5,150,000 families, 1,850,000 other men, and 350,000 women.

[3] This affects mainly the relative expenditure of the lower groups because the proportion of women was higher under £125 than £125–250, according to the above footnote.

[4] Cf. *The Burden of British Taxation*, ch. ix, *passim*.

[5] At 6*d*. and 4*d*. per 10 cigarettes, respectively.

TABLE 41. *The distribution of consumption and saving, 1937*

(In million £'s)

	Under £125	*£125–250*	*£250–500*	*£500–1,000*	*£1,000 and over*	*Total*
Food	435	415	174	72	82	1,178
Drink	99·5	104	36	8	12·5	260
Tobacco, &c.	68·5	64·5	22	7	4·5	166·5
Rent, rates, &c.	135	130	67	28	55	415
Fuel	75	73	23	7	17	195
Domestic service	2	5	12	12	39	70
Clothing, &c.	165	155	62	25	53	460
Private motoring	5	10	35	30	35	115
Other travel	25	20	20	10	25	100
Entertainment	20	21	10	5·5	5·5	62
Betting	22	20	3	2	3	50
Postal services	7	8	8·5	8	8·5	40
Medical expenses	24	23	26	10	17	100
Clubs, &c.	15	15	8	2	3	43
Other consumption	(215)	(154·5)	(45·5)	(17·5)	(87)	519·5
Consumption	1,313	1,218	552	244	447	3,774
Saving						
Personal, gross	48	57	52	42	125	324
Imputed, gross	16	26	15	19	77	153
Less Death duties, &c.	−1	−2	−4	−6	−85	−98
Saving	63	81	63	55	117	379
AVAILABLE INCOME	1,376	1,299	615	299	564	4,153

For the groups below £250 it was assumed (as also for expenditure on drink) that consumption by supplementary earners was 40 per cent. higher than that of chief earners or housewives with the same income, and that consumption for incomes between £125 and £250 was 10 per cent. higher than for corresponding types below £125.[1] The following percentage distribution of the number of cigarettes consumed by persons with incomes under £250 has been found:

	Married men and women	*Other persons*	*All*
	%	%	%
Under £125	23	30	53
£125–250	32	15	47
TOTAL	55	45	100

It follows from the above assumptions that 40 per cent. of these cigarettes were first class. It is assumed that married men and women

[1] For the relative consumption of men and women see above.

below £125 consume one first-class cigarette in 3½, £125–250 one in 2½, other persons below £125 one in 2⅝, and £125–250 one in 1⅝. On these assumptions, and again taking expenditure on pipe tobacco in proportion to expenditure on cigarettes, the distribution of expenditure was the following:

	(In million £'s) *Married men and women*	*Other persons*	*All*
Under £125 . . .	27½	38½	66
£125–250 . . .	41	21	62
TOTAL . . .	68½	59½	128

Expenditure for the groups above £250 has been distributed according to the graduation of the duty as estimated in *The Burden of British Taxation*. It can be estimated from the figures on p. 146 that smokers spent £6½ mn. on matches and lighters, and this sum has been distributed in proportion to the number of cigarettes smoked.[1] The distribution of expenditure on tobacco and matches is shown in Table 41.

Next to food, family budgets supply most information on expenditure on rent (including rates and water charges). Difficulty arises because not all families rent their houses but some own them, are buying them, or receive free lodging from their employer. For families buying their house the information available is not satisfactory because the expenditure given includes not only rent but also repayment of mortgage (which is saving). For families who own their houses or have them rent free no information is available on the amount of imputed rent. Hence expenditure on rent by families renting their houses was used to represent expenditure on rent by all families.[2] This assumption is fairly satisfactory for the working classes (who for the greater part rent their houses) but less so for the higher income groups.

Weekly expenditure on rent for persons with incomes below £125 was estimated as 7*s*. per household according to figures in the Merseyside survey. For persons with incomes of £125–250 the weighted average of the Ministry of Labour industrial, agricultural, and rural budgets has been used. Annual expenditure on rent per person (including domestic servants) was taken as £16 for incomes of £250–500

[1] In national expenditure figures this is included in household goods.

[2] For owner-occupiers the imputed rent should equal the rent assessed for income tax under Schedule A before making an allowance for repairs and depreciation.

and £23 for incomes of £500–1,000.[1] For incomes above £1,000 annual average rent per income was taken as £200.[2] The distribution of expenditure obtained is shown in Table 41.

The total of £415 mn. arrived at includes £10 mn. which should be regarded as part of the expenditure on domestic service.[3] The total personal expenditure of £405 mn. is consistent with the £420 mn. shown in Table 7, because the latter includes expenditure out of the investment income of non-profit making bodies, that is, the rent of voluntary hospitals, churches, &c.

Data on expenditure on fuel and light are available in the above-mentioned family budgets. Total expenditure calculated from the budgets would exceed national expenditure on fuel and light, as given in Table 7, by over 10 per cent.; therefore the budget figures were reduced in the same proportion and the results obtained are shown in Table 41.[4] Out of the total of £195 mn., £5 mn. is due to the double counting of fuel used by domestic servants.

The total number of domestic servants (including gardeners) in private employment has been estimated on p. 249 as 1,560,000 and total expenditure on domestic service as £105 mn. It can be estimated from the Ministry of Labour budgets that the working class spent about £7 mn. on domestic service, which is equivalent to the full-time employment of 150,000 domestic servants. It can be derived from the middle-class budgets that one family in six with incomes of £250–500 and two in three with incomes of £500–1,000 had the equivalent of the full-time services of a domestic servant. It can be taken that almost all families with incomes over £1,000 had a domestic servant, the average per family being just under three.

The proportion of male to female domestic servants was greater in the higher income groups and also there is some evidence that somewhat better wages were paid in the higher income groups. The average cost of a domestic servant was therefore greater in the higher

[1] The estimates are based on Mr. Massey's middle-class budgets, but the figures were somewhat reduced because expenditure on rent by these families is admittedly not typical.

[2] The average income above £1,000 was £2,500, and it can be ascertained from the middle-class budgets that families with less than £1,000 spent just over £100 on rent. The figure is supported by data quoted in C. Clark, *Conditions of Economic Progress*, p. 415.

[3] In the same way as food consumed by domestic servants is included twice; cf. p. 151, above.

[4] It can be seen that the Ministry of Labour working-class budgets show higher expenditure on fuel and light than other similar budgets. The seasonal variation in the figures is also surprisingly small (but this may be due to coal-clubs).

income groups. It was assumed that the average cost for the working classes was 20 per cent. less, that for the upper classes 20 per cent. more than that for the middle classes.

The estimated distribution of the number of domestic servants and expenditure on domestic service was the following:

Range of incomes £	*Number of domestic servants*	*Total expenditure* £ mn.
Under 125	150,000	2
125–250		5
250–500	300,000	18
500–1,000	300,000	20
1,000 and over	800,000	60
TOTAL	1,560,000	105

From the total cost of domestic service an allowance has to be made for the cost of board and lodging of domestic servants, since on this account £35 mn. has already been included in expenditure on food, rent, and fuel by the employers of domestic servants. This amount has been paid for 1,350,000 domestic servants living in at the average of 10*s*. per week. Domestic servants live in in the higher but not in the lower income classes and the allowance for payment in kind was made accordingly. The distribution of expenditure in cash is shown in Table 41.

Expenditure on clothing and laundry has been derived from the working- and middle-class family budgets supplemented by an estimate for the upper classes. Total expenditure obtained by this method was 20 per cent. less than national expenditure under this heading.[1]

It is reasonable to think that a great amount is spent on clothing out of pocket money, especially by supplementary earners, and is not recorded in the budgets. The correction on this account affects chiefly the lower income groups where the proportion of supplementary earners was high. Apart from this correction, the figures obtained from the budgets were increased all round as shown in Table 41.

Expenditure on private motoring was £115 mn. in 1937. It is estimated in *The Burden of British Taxation* (ch. xii) that the number

[1] Both budget inquiries obtained expenditure on clothing for the whole year as well as for selected weeks. Expenditure during selected weeks showed higher averages, explained by the fact that people also include expenditure made before the selected weeks. The difference of 20 per cent. between the budget and the national figures appears although the higher set of budget figures was used.

of cars in private use was 1,500,000 (consisting of 720,000 small, 650,000 medium, and 130,000 large cars), and the number of motor cycles 400,000. The weekly upkeep of a motor cycle was estimated at 7*s.* 6*d.* and of a small car 20–25*s.* For medium and small cars only some items of cost were estimated which had to be increased by about 45 per cent. to include all costs.

	Number (Thousands)	*Average annual cost* £	*Total expenditure* £ mn.
Motor cycles	400	25	10
Motor-cars:			
Small	720	60	43
Medium	650	75	48
Large	130	110	14
TOTAL			115

It was assumed that persons with incomes under £250 owned all motor cycles and 50,000 small cars; persons with incomes of £250–500 owned 600,000 small cars; 475,000 persons with £500–1,000 owned 70,000 small and 360,000 medium cars; 287,000 persons with £1,000 or more 290,000 medium and 130,000 large cars. This is consistent with the known fact that about 100,000 persons own more than one car.[1] On the basis of these assumptions and the average expenditures given above the figures in Table 41 are easily calculated.

Expenditure on other travel was calculated from family budgets, with an estimate for the highest group. The total obtained (£100 mn.) falls short of the total of £165 mn. estimated on p. 53, but no attempt at correction was made.[2]

Expenditure on entertainment was also estimated from family budgets and an allowance of 6 per cent. for understatement was made to obtain the national total. The allocation of expenditure on betting is hypothetical, but it is known from social surveys (for instance, Rowntree's survey of York) that betting is fairly heavy among the working classes.[3] Expenditure on postal services was obtained from family budgets, the total agreeing with the national total. In addition

[1] It is assumed in *The Burden of British Taxation* that all large cars are owned by surtax payers, medium cars by persons with £500–2,000, and small cars by persons with £350–500. The first two assumptions can be correct only if all persons with £500 or more had a car; the last one cannot be correct because the number of incomes of £350–500 was less than the number of small cars.

[2] The difference is likely to be caused by holiday and other occasional travel not recorded in family budgets.

[3] It should be remembered that not the amount of stakes but the cost of betting (about 10 per cent. of the former) is included.

£4 mn. was distributed fairly evenly for profits on 8–9 million radio licences. Medical expenses were obtained on similar lines. The total obtained no doubt includes the cost of drugs and similar expenses. Expenditure on clubs was also obtained from the totals of subscriptions to trade unions and friendly societies.[1]

The allocation of gross personal saving was somewhat arbitrary. (The distribution of imputed saving is from Table 37.) It can be estimated from figures in Table 12 that the personal savings of the classes under £250 were about £105 mn. This was distributed between persons with less than £125 and £125–250, assuming that the latter group saved a higher proportion of its income (3½ and 4½ per cent., respectively). The remainder was distributed assuming that saving is an increasing proportion of income. It was assumed that persons with incomes of £250–500 saved 8 per cent. of their income (before taxation); persons with £500–1,000 saved 12 per cent.; and persons with £1,000 and over saved 13 per cent. The figures for the higher incomes can be supported by the reasoning that higher incomes consist mostly of profits which are unstable from year to year. There is reason to think that in a good year (like 1937) a higher proportion is saved in anticipation of bad years.

Expenditure on consumption, other than under specific headings, was obtained as a residue. The figures seem to be fairly reasonable. They come to 16½, 13, 8, 7½, and 19½ per cent. of total consumption, for the five groups respectively. Of the £520 mn. in this category, £255 mn. was the expenditure on furniture and household goods and a large proportion of the rest was accounted for by expenditure on newspapers and services, such as hairdressing. This fact would explain the regressive nature of expenditure under this heading up to an income of £1,000. In the higher income groups a large proportion is spent on education and travel abroad.

The figures in Table 41 do not purport to be exact, but there seems to be justification that they are sufficiently accurate for the purposes of the next section.

ii. The distribution of taxes on consumption

Indirect taxes on consumption can be placed within three broad categories: (*a*) taxes on 'necessities', that is, taxes on food and rates on dwelling-houses; (*b*) taxes on 'semi-luxuries', the consumption of which is thought to be socially undesirable, that is, taxes on alcoholic

[1] Expenditure on clubs is equal to subscriptions less amounts paid back to members.

drinks and tobacco; and (*c*) other taxes on consumption, falling mainly on 'luxuries' (that is, goods consumed by the rich), such as taxes on motoring, entertainments, and silk.

(*a*) TAXES ON FOOD AND HOUSING

Taxes on food can be conveniently treated under three headings: the duty on tea, the duty on sugar, and other taxes on food.[1]

Duty on tea. Duty on tea consumed in 1937, allowing 1½ per cent. for consumption by the government and charities, was £7,440,000. The average weekly consumption of tea was 2·82 oz. per head. The average shown by the Ministry of Labour working-class budgets was 2·94 oz., the middle-class budgets of Mr. Massey 2·65 oz. These figures conform to the national average since the Ministry of Labour budgets exclude the unemployed and certain low paid classes of workers.[2]

From these budgets, supplemented by those of Sir John Orr, the following averages have been calculated for the main income classes:[3]

Range of incomes	*Weekly consumption per head*
£	oz.
Under 125	2·7
125–250	3·0
250–500	2·9
500–1,000	2 7
1,000 and over	2 6
AVERAGE	2·8

The amount of tax paid by each class is shown in Table 42. The tax falling on the consumption of domestic servants was allocated to their employers.[4]

[1] For the general characteristics of the duties on tea and sugar, information on consumption, and so on, cf. *The Burden of British Taxation*, ch. viii, *passim*.

[2] The budgets of Sir William Crawford show an average consumption of 3·4 oz. and cannot therefore be accepted. In *The Burden of British Taxation* consumption by the working classes is under-estimated, by the middle classes over-estimated.

[3] From the budgets the following figures were obtained for weekly consumption per head in an average family of 3·6 persons:

Income	*Consumption*	*Income*	*Consumption*
£	oz.	£	oz.
100	2·6	300	2·9
150	2·9	350	2·9
200	3·0	500 and over	2·7
250	3·0		

[4] Cf. p. 164, below.

Duty on sugar. Duty on sugar, excluding sugar used by breweries and allowing 1½ per cent. for consumption by the government and charities, came to £19,460,000.[1] Average annual consumption was 103 lb. per head. The consumption of sugar is more difficult to determine because only part of the total consumption is taken as sugar and recorded so in budgets, while part is consumed in various complex foodstuffs, such as jam or biscuits. The estimated consumption of sugar directly consumed has been obtained from the budgets of Sir William Crawford and Sir John Orr, supplemented by the middle-class budgets of Mr. Massey. The consumption of sugar used in complex foodstuffs has been taken from Sir John Orr's budgets. The following estimates were obtained for the main income classes:[2]

Range of incomes	*Annual consumption per head*
£	lb.
Under 125	96
125–250	101
250–500	115
500–1,000	127
1,000 and over	127
AVERAGE	103

The amount of tax paid by each class is shown in Table 42. The tax falling on the consumption of domestic servants has been allocated to their employers.[3]

Duties on other foodstuffs. Duties on other foodstuffs consist of 'breakfast table' duties (other than the duties on tea and sugar), and

[1] Including the excess of the rise in the price of sugar over receipts of the duty. Cf. p. 145, above.

[2] The following figures were obtained for consumption per head in an average family of 3·6 persons:

Income	*Consumption of sugar*		
	Direct	*Indirect*	*Total*
£	oz. per week	oz. per week	lb. per annum
100	17·3	11	92
150	18·3	12	99
200	19·0	12·5	103
250	20·0	13·0	108
300	20·5	13·5	111
350	21·0	14·5	116
500 and over	23·5	15·5	127

[3] Cf. p. 164, below.

protective duties including Wheat Quota payments.[1] Allowing 1½ per cent. for duties falling on the government and charities, the total was £25,660,000.[2]

Duties on food were classified on p. 145 and national expenditure on food on p. 248. It was assumed that within any group of foodstuffs the duty was distributed in proportion to expenditure on that group of foodstuffs. If the proportion of duties on food, other than tea and sugar, to total expenditure on food (which is about 2 per cent.) is denoted by 100, the duty paid by different classes, according to the budgets of Sir William Crawford, would be 97½ for class AA, 100 for class B, 102 for class C, 100 for class D, and 97 for class E.

The first four classes represent the income groups over £125, the index for the class below £125 can be put at 99.[3] It can be said that the duties were about proportional to expenditure on food. The distribution of duties, with reference to the above indices, is shown in Table 42. Duties falling on the consumption by domestic servants living in are allocated to their employers.[4]

Rates on dwelling houses. Rates on dwelling houses were estimated on p. 146 as £135 mn. and it is thought that their incidence was on the occupier.[5] There is not much information available on rates and therefore no complex method of allocation could be attempted. It is possible that a smaller proportion of the gross rent is rated in the case of small houses than large houses, partly because small houses are thought to be under assessed in comparison with large ones, partly because their gross rent includes a greater proportion of mortgage interest and similar charges. On the other hand, in poorer districts the poundage of the rates is usually higher. On balance it was thought best to distribute rates in proportion to expenditure on rent, as shown in Table 42. Rates falling on the lodgings of domestic servants living in were allocated to their employers.[6]

(*b*) DUTIES ON ALCOHOL AND TOBACCO

Duties on alcoholic drinks, details of which are given on p. 146, came to £113·7 mn. Related to expenditure on drink as estimated by

[1] For details of smaller 'breakfast table duties' cf. *The Burden of British Taxation* (ch. xiii). Wheat Quota payments are there assumed to be equal per head in all income groups (ch. xiii), whilst protective duties are taken in proportion to income under an income of £300 (ch. xvi).

[2] Details are given on p. 145, above.

[3] See p. 150, above.

[4] See p. 164, below.

[5] This is undoubtedly a valid assumption considering the housing shortage of the period. Cf. U. K. Hicks, op. cit., p. 268.

[6] See p. 164, below.

Mr. G. B. Wilson, duties as percentages of expenditure were the following:

	Expenditure £ mn.	*Duties*[1] £ mn.	*Duties*[1] %
Beer	163	69·7	42·9[2]
Spirits	68	37·9	55·5[3]
Wine (imported)	24	5·5	23·4
British wine and cider	5	0·6	12·0
TOTAL	260	113·7	43·7

The distribution of duties is based on typical expenditure figures given in *The Burden of British Taxation* (Table 43). Duty as a proportion of expenditure is given below for the five income groups.

The duty on tobacco, &c. (£83·2 mn.), came to exactly one-half of the estimated expenditure. It is assumed that the tobacco duty is proportional to the weight of tobacco and that other duties[4] are proportional to the tobacco duty. The rate of all duties was 47 per cent. for first-class and 55 per cent. for second-class cigarettes. Considering the proportions in which these types are consumed (as estimated on p. 153), the duty as a proportion of expenditure was estimated for the five income groups.

Income	*Duties as a proportion of expenditure*		
	Alcohol	*Tobacco*	*Alcohol and tobacco*
£	%	%	%
Under 125	43·3	51·5	46·6
125–250	43·5	50·0	46·0
250–500	45·4	46·8	45·9
500–1,000	48·0	46·8	47·3
1,000 and over	41·6	46·8	43·0
AVERAGE	43·7	50·0	46·3

The amounts of duty on alcoholic drinks and on tobacco paid by the various income classes are shown in Table 42. The consumption of alcohol and tobacco was more heavily taxed than that of any other

[1] Including duties on hops, licence duties, &c., but not general indirect taxes such as rates on public houses.

[2] Of which the duty on beer was 40·4 per cent. But in *The Burden of British Taxation*, p. 144, the duty on beer, as a proportion of price, is given as 31–5 per cent., varying with the degree of gravity, and later it is stated that 30 per cent. of the expenditure on beer is paid in duty.

[3] Of which the duty on spirits was 53·6 per cent. But loc. cit. the duty on whisky as a proportion of price is given as 68 per cent.

[4] Duties on matches used by smokers, on imported pipes, and licence duties on retailers.

TABLE 42. *Indirect taxes on consumption*

(In million £'s)

Range of incomes	*Tea*	*Sugar*	*Other food*	*Food* (1–3)	*Rates*	*Food and housing* (4–5)	*Alcohol*	*Tobacco*	*Alcohol and tobacco* (7–8)
£	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Under 125	2·99	7·74	9·11	19·8	41·7	61·5	43·1	35·3	78·4
125–250	3·17	7·75	9·23	20·2	43·3	63·5	45·2	32·2	77·4
250–500	0·83	2·39	3·94	7·2	22·3	29·5	16·3	10·3	26·6
500–1,000	0·23	0·79	1·60	2·6	9·3	11·9	3·9	3·3	7·2
1,000 and over	0·22	0·80	1·78	2·8	18·3	21·1	5·2	2·1	7·3
TOTAL	7·44	19·47	25·66	52·6	134·9	187·5	113·7	83·2	196·9

Range of incomes	*Private motoring*	*Other travel*	*Domestic service*	*Enter-tainments*	*Silk*	*Postal and Wireless services*	*Miscella-neous*	*Other taxes* (10–16)	*Total* (6, 9, 17)
£	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Under 125	1·4	3·63	0·04	2·16	1·50	1·22	4·43	14·4	154·3
125–250	2·8	2·93	0·20	2·79	1·42	1·52	3·82	15·5	156·4
250–500	9·8	2·70	0·48	1·59	0·57	1·03	1·31	17·5	73·6
500–1,000	9·6	0·87	0·78	0·88	0·97	0·50	0·83	14·4	33·5
1,000 and over	11·8	1·17	2·60	0·89	2·04	0·33	1·52	20·3	48·7
TOTAL	35·4	11·3	4·1	8·3	6·5	4·6	11·9	82·1	466·5

commodity or service. If some allowance is made for non-specific duties, such as local rates on breweries and public houses, taxes about doubled the cost of drink and tobacco. It can be seen that there was no great variation in this proportion as between income groups.

(*c*) OTHER TAXES ON CONSUMPTION

Private motoring. It can be estimated that taxes as a proportion of expenditure were 28 per cent. for motor-cycles and small cars, 33 per cent. for medium, and 36 per cent. for large cars. Considering the distribution of these cars (given on p. 157), taxes paid amounted to 28 per cent. of expenditure under £500, 32 per cent. from £500 to £1,000, and 34 per cent. for incomes of £1,000 and over. The distribution of taxes amounting to £35·4 mn. is given in Table 42.

Other travel by road. Travel in buses, coaches, and taxis was, according to family budgets, diminishing in relation to travel by railways, the proportion of road to rail travel falling from 70 and 65 per cent. (for the classes under £250) to 60, 35, and 20 per cent., respectively (for the higher classes). The disparity between the national estimates and family budgets was evenly distributed between rail and road traffic. £11·3 mn. duties on travel other than by private cars were distributed in proportion to expenditure on road travel.

Domestic service. Employers' contribution to social insurance for, or on behalf of, domestic servants was estimated on p. 105 as £4·1 mn. Employers' contribution was allocated in proportion to the number of servants estimated on p. 156. Contributions paid on behalf of servants were allocated to the higher groups only, assuming that all employers with incomes over £1,000, and two out of three with £500–1,000, undertake to pay the servants' contribution. The figures are shown in Table 42.

In the case of domestic servants living in it can be assumed that taxes falling on payment in kind (food and lodging) are borne by the employer. If there is a change in indirect taxation the amount of payments in kind is not likely to be affected, neither would cash payments be changed. Taxes falling on food consumed by domestic servants and local rates falling on their lodgings were allocated to employers when allocating taxes on these items. All taxes falling on domestic service are estimated as £8·7 mn.

Entertainments. Admission fees of 6*d.* and less were tax free. Cinema seats above 6*d.* were taxed at one-sixth of the admission price. Theatre seats were taxed at a graduated rate, lower for cheaper seats but approaching one-sixth of the higher admission prices. The pro-

portions of expenditure on cinemas to total expenditure on entertainment, as obtained from family budgets, were 85, 80, 60, 35, and 20 per cent. for the various groups.[1] Expenditure on seats of 6*d.* or under was £10 mn.,[2] of which £6·5 mn. was assumed to have been spent in the group under £125 and £3·5 mn. in the £125–250 group. Estimating, for the five income groups, the average variation in the rates of duty on theatre seats over 6*d.* as from 10 to 16 per cent. of the admission fee, the variation in duties on both theatre and cinema seats of over 6*d.* was from 15·4 to 16·1 per cent. £8·3 mn. (including duties on imported films) were allocated on this basis to expenditure on entertainments less expenditure on admission fees of 6*d.* or under.

Silk and artificial silk. In spite of its quantitative importance (equal to the tea duty), no attempt has been made previously to allocate the duty on silk and artificial silk. It is known that artificial silk is consumed by all classes but real silk by the rich only. It was assumed that the duty on artificial silk (£4·2 mn.) was proportionately distributed to expenditure on clothing, the duty on pure silk (2·3 mn.) to expenditure on clothing above an income of £500. Family budgets indicate that expenditure on laundry, boots and shoes, and repairs to clothing was in each income group the same proportion of total expenditure on clothing and laundry; therefore, the figures in Table 41 could be used to arrive at the distribution of the duty as given in Table 42.

Postal and wireless services. The distribution of expenditure shown in Table 41 can be broken down into the constituent services, that is, postal, telephone, telegraph, and wireless, and the duty calculated by applying the relevant rates of profit given on p. 147. Almost all the profit of the Post Office was made on the postal service, the loss on the telegraph services being just balanced by some gain on the telephone services. The proportion of expenditure on postal services proper to all Post Office services was 80, 75, 55, 25, and 15 per cent., respectively, for the different income groups. £3·8 mn. was allocated in proportion to expenditure on postal services and £0·8 mn. (including import duties on wireless sets) in proportion to the number of wireless sets.

Miscellaneous. The duty on matches used by households (£2·2 mn.) was distributed in proportion to the number of persons, assuming that no such duty falls on domestic servants living in and members of the Forces.

[1] These proportions are consistent with £42 mn., the estimated total expenditure on cinemas.

[2] Based on sources quoted on p. 250.

Dog licences (£1,125,000) were paid for 3 million dogs, and it was assumed that every second family with an income over £500, every third with £250–500, and every fifth under £250 bought a licence. Game licences (£266,000) were allocated to persons with £500 or more. Medicine stamp duty and licence duty on the sale of patent medicines (£733,000) and the duty on playing-cards (£79,000) were allocated in proportion to the number of persons.

The duty on imported textiles and clothing (£2·3 mn.) was distributed in proportion to expenditure on clothing and laundry as given in Table 41; the duty on imported pottery, glassware, and clocks (£5·2 mn.) in proportion to 'other consumption' given in Table 41.

The results of Table 42 can be expressed as percentages of actual available income for the five income groups and for the three main categories of specific indirect taxes.

Income	*Food and housing*	*Drink and tobacco*	*Other*	*Total*
£	%	%	%	%
Under 125	4·5	5·8	1·0	11·3
125–250	5·0	6·1	1·2	12·3
250–500	4·9	4·4	2·9	12·2
500–1,000	4·2	2·5	5·0	11·7
1,000 and over	3·7	1·3	3·5	8·5
AVERAGE	4·6	4·8	2·0	11·4

The taxes on 'necessities' (food and housing) are, on the whole, regressive, though the degree of regressiveness is not very marked in the lower ranges of income. The *horizontal* regressiveness of these taxes is a much more serious consideration, that is, taxes on food and housing markedly increase with an increase in the size of the family.

Taxes on 'semi-luxuries' (drink and tobacco) are first an increasing, later a diminishing proportion of income; that is, the income-elasticity of demand is greater than unity in the lower ranges of income, but less than unity in the higher ranges. It can be seen that the taxes on drink and tobacco are the chief factors in making indirect taxes as a whole regressive.

Taxes on 'luxuries' are an increasing proportion of income, except in the highest range. It is demonstrated that indirect taxation and progressive taxation are not inconsistent.[1] There is always likely to be a level of income above which any indirect tax becomes regressive (because the income-elasticity of demand falls), yet this fact is of no

[1] A good example is the purchase tax, introduced in war-time, which is levied at a higher rate on luxuries than on non-luxuries.

consequence if that level of income is sufficiently high to be in the range liable to surtax and other highly progressive direct taxes.

Indirect taxes as a whole are regressive. The classes under £250 paid 11·8 per cent. of their actual available income in specific indirect taxation, the classes over £250 paid 10·7 per cent. The regressiveness of indirect taxes is, of course, more marked if the figures are related to producers' income and not available income.

iii. The distribution of indirect taxes between all income groups

The share of indirect taxes borne by persons with incomes over £1,000 is to be divided between the following three groups:

Income	*Number of incomes*	*Amount of income*	*Number of persons*[1]	*Actual available income*
£	Thousands	£ mn.	Thousands	£ mn.
1,000–2,000 .	177	242	850	203
2,000–10,000 .	101	378	600	277
10,000 and over .	9	181	80	92
TOTAL . .	287	801	1,530	572

It was assumed that the taxes on food per person were in the second group 15 and in the third 20 per cent. more than in the first; rates were, as a proportion of available income, in the second group 10, in the third 20 per cent. less than in the first; the duty on drink per income was in the second group 20, in the third 50 per cent. more than in the first; for motor cars it was assumed that 185,000 cars were owned in the first group (of which 20,000 were large), 200,000 in the second (101,000 large), and 35,000 in the third (9,000 large);[2] the smaller taxes were taken in proportion to the number of incomes or the number of persons, as appropriate.

The distribution of indirect taxes for the highest groups was the following:

Income	*Taxes*	*Proportion of actual available income*
£	£ mn.	%
1,000–2,000 . .	22·1	10·9
2,000–10,000 . .	22·1	8·0
10,000 and over . .	4·5	4·9

[1] Including domestic servants living in. It was estimated, in agreement with the estimate on p. 156, that the number of servants per family is 2 in the first, 3·5 in the second, and 7 in the third group.

[2] That is, 1, 2, and 4 cars, respectively, per income, of which one was large in the second and third groups.

It was also estimated that the proportion of indirect taxes fell to 3·4 per cent. in the top group, £100,000 and over. The estimated proportions of specific indirect taxes to actual available income are

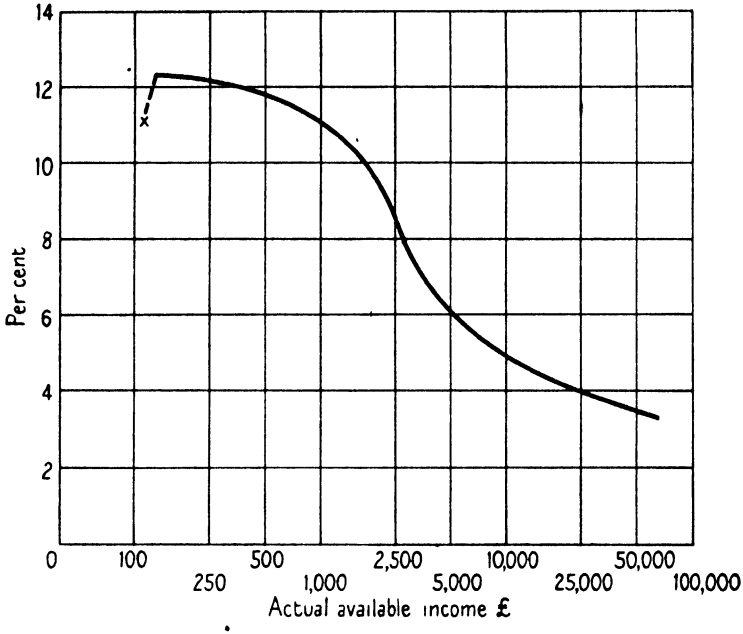


FIG. 10. Specific indirect taxes as percentage of actual available income.

represented in Fig. 10.[1] The percentages for the intermediate income groups were obtained by interpolation and the results are given in Table 46 below.

[1] The estimate for the class under £125 is not expected to lie on the same curve as the other estimates because of the different composition of this class. A number of persons is included who receive part of their income in kind, which part is free of indirect taxes. Also, the family composition is different in this class because a great number of supplementary earners is included whose spending pattern is different from that of families. An estimate was made for the continuation of the curve in the lower ranges as if the class under £125 were homogeneous with the other classes. The factors which made the under-£125 class different must be borne in mind when comparing the proportion of indirect taxation paid by the various classes.

XIII

SUBSIDIES

i. The definition of subsidies

Subsidies (indirect transfer expenditure) are analogous on the expenditure side to indirect taxes on the revenue side.[1] In the first place they are transfers, and as such are to be distinguished from real government expenditure; second, they are *indirect* transfers and are to be distinguished from direct transfers. It is possible to prove propositions referring to indirect taxes to be valid for subsidies. For instance, direct taxes are less burdensome than indirect taxes yielding the same amount,[2] and in the same way expenditure on direct transfers is more beneficial than expenditure of the same amount on subsidies.[3] The incidence of subsidies can be determined in the same manner as the incidence of indirect taxes, that is with reference to elasticities of supply and demand.[4]

Subsidies are distinguished from real expenditure because they involve no direct using up of resources at the command of the government. Subsidies reduce the prices of goods to the consumer below factor cost and thereby may stimulate the consumption of certain commodities. In the limiting case, such as free milk for babies, the government offsets the whole cost by a subsidy and the price to the consumer is reduced to zero. It could be argued that all services provided by the government free of charge should be regarded as subsidies in this sense, not only milk for babies but also policemen, roads, and so on. There is, however, no need to take this view.

Most services provided by the government, such as police or defence, confer indivisible benefits. In other cases, though the benefits are divisible, the service is more conveniently provided by the government; for instance roads, where the marginal cost of an additional user is negligible. The use of other services, for instance elementary education, is compulsory. Subsidies are provided only potentially. The consumer is able to benefit only by fulfilling certain conditions, such as paying a price (though below factor cost). The demand for subsidized goods is always individual and not collective demand. The government is ready to sell certain goods or services

[1] Ch. II, p. 29. [2] Because of the 'announcement effect'. See p. 12.

[3] Assuming that prices (at factor cost) are given. But, in fact, subsidies do influence the structure of industry and prices.

[4] Viz. the text-book case of tariffs and export bounties.

below factor cost, in limiting cases at zero price. But the individual must demand the goods or services, and the amount provided is proportional to the sum of individual demands; the government decides the *rate* of the subsidy per unit of output but not the total spent on subsidies. For instance, if the incidence of illness increases, Health Insurance automatically provides more medical service; on the other hand, expenditure on roads can be increased only by the concerted action of individuals.

Subsidies are also distinguished from direct transfers by being dependent on the consumption of particular goods or services. All government expenditure increases incomes, but while direct transfers increase purchasing power in the hands of certain individuals directly, subsidies do so indirectly, by making the market price of certain goods and services lower.

Before the introduction of the war-time food subsidies, clear-cut cases of subsidies could not be found in Britain. It is essential to distinguish two meanings of the term *subsidies*. In its economic sense, as it has been used here, the term is used for price or consumers' subsidies which lower prices. But the term is also used for growers' or producers' 'subsidies'—among which the beet-sugar and the cattle subsidy were the most important—which benefit not the consumer but the producer of the commodity. The effect of the pre-war 'subsidies' was most probably to cause a switch from imports to home production, and these 'subsidies' are to be considered as real government expenditure.[1,2]

The most important subsidy in 1937 was on housing, allowing tenants in certain houses to pay less than the economic rent. Health Insurance medical benefits, school medical services and school meals (in most cases provided free of charge) can also be regarded as subsidies.[3]

ii. The allocation of subsidies

During 1937 the following amounts were spent on subsidies:

	£' 000
Net expenditure on housing	21,600
N.H.I. medical benefits	11,610
School medical services	2,830
School meals	910
Total	36,950

[1] See pp. 200–1.

[2] None of the subsidies considered as such in the White Papers on national income for 1938 were price-subsidies.

[3] It could be argued that expenditure on hospitals and Public Assistance (Institutional Relief) should also be regarded as subsidies.

In England and Wales, during 1935–6, local authorities spent £37·2 mn. on housing, 53 per cent. of which, £19·8 mn., was recovered by rents. Subsidies, therefore, amounted to 88 per cent. of actual rents which would be 54 per cent. of rents and rates. It is assumed that the incidence of the subsidy is on the occupier.[1] The average weekly rent charged by local authorities in 1936 was 6*s.* 8*d.*; hence subsidies came to an annual £15 per house on the average. 1,500,000 houses were subsidized in Britain.

The information as to the persons who benefit by the housing subsidy is very scanty, but some can be found in the Merseyside survey.[2] Only council houses are discussed, but the subsidy paid to private building can be neglected. It is clear that the subsidy is restricted to the working classes but not to their poorest sections. The distribution of the working classes according to industrial status in council houses and in the total population of Merseyside was the following:

	In council houses %	*Population* %
Unskilled workers	25·3	39·3
Semi-skilled workers	26·8	24·7
Other working-class persons	47·9	36·0
TOTAL	100·0	100·0

From these data it can be estimated that the chance which a person with an income below £125 has of living in a subsidized house is 60 per cent. of the similar chance of a person with £125–250. The chance of a person with £175–250 is 20 per cent. greater than that of a person with £125–175. If this phenomenon were general for the whole country, subsidies would tend to be regressive.[3] On the other hand, it must be noted that housing subsidies are at a flat rate, the same amount being paid on each house irrespective of size. The latter fact makes subsidies on the whole progressive, but also influences building policy in an undesirable way by promoting the building of rather small houses.

The housing subsidy has been allocated on the basis of the Merseyside figures which were taken as being valid for the whole country.[4, 5]

[1] This assumption is a corollary of the assumption that the incidence of rates is on the occupier.

[2] Vol. i, p. 273, Table IV.

[3] It is known that capacity to pay rent is one of the chief considerations in allotting council houses.

[4] For further references, cf. Ministry of Health Reports, various social surveys, a paper by Marion Bowley in *Review of Economic Studies*, 1940, and another paper to the Manchester Statistical Society (*Transactions*, 1941–2).

[5] The redistributive effect of the Restriction of Rents Acts was probably similar to the effect of the housing subsidy.

TABLE 43. *Subsidies*

Range of incomes	*Housing*	*Medical benefits*	*School services*	*Total*	*Proportions of actual available incomes*
£	£'000	£'000	£'000	£ mn.	%
Under £125	8,700	6,400	2,300	17·4	1·3
125–150	3,600	2,000	420	6·0	1·8
150–175	3,430	1,550	350	5·3	1·6
175–200	2,820	860	250	3·9	1·4
200–250	3,050	720	280	4·1	1·2
250–300	—	60	120	0·2	0·1
300–400	—	20	—	0·0	—
TOTAL	21,600	11,610	3,720	36·9	—

TABLE 44. *The distribution of consumption and saving, adjusted for indirect taxes specifically on consumption and subsidies*

(In million £'s)

Item	*Under £125*	*£125–250*	*£250–500*	*£500–1,000*	*£1,000 and over*	*Total*
Food	415	395	167	69	79	1,125
Drink and tobacco	90	91	31	8	10	230
Rent	102	100	45	19	37	303
Fuel	75	73	23	7	17	195
Domestic service*	2	5	12	11	36	66
Clothing	163	153	61	24	50	451
Private motoring	4	7	25	20	23	79
Entertainment and betting	40	38	11	7	7½	103½
Postal service	6	6	7½	7½	8	35
Medical	33	29	26	10	17	115
Clubs	15	15	8	2	3	43
Other consumption†	231	169	62½	25½	110½	598½
Consumption	1,176	1,081	479	210	398	3,344
Saving	63	81	63	55	117	379
TOTAL	1,239	1,162	542	265	515	3,723

* Cash payments only.

† Including travel, other than private motoring.

Medical benefits, including free medical treatment and medicine, are provided to persons insured for health. It has been assumed that the distribution of the medical benefits was similar to the distribution of cash benefits, other than disablement benefits, under the Health Insurance scheme.[1]

[1] For cash benefits, included in social transfers, see p. 81, above.

For the allocation of the cost of the school medical services and school meals it has been assumed that all children in the under-£250 groups attended public elementary schools. Following this assumption, about one-third of the children in the over-£250 groups attended public and two-thirds private elementary schools.

It was also assumed that one-third of the expenditure provided wholly free and two-thirds partly free services. The allocation of subsidies shown in Table 43 has been obtained.

Subsidies came to 1·4 per cent. of both actual available incomes and unadjusted nominal producers' incomes under £250. Subsidies paid to the classes over £250 were negligible.

The distribution of expenditure on commodities and services and saving at *factor cost* (but not allowing for taxes on production), is shown for five income groups in Table 44. This table has been derived from Table 41 in Ch. XII. It can be seen that the significance of several items of expenditure, such as drink, tobacco, private motoring, and rent, has been greatly altered by taking factor cost instead of the market price. The proportion of saving, measured at factor cost, has increased in comparison with that at market prices.

XIV

INDIRECT TAXES ON PRODUCTION IN GENERAL

i. Incidence

A definition of indirect taxes on production in general was given on p. 143, but the question of their incidence was left open. The three main types are social insurance contributions, rates on business premises, and motor and petrol duties on business. Theories on the incidence of social insurance contributions were discussed on pp. 97–9, above, and it was found that there is no generally accepted theory; on the incidence of other indirect taxes on production in general even less has been said with an even greater degree of vagueness.[1] A theory will be evolved here dealing with the general incidence of these taxes.

It can be argued that from the point of view of tax shifting there is a great deal of difference between taxes on consumption and taxes on production; indeed, the definition of these taxes can be made dependent on differences in the process of tax shifting. Taxes on consumption cannot be regarded by business men as ordinary costs, while taxes on production can. In the first place, taxes on consumption are quite significant in relation to the price of the goods taxed, while taxes on production are not.[2] But even if this were not so, taxes on consumption fall on particular industries only, and the movement of capital and labour from one industry to another must be taken into account;[3] in the case of taxes on production the movement between industries is unlikely to have significant effects.[4]

Three alternative propositions will be considered, based on three different patterns of behaviour by business when costs change.

[1] In *The Burden of British Taxation* it was assumed that incidence is on the ultimate consumer, but this is not stated with any degree of certainty, nor are any reasons given for this assumption.

[2] Taxes on alcohol, tobacco, and the use of dwellings amount to 60 per cent. of the factor cost of these goods and services. Taxes on production raise prices by 4–5 per cent. only.

[3] e.g. silk yarns are taxed, but it is unlikely that this tax is passed into the price of finished commodities by changing prices proportionately (cf. p. 99), since this would increase profits in the silk industry relatively to other industries.

[4] This division is, perhaps unconsciously, followed by the Customs and Excise authorities. Indirect taxes are meant to be levied on home consumption and, in so far as goods are exported, Customs and Excise duties are refunded. For instance, on exports of cigarettes, whisky, or articles containing silk, the duty on imported materials embodied and Excise duties on home production can be 'drawn back'. But not duties which are here defined as indirect taxes on production.

At this stage it will be assumed that the economic system is closed.[1]

(*a*) A small change in marginal cost causes a proportional change in price, that is, percentage gross profit margins are fixed.[2]

(*b*) A small change in total cost causes a proportionate change in prices, that is, percentage net profit margins are fixed.[3]

(*c*) A small change in total costs causes an equal change in prices, that is, absolute net profit margins are fixed.[4]

According to the first proposition, taxes on production entering into marginal cost, such as employers' contribution for wage-earners and duties on petrol, will raise prices by more than their amount, so that their full incidence is on wages; but taxes entering into overhead costs, such as rates, will be paid out of profit incomes. According to the second proposition, all taxes fall on wages and salaries and none on profits. According to the third, taxes are borne by all categories of income.

Some empirical tests can be made which suggest that the second theory is unlikely to be true; but these tests would not help to choose between the first and the third.[5] In fact, as regards the allocation of taxes on production for 1937, little difference is made whether the first or the third proposition is taken.[6] The third will be taken here, mainly because it is generally believed that, to some extent, taxes entering into overhead costs are also shifted.[7]

[1] i.e. there is no international trade. This assumption will be later removed.

[2] This was Mr. Kaldor's assumption on the incidence of social insurance contributions (cf. p. 98, above). His theory is here applied to all taxes on production.

[3] This is the case if cost accountants allocate overhead costs and then add a fixed percentage for net profit.

[4] This is the case, strongly recommended in some text-books on accounting, if the firm aims at a fixed total net profit and cost accountants allocate this net profit as other overheads are allocated.

[5] It follows from the first proposition that the share of wages in the national income is constant from year to year (where wages include taxes entering marginal costs and national income includes all taxes on production). The second proposition would imply a constant share of profits in the national income (including taxes on production). The third implies a constant share of wages (excluding taxes entering marginal costs) in the national income (at factor cost). The ratios derived from the first and third propositions are fairly constant, while this is not so with the second.

[6] This is so because taxes entering into marginal cost as a proportion of all taxes on production were equal to the share of wages in the national income, hence the rise in prices due to taxes on production was the same under both propositions.

[7] This uncertainty in the incidence of taxes on production suggests that they are bad taxes for this reason alone because they could not have any predetermined purpose. As to their significance, taxes on production amounted to 3 per cent. of the net national income (at factor cost) in 1913, which proportion was rising to 4 per cent. between 1924 and 1931 and was 4½ per cent. between 1932 and 1938.

There is even less certainty about the incidence of taxes on production falling on exports. They appear to be paid by the foreign consumer as supply is elastic relatively to foreign demand, provided that the rate of foreign exchange is fixed.[1] It is difficult to say which factors were taken into consideration in determining the exchange rate of the pound before the war, but as far as 1937 is concerned the available facts suggest that the sterling rate behaved as though it were fixed,[2] and therefore it can be assumed that there was no difference between the incidence of these taxes on home consumption or on exports.[3]

It is therefore generally assumed that indirect taxes on production fall on the ultimate consumer, those on exports falling on foreigners.

ii. The method of approach

It was generally thought that indirect taxes on production cannot be distributed with any degree of precision owing to lack of data and, as a result of this, no estimate of the 'burden' of taxation can claim precision.[4] The conclusion of this chapter is that these taxes are practically proportional to expenditure on consumption and saving, adjusted for indirect taxes specifically on consumption and subsidies, and therefore the margin of error is smaller than has been thought. There are obvious reasons, given below, why this should be so.

[1] N. Kaldor, 'The Beveridge Report: The Financial Burden', *Economic Journal*, 1943, pp. 25–6, states that under the gold standard the foreigner does pay, but after the war the rate of sterling can be fixed so as to take into account taxes falling on exports. It is evident, from the fact that specific indirect taxes are refunded when a commodity is exported, that it is not the intention of the legislature to tax foreigners in this way. But it must be remembered that similar taxes exist abroad also and are paid for by the consumers of imports into Britain.

[2] By 1937 the sterling, the dollar, and the franc had been depreciated, to almost exactly the same extent, that is, to 60 per cent. of their gold parity. Hence it seems that the same foreign exchange rates were maintained in 1937 as would have been maintained under the gold standard. 54 per cent. of British exports went to countries the currencies of which had been depreciated to the same extent as the sterling, another 11 per cent. was exported to Australia and New Zealand which depreciated by an additional 25 per cent. but were in the sterling area. Rates of exchange with other countries were unlikely to be influenced by small changes in British export prices.

[3] The proportion of exports, for which there is a world price independent of the British price, was insignificant. It should be noticed that taxes were heavier on invisible exports where the British position was more monopolistic. (A country's position in an industry can be monopolistic though the industry is competitive.)

[4] The only estimate was made in *The Burden of British Taxation*, pp. 215–17. In contrast to the treatment there, it must be pointed out that some of these taxes fall on foreigners; they fall on services as heavily as on goods, and they also fall on rent and saving.

It also follows that any refinement in the methods used would have yielded strongly diminishing results. It should be remembered that the subsidiary estimates in this chapter are satisfactory for the purpose of obtaining the final results, but could have been greatly improved if used for other purposes.

Indirect taxes on production in general were given in Table 40 and their total came to £193·4 mn. It was decided to omit taxes on motoring (licence, petrol, and import duties on cars) falling on business as it will be found on p. 200, below, that expenditure on roads for traffic purposes and its distribution was equal to road taxation, and therefore a part of taxation and expenditure can be jointly omitted when considering redistribution.

In the next section of this chapter indirect taxes on production (except taxes on motoring), amounting to £153·8 mn., are distributed between various industries the net output of which was estimated in Tables 9 and 10. It was shown in Ch. III, § i, that the national income can be conceived as consisting of a number of small particles which can be sorted out according to any of a number of dimensions. These particles are sorted out according to industry, and to the net output of each industry a certain amount of indirect taxes on production in general is attached. The particles are then reshuffled and sorted out according to objects of expenditure, thus obtaining the amount of general indirect taxes attached to each group of expenditure. The particles are again reshuffled and sorted out, on the basis of Table 41, according to income groups, obtaining the distribution of general indirect taxes between income groups.

iii. The distribution of general indirect taxes between industries

In distributing taxes between the various branches of industry, it is most convenient to regard that part of the output of finance and the Post Office which is sold to business as part of the output of the relevant branches of industry. The gross output of finance sold to business can be estimated at £50 mn. (implying a net output of £40 mn.),[1] of the Post Office at £45 mn. (implying a net output of £35 mn.).[2] Therefore part of the net output of finance and the Post Office, as given in Table 9, was omitted from the figures in Table 45,

[1] The net output of finance was £110 mn., of which £40 mn. was sold to private persons (mostly life insurance) and £30 mn. exported.

[2] The gross output of the Post Office was £87 mn., of which £11 mn. was tax. The share of business, based on estimates on p. 147, can be put at £51 mn., of which £7 mn. was tax.

and also £20 mn. from the net output of 'productive' industry representing materials bought by finance and the Post Office.[1] The total of £95 mn. was then allocated between the various industries.[2]

Employers' contribution to social insurance (£47·7 mn.) can be distributed between the various industries on the basis of employment statistics.[3] The cost of workmen's compensation (£13 mn.) is more difficult to allocate because official statistics give the distribution of £6·2 mn. only.[4] An allowance was made for industries not included in the official returns and also for the cost of administration (about £2·5 mn.). Of employers' contribution to social insurance (including workmen's compensation) £6 mn. fell on coal-mining, £34 mn. on other mining, manufacturing, and building, £2 mn. each on agriculture, railways, road transport, and shipping and miscellaneous transport, £8½ mn. on commerce and distribution, and £4 mn. on other services.

The distribution of local rates on business (£61·6 mn.) is more difficult. From *Reports of the Ministry of Health* it is possible to estimate that under £6 mn. fell on 'productive' industry and £1·8 mn. on the railways. Nothing is known of the rest. It was assumed that the share of commerce and distribution was £18 mn., finance and insurance £5 mn., professions £10 mn., entertainment £5 mn., and hotels, restaurants, public houses, &c., £15 mn.[5] Small amounts were allocated to other industries.

Of stamp duties falling on business (£6·1 mn.) £1·8 mn. was assigned to 'productive' industries, £2·0 mn. to commerce, £1·0 mn. to professions, £0·8 mn. to finance, and small amounts to other industries. The Post Office profit falling on business (£7·4 mn.) was distributed on the same lines as the corresponding net output, placing £1·6 mn. on 'productive' industries and £3·3 mn. on commerce. Tolls, &c. (£1·8 mn.), were allocated to road transport.

The share of taxes falling on the part of the net output of finance which was sold to business was allocated to the various branches of

[1] The difference between the gross and net output of finance and the Post Office, sold to business, constitutes materials bought from industry.

[2] £50 mn. to 'productive' industry, £30 mn. to commerce, £5 mn. to finance, &c., £6 mn. to professions, £4 mn. to entertainment (mainly on account of the large postal expenses of the betting industry).

[3] The main industries were: metal and engineering £8·9 mn., building £4·3 mn., mining £3·6 mn., and textiles £5·2 mn.

[4] Including £2·6 mn. on factories, £2·6 mn. on mines and quarries, £0·6 mn. on shipping and docks, and £0·3 mn. on the railways.

[5] Mr. G. B. Wilson estimated the proportion of rates falling on public houses and breweries; these come to £4·5 mn.

industry buying that output. The results are given in Table 45, which also shows indirect taxes on production as a percentage of the net output of the different industries. Taxes on coal mining are heavier than on other 'productive' industry because of the incidence of workmen's compensation. The proportion of taxes on service industries is governed chiefly by the share of rent in net output.

TABLE 45. *The distribution of indirect taxes on production between industries*

Industry	*Net output**	*General taxes*	
	£ mn.	£ mn.	%
Manufacturing and building†	1,895	45½	2·4
Coal mining	130	6½	5·0
Agriculture	200	2½	1·3
Railways	136	5½	4·0
Road transport	120	2	1·7
Shipping and other transport	90	2	2·2
Commerce	455	33	7·3
Finance, insurance‡	75	4½	6·0
Professions	166	12½	7·5
Entertainment and betting	59	6½	11·0
Hotel and restaurant	65	17	26·0
Domestic service	101	—	—
Dwelling houses	205	—	—
Post Office‡	28	—	—
Government service	421	—	—
Foreign income	210	—	—
	4,356	137½	—

† Including mining, other than coal, and laundries.
‡ Excluding output sold to business.
* Including output of financial and postal services.

The total of £137·6 mn. allocated excludes, of course, duties on imported goods (£16·2 mn.).

iv. THE DISTRIBUTION OF GENERAL INDIRECT TAXES ACCORDING TO EXPENDITURE

In this section items of the national output will be translated into items of the national expenditure. In the course of this process (according to the balance of payments equation) imports and investment abroad will be substituted for exports and the foreign income.[1]

The net output of the service industries was either sold directly to the public, or exported, or sold to business. The net output of transport, commerce, finance, professions, entertainment, hotel and

[1] Imports and exports include both visible and invisible items.

restaurant, domestic service, dwelling houses, and the Post Office were allocated between these categories. (Government services are included in government expenditure.)

Sold directly to the public were part of the net output of transport (representing passenger services),[1] commerce other than in producers' goods or exports (divided between food, clothing, &c.), life insurance (about £40 mn.), medical and other professions (except professions such as accounting), the whole of entertainment and betting, 90 per cent. of the net output of hotels, &c. (divided between drinks and hotel services),[2] the whole of domestic service, dwelling houses, and the Post Office (as given in Table 45).

The net output of shipping (£70 mn.) and part of the net output of finance and insurance (£35 mn.) were included in invisible exports, part of the net output of commerce (£25 mn.) in the value of visible exports.

The services sold directly to the public represented a net output of £1,145 mn. on which the tax amounted to £77·7 mn.

Invisible exports include, apart from the above items, part of the net output of coal mining sold to ships (£15 mn.) and part of the net output of productive industry (about £50 mn.) sold to shipping or other service industries. The total tax on invisible exports is, therefore, estimated as £5·8 mn. As the services included in invisible exports were on account of all foreign trade, £2·5 mn. of this sum were paid by the buyers of our imports and only £3·3 mn. shifted to foreigners. Also £1·8 mn. were shifted to foreigners through commercial services included in the value of visible exports.

Deducting from the value of home-produced output direct services to private persons and the government, invisible exports and other services exported, we are left with £2,385 mn. on which the tax amounts to £54·8 mn. or 2·3 per cent. (Of this amount £500 mn. was exported.)

Imports were also analysed into consumers' and producers' goods.[3] Taxes on imports not allocated in Ch. XII came to £16·2 mn., taxes on invisible exports shifted back to imports to £2·5 mn., a total of £18·7 mn.

[1] Of railway receipts 55½ per cent. were for the transport of goods, 40 per cent. for passenger transport on private and 4½ per cent. on business account. Similar percentages for road transport were 50, .45, and 5 per cent. The net output of trams was on private expenditure.

[2] 10 per cent. of the expenditure on hotels, &c., fell on business, 20 per cent. on expenditure on drink (on account of public houses), and 70 per cent. was private expenditure on hotels and restaurants.

[3] Cf. Leak, *Journal of the Royal Statistical Society*, 1934, p. 545.

The taxes on home-produced and imported goods not allocated so far are, on the average, 2·8 per cent. of net output. This percentage was applied to the value of goods exported, goods bought by the government and investment goods, and also to the value of private expenditure not accounted for by the net output of services already allocated.[1] Some allowance was made for the fact that the net output of coal mining[2] is taxed at a higher, the net output of agriculture at a lower, rate than the average.

Altogether £20·3 mn. is the amount of tax shifted to residents abroad. £8·1 mn. fall on goods bought by the government out of current expenditure. £14·9 mn. fall on home investment[3] which is to be divided between private and government saving. Also £1·9 mn. fall on the services on non-profit-making bodies. Therefore a total of £13 mn. fall on public bodies.

A total of £120·5 mn. falls on private expenditure distributed in the following way:

	£ mn.		£ mn.
Food	26·0	Motoring	2·5
Drink and tobacco	11·0	Entertainment	8·0
Rent	3·0	Medical services	6·3
Fuel	7·0	Other consumption[4]	28·8
Clothing	16·0	Saving	11·9

Making an allowance for taxes falling on road transport, it can be estimated that of all indirect taxes on production £136 mn. fell on private consumption, £15 mn. on private saving, £13 mn. on public consumption, £4 mn. on government saving, and £25 mn. on residents abroad.[5] A total of £151 mn. was therefore paid by the private sector of the economy and £17 mn. by public bodies.[6]

v. The distribution of general indirect taxes to income groups

The above sums can be distributed according to income groups on the basis of information contained in Table 44. General indirect

[1] For example, expenditure on rent can be dissolved into the net output of dwelling houses and goods bought from industry.

[2] On the use of coal information can be found in *Ministry of Mines Reports* and P.E.P. *Report on the Gas Industry*.

[3] There is no tax on investment abroad.

[4] Including services of hotels and restaurants. There is no tax on the cash pay of domestic servants.

[5] It can be estimated from the same figures that of expenditure on roads £3·5 mn. benefited the government and £5 mn. residents abroad.

[6] These figures were used to estimate national expenditure at factor cost on p. 55.

taxes as a proportion of consumption and saving, adjusted for indirect taxes specifically on consumption and subsidies, have shown a variation within 5 per cent. of their average (3·2 per cent.). This variation is less than the possible margin of error; moreover, there is reason to assume that it would altogether disappear if certain broad groups of consumption (such as 'other consumption') were to be further analysed. It was therefore assumed that indirect taxes on production can be taken as proportionate to consumption and saving, adjusted for specific indirect taxes and subsidies. The distribution of these taxes is shown in Table 46.

For sake of better comparison the figures in Table 46 include *all* indirect taxes on production in general. It was estimated that £30·5 mn. duties on road transport fell on private expenditure, for which a proportionate allowance was made in the figures.[1]

That these proportions do not vary between income groups can be explained by *a priori* reasons. The most important taxes are employers' contribution to social insurance and rates. The proportion of tax on the net output of various industries does therefore depend on the share of wages and of rent in net output. Differences between industries are due to the different shares, particularly of rent, in net output; but even so, for 97 per cent. of the total national output the proportion of tax remained under 8 per cent. Expenditure on any commodity or service consists of production by a number of industries. Hence the tax percentages were averaged, reducing their spread round the average. For two-thirds of private expenditure the variation in the proportion of tax was within 10 per cent. of its average. This spread is further reduced when the proportions for various items of expenditure are averaged to obtain the proportions for the different income groups.

[1] It should be noted that, since benefits from expenditure on road traffic are allocated on the same basis, the measurement of redistribution is not affected by this assumption.

XV

TAXATION AND PRIVATE EXPENDITURE

AT this stage it is possible to summarize the results of Chs. V–XIV and examine how far producers' income was expended in taxation and how far it gave rise to consumers' income, that is, it was expended on private consumption or saved.

i. THE DISTRIBUTION OF PRIVATE EXPENDITURE

The distribution of producers' income was supplemented by social transfers, and a deduction was made for direct taxation in order to arrive at the distribution of available income given in Tables 37 and 38. Available income is either spent on consumption or saved. In either case, part of the expenditure accrues to the government in the form of indirect taxes (or is supplemented by the government in the form of subsidies), and only part is devoted to obtaining the services of factors of production, that is, to paying for consumption or saving, valued at factor cost.

Table 46 gives the distribution of actual available income as obtained in Ch. X. The distribution of indirect taxes specifically on consumption, shown in col. (2), was derived with reference to Fig. 10, as explained on p. 168. The distribution of subsidies is taken from Table 43. Col. (4) gives the distribution of actual consumption and saving, adjusted for specific indirect taxes and subsidies. Imputed saving is equal to imputed available income *less* death duties, &c., since there were no specific taxes or subsidies on saving. Col. (6) gives total consumption and saving, adjusted for specific indirect taxes and subsidies. Indirect taxes on production in general were taken, for reasons explained on p. 182, in proportion to consumption and saving, adjusted for specific taxes and subsidies. Their total, £151 mn., was estimated on p. 181. The last column shows the distribution of private expenditure on consumption and saving, valued at factor cost.

A summary of this table is given in Table 47, where the relative percentage distributions are also shown. Of specific indirect taxes £311 mn. were paid by the classes with incomes under £250, £156 mn. by those with £250 or more. Almost all subsidies accrued to the lower groups. Of general indirect taxes the lower groups paid £97 mn., the higher groups £54 mn.

Broadly speaking, the incidence of indirect taxes and subsidies has

TABLE 46. *Private expenditure at factor cost*

(In million £'s)

Range of incomes	*Actual available income*	*Specific indirect taxes*	*Subsidies*	*Actual consumption and saving, adjusted* [(1)−(2)+(3)]	*Imputed saving*	*Consumption and saving, adjusted* [(4)+(5)]	*General indirect taxes*	*Private expenditure at factor cost* [(6)−(7)]
£	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Under £125	1,360 8	154·3	17·4	1,223 9	15·0	1,238·9	50·2	1,188·7
125–150	328·7	40·6	6·0	294·1	6·9	301·0	12·2	288·8
150–175	321·5	39·4	5·3	287·4	5·7	293·1	11·9	281·2
175–200	273·2	33·5	3 9	243·6	4·9	248·5	10·1	238·4
200–250	351·9	42·9	4·1	313·1	6·0	319·1	12·9	306·2
250–300	220·3	26·9	0 2	193·6	2·5	196·1	8 0	188·1
300–400	245·9	30·0	0·0	215·9	4 3	220·2	8 9	211·3
400–500	137 9	16·7	—	121·2	3·8	125·0	5·1	119·9
500–600	93·4	11·1	—	82·3	3·5	85·8	3·5	82·3
600–800	116·7	13·7	—	103·0	5·1	108·1	4·4	103·7
800–1,000	76·3	8·7	—	67 6	4·0	71·6	2·9	68·7
1,000–1,500	123·6	13·8	—	109·8	6·6	116·4	4 7	111·7
1,500–2,000	79 0	8·3	—	70·7	4·1	74·8	3·0	71·8
2,000–2,500	54·3	5·3	—	49·0	2·6	51 6	2·1	49·5
2,500–3,000	40·5	3·6	—	36·9	1·7	38·6	1 6	37·0
3,000–4,000	57·3	4·6	—	52·7	1·6	54·3	2·2	52·1
4,000–5,000	38·0	2·8	—	35·2	0·3	35·5	1·4	34·1
5,000–6,000	27·9	1 9	—	26·0	−0·2	25·8	1·0	24·8
6,000–8,000	36·3	2·4	—	33·9	−1·1	32 8	1·3	31·5
8,000–10,000	22 8	1 5	—	21·3	−1·2	20·1	0 8	19·3
10,000–15,000	32·5	1·9	—	30 6	−3 0	27·6	1·1	26·5
15,000–20,000	15 9	0·8	—	15·1	−2·3	12·8	0·5	12·3
20,000–30,000	14·7	0·7	—	14·0	−2·9	11·1	0·5	10·6
30,000–50,000	11·1	0·5	—	10·6	−3·0	7·6	0·3	7·3
50,000–100,000	10·3	0·4	—	9·9	−4·2	5·7	0·2	5·5
100,000 and over	7·1	0 2	—	6 9	−5·9	1·0	0·0	1·0
TOTAL	4,098·0	466·5	36 9	3,668·4	54·8	3,723·2	150·8	3,572·4

not altered the relative distribution of income, the relative distribution of available income being very close to that of private expenditure. Though specific indirect taxes are regressive, even in comparison with available income, this is counterbalanced by the incidence of

TABLE 47. *Private expenditure at factor cost (Summary)*

Range of incomes	*Available income*	*Specific indirect taxes*	*Subsidies*	*General indirect taxes*	*Private expenditure*
£	£ mn.	£ mn.	£ mn.	£ mn.	£ mn.
Under £125	1,376	154·3	17·4	50·2	1,189
125–250	1,299	156·4	19·3	47·1	1,115
250–500	615	73·6	0·2	22·0	519
500–1,000	299	33·5	—	10·8	255
1,000–2,000	213	22·1	—	7·7	184
2,000–10,000	281	22·1	—	10·4	248
10,000 and over	70	4·5	—	2·6	63
TOTAL . .	4,153	466·5	36·9	150·8	3,572
Under £250	2,675	310·7	36·7	97·3	2,303
Over £250	1,478	155·8	0·2	53·5	1,269
£	%	%	%	%	%
Under £125	33·1	33·1	47·2	33·3	33·3
125–250	31·3	33·5	52·3	31·2	31·2
250–500	14·8	15·8	0·5	14·6	14·5
500–1,000	7·2	7·2	—	7·2	7·2
1,000–2,000	5·1	4·7	—	5·1	5·1
2,000–10,000	6·8	4·7	—	6·9	6·9
10,000 and over	1·7	1·0	—	1·7	1·7
TOTAL . .	100·0	100·0	100·0	100·0	100·0
Under £250	64·4	66·6	99·5	64·5	64·5
Over £250	35·6	33·4	0·5	35·5	35·5

subsidies.[1] This, of course, refers to broad income classes and is not necessarily true in individual cases. While indirect taxes fall heavily on all in the lower ranges of income, only in some cases is their burden alleviated by the incidence of subsidies, particularly the housing subsidy.

ii. THE DISTRIBUTION OF TAXATION

Table 48 gives the distribution of direct, indirect, and all taxes taken from the sources given above. The distributions are also given in cumulative percentages and as percentages of nominal unadjusted producers' income, that is, private income inclusive of transfers. The same set of figures is summarized in Table 49.

[1] As far as the comparison with available incomes goes.

TABLE 48. *Taxation*

Range of incomes	Amount of taxes			Cumulative distribution			Proportion of income*		
	Direct	Indirect	Total	Direct	Indirect	Total	Direct	Indirect	Total
£	£ mn.	£ mn.	£ mn.	%	%	%	%	%	%
Under £125	31·6	204·5	236·1	100·0	100·0	100·0	2·2	14 5	16·8
125–150	10·9	52·8	63·7	94·1	66·9	79·6	3·1	15·2	18·4
150–175	10·2	51·3	61·5	92·1	58 3	74 1	3·0	15·2	18·2
175–200	7·2	43·6	50·8	90·2	50·0	68·8	2·5	15·3	17·8
200–250	10·8	55·8	66·6	88·9	42·9	64·4	2·9	15·1	18·1
250–300	8·2	34·9	43·1	86·9	33·9	58·6	3·5	15·1	18·7
300–400	13·5	38·9	52·4	85·4	28·3	54·9	5·1	14·8	19·9
400–500	12·4	21·8	34·2	82 9	22·0	50 4	8 0	14·1	22·2
500–600	12·4	14·6	27 0	80 6	18 4	47 4	11·3	13·4	24·7
600–800	21·5	18·1	39 6	78 3	16·1	45·1	15 0	12 6	27·6
800–1,000	18·0	11·6	29·6	74·3	13·1	41 7	18 3	11 8	30·1
1,000–1,500	36·0	18·5	54·5	71·0	11·2	39 1	21 6	11·1	32·8
1,500–2,000	27·7	11·3	39·0	64·3	8·2	34 4	25·0	10 2	35·2
2,000–2,500	21·9	7·4	29·3	59·2	6·4	31 0	27 8	9·4	37·2
2,500–3,000	18·3	5·2	23·5	55·1	5·2	28 5	30·2	8·6	38·8
3,000–4,000	30·5	6·8	37 3	51·7	4·4	26·4	34·0	7·6	41·7
4,000–5,000	23·8	4·2	28·0	46·1	3·3	23·2	38·4	6·8	45·1
5,000–6,000	20·2	2·9	23·1	41·7	2·6	20·8	42·2	6·1	48·2
6,000–8,000	29·7	3·7	33·4	38·1	2·1	18·9	45·8	5 7	51·5
8,000–10,000	21·9	2·3	24·2	32·5	1·5	16·0	50 2	5·3	55·5
10,000–15,000	37·7	3·0	40·7	28·4	1 2	13 8	56·1	4·5	60·6
15,000–20,000	22·1	1·3	23·4	21·4	0·7	10·3	62·0	3·6	65·5
20,000–30,000	24·1	1·2	25·3	17·3	0·5	8 3	67·2	3·3	70·5
30,000–50,000	21·8	0·8	22·6	12·8	0·3	6·1	73 0	2·7	75·6
50,000–100,000	24·3	0 6	24·9	8·7	0·1	4 1	80·3	2·0	82·2
100,000 and over	22·9	0·2	23·1	4·2	0 0	2·0	94·9	0·9	95·8
TOTAL	539·5	617·3	1,156·8	—	—	—	(11·5)	(13·2)	(24·7)

* Related to nominal unadjusted producers' income. Specific indirect taxes as percentages of actual available income are given on p. 166. General indirect taxes were taken as 4·1 per cent. of expenditure on consumption and saving, adjusted for specific indirect taxes and subsidies.

TABLE 49. *Taxation (Summary)*

Range of income	*Amount of taxation*			*Relative distribution*			*Proportion of income**		
	Direct	*Indirect*	*Total*	*Direct*	*Indirect*	*Total*	*Direct*	*Indirect*	*Total*
£	£ mn.	£ mn.	£ mn.	%	%	%	%	%	%
Under £125	31·6	204·5	236·1	5·9	33·1	20·4	2·2	14·5	16·8
125–250	38·9	203·5	242·5	7·2	33·0	21·0	2·9	15·2	18·1
250–500	34·3	95·6	129·8	6·3	15·5	11·2	5·3	14·7	20·0
500–1,000	51·9	44·3	96·2	9·6	7·2	8·3	14·8	12·6	27·4
1,000–2,000	63·7	29·8	93·5	11·8	4·8	8·1	23·0	10·8	33·8
2,000–10,000	166·2	32·5	198·7	30·8	5·3	17·2	37·2	7·3	44·5
10,000 and over	152·9	7·1	160·0	28·4	1·2	13·8	68·6	3·2	71·8
TOTAL . .	539·5	617·3	1,156·8	100·0	100·0	100·0	(11·5)	(13·2)	(24·7)
Under £250	70·6	408·0	478·6	13·1	66·1	41·4	2·6	14·9	17·4
Over £250	468·9	209·3	678·2	86·9	33·9	58·6	24·1	10·7	34·8

* See note, Table 48.

It can be seen that of all taxes falling on private incomes £479 mn. were paid by the classes with incomes under £250 and £678 mn. by the classes with incomes over £250, a total of £1,157 mn. 13 per cent. of direct taxes, 66 per cent. of indirect taxes, and 41 per cent. of all taxes were paid by the lower income classes; 87 per cent. of direct, 34 per cent. of indirect, and 59 per cent. of all taxes by the higher

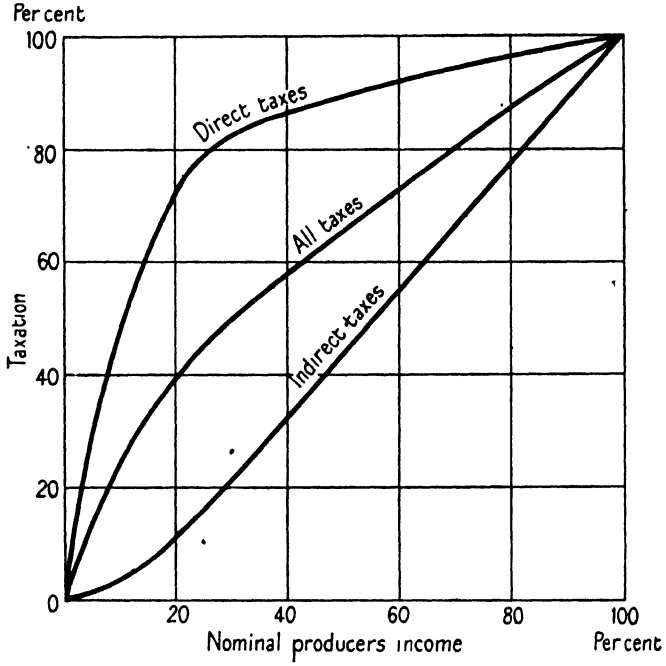


FIG. 11. The distribution of taxation.

income classes. Of the latter classes, persons with incomes of £1,000 or over paid 71 per cent. of direct, 11 per cent. of indirect, and 39 per cent. of all taxes. About one-half of direct taxation was paid from incomes over £3,000, one-half of indirect taxation from incomes over £175, and one-half of all taxes from incomes over £400.

The relative distribution of taxation is represented in Fig. 11 in the form of Lorenz curves. The proportion of nominal producers' income is shown along the horizontal, the proportion of taxation along the vertical axis. If taxes were proportional to income the resulting diagram would be a diagonal straight line. In fact the curves indicate unequal distributions, direct taxes being progressive, indirect taxes regressive, as proportion of income. Total taxation is progressive.

The degree of progressiveness or regressiveness of taxation can be expressed by the Lorenz index of inequality, *g*. This index was found to be 1·21 for direct, −0·17 for indirect, and 0·56 for all taxes.[1]

The same facts can be also obtained from the last columns of Tables 48 and 49. Direct taxation on the whole is highly progressive, taxation as proportion of income rising from 2 to 95 per cent., with an average of 11·5 per cent. (The proportion in the highest ranges of income is, of course, dependent on the method of allocating death duties.) The gradual rise in the proportion of taxation is only slightly broken in the range £150–250 as a result of flat-rate social insurance contributions. Indirect taxes, on the other hand, are regressive.[2] The proportion of indirect taxes falls from 15 to 1 per cent., with an average of 13 per cent. The proportion of indirect taxes paid in the highest ranges of income is obviously low because of the high proportion of income paid in direct taxation. All taxes taken together are progressive, with only a slight break in the gradual rise of the proportion of taxation between £150 and £250.[3] The proportion rises from 17 to 96 per cent. with an average of 25 per cent. The same proportions are represented in Fig. 12.

The proportion of income paid in taxation rises slowly from 17 per cent. It is about 20 per cent. for an income of £350, 30 per cent. for £900, 40 per cent. for £3,000, 50 per cent. for £6,000, and 60 per cent. for £10,000. It is interesting to note that the average proportion of income paid in taxation by the classes over £250 was exactly twice the proportion paid by the classes under £250.

The distribution of total taxation is satisfactory, if the criterion of judgement is the progressiveness of the proportion of income paid in taxation. From the point of view of redistribution of income all taxes should be considered together.[4] Looking at the tax system as a whole the regressive nature of indirect taxation is more than balanced by the incidence of direct taxes. But this is looking at the

[1] For the measurement of the index of inequality see p. 69. Progressive taxation is expressed by a positive, regressive by a negative, index. If we take the proportion of taxes paid out of each £ of income, the index is equal to the ratio of the mean difference of such proportions to the average proportion.

[2] It must be borne in mind that the composition of the class under £125 is different from the composition of other classes, and therefore the proportion of taxation paid by that class is not, strictly speaking, comparable with that of other classes. See p. 153 n. 1, above.

[3] It should be pointed out that all figures shown are subject to error, and that thus the degree of regressiveness between the limits indicated might be less than the margin of error.

[4] Cf. p. 2 n. 6.

problem from the point of view of *vertical* redistribution only, that is, redistribution between income groups.

The tax system is on the whole progressive, but when considering the economic effect of the system or *horizontal* redistribution (that is, redistribution between families of different types) the effects of the various taxes cannot be considered jointly. Indirect taxes were

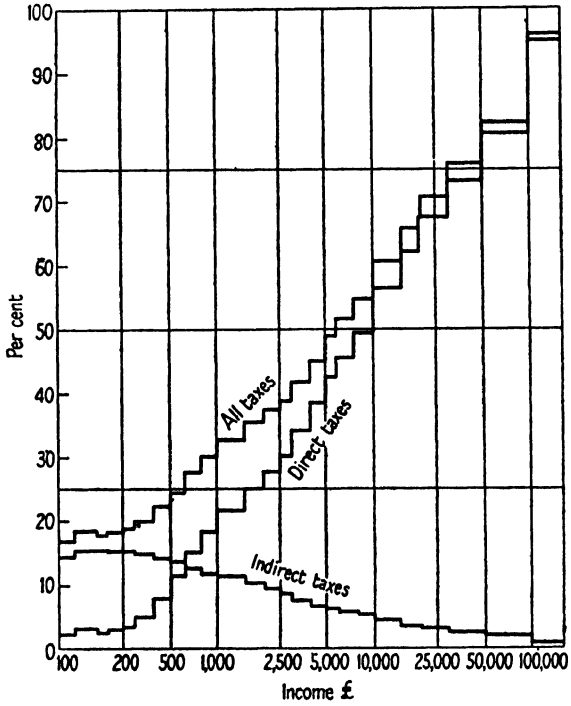


FIG. 12. Taxation as percentage of income.

divided into three categories as taxes falling on necessities, semi-luxuries, and luxuries.[1] The effect of taxes on necessities on the horizontal redistribution is regressive; large families pay more in such taxes than small families. In the lower ranges of income this is not counterbalanced by other factors, such as income-tax allowances. Again, the amount of taxes paid on semi-luxuries does not vary much with the size of the family, but there is evidence that these taxes, in so far as they are paid by the poor, induce a cut in the expenditure on necessities.[2]

[1] Cf. p. 158.

[2] Expenditure on semi-luxuries is mainly by earners, while expenditure on

To sum up, the figures given in Tables 48 and 49 enable the forming of an opinion as to the redistributive effect of the tax system as a whole. But it is possible to devise alternative systems of taxation the redistributive effect of which would be exactly the same and which, at the same time, would be preferable to the actual system on grounds other than those considered here.

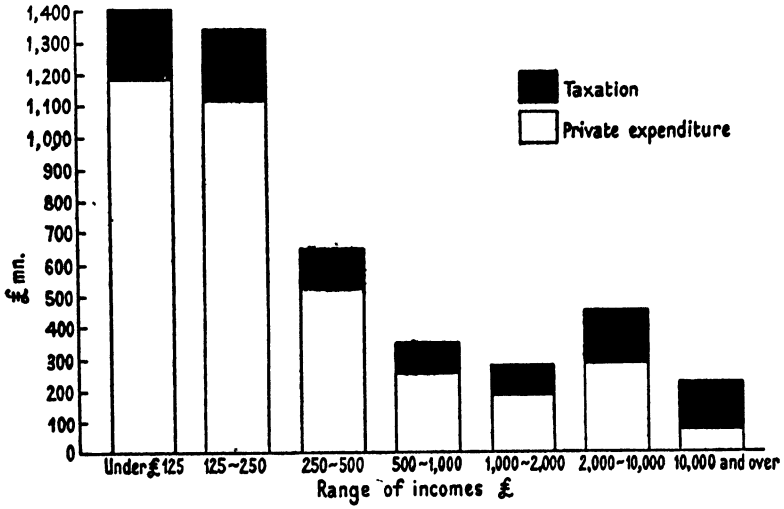


FIG. 13. The division of income.

Private incomes are devoted either to taxation (with an allowance for subsidies) or to private expenditure valued at factor cost. The division of private incomes into these categories is represented in Fig. 13. The columns shown for the various income classes are proportional to private income (that is, nominal unadjusted producers' income) and are divided according to the proportions which can be derived from the above tables.

iii. THE DISTRIBUTION OF TAXATION AND PRIVATE EXPENDITURE BETWEEN INCOME CATEGORIES

It would be interesting to inquire at this stage how far incomes of different type—rent, profits, interest, salaries, and wages—were devoted to taxation, consumption, and saving. There is, of course, some connexion between vertical redistribution and redistribution

necessities is mainly out of housekeeping money. There is evidence that with an increase in the size of the family housekeeping money does not increase. It is housekeeping money which can be looked upon as a residue and not pocket money retained by the earners. Cf. C. Madge, *War-time Pattern of Saving and Spending.*

between income categories, since certain types of income, such as wages, are preponderantly in the lower ranges of income and certain other types, such as profits, in the higher ranges. But, apart from differences due to income size, income in the different categories is taxed at different rates. The distribution of taxation between the different types of income can easily be obtained if certain assumptions are made.

An assumption has to be made concerning persons who derive income from different sources, say, wages and interest. It is possible to regard wages as the main income and interest as marginal income, or the other way round. In the first case taxes paid out of interest would be calculated at marginal rates, in the latter case taxes on wages would be so calculated. Instead, it will be assumed that taxes fall on both types of income at the average rate.[1]

Incomes were classified as actual rent, profits and interest; imputed rent, profits and interest; salaries, and wages, with social income (transfers) added as the fifth category.

It can be estimated with reference to Ch. VI and the distribution of unearned income in Table 13 that of income tax and surtax on personal incomes £109 mn. fell on earned and £178 mn. on unearned incomes. The latter fell wholly on the first category of income. Earned profits[2] amounted to £482 mn. (of which £120 mn. are estimated to be in the lower ranges of income) and salaries to £1,066 mn. (of which £500 mn. are estimated to be in the lower ranges of income).[3] On these considerations £214 mn. is estimated to be on profits, &c., £71 mn. on salaries, and about £1–2 mn. on wages.[4]

Income tax on non-personal incomes, £73·5 mn., falls wholly on imputed income. Social insurance contributions are divided between wage and salary earners on the basis of the numbers insured given on pp. 272–9. N.D.C. is divided between actual and imputed profits proportionately. Stamp duties on cheques, receipts, &c., are allocated with reference to income size. Death duties and stamp duties on the

[1] Out of an income, I, proportion p is of type A. Tax payable would amount to T if the whole of income I were of type A. On the assumption stated pT is the tax falling on pI, the actual amount of income of type A.

[2] Cf. p. 61. (Excluding the amount of correction of Schedule A assessments.)

[3] On the basis of the distribution of wages and salaries discussed in Appendix F it is estimated that £1,625 mn. wages were in the lower, £100 mn. in the higher, ranges of income; £500 mn. salaries in the lower and £566 mn. in the higher ranges. The distribution of earned profits is obtained as a residue and seems consistent with known facts.

[4] With reference to the distribution of personal income tax and surtax given in Table 21.

transfer of property are allocated to actual and imputed rent, profits, and interest with reference to income from capital. In the case of death duties an allowance was made for the fact that imputed profits are on the average in higher ranges of income (and capital) than actual profits.

Indirect taxes, specifically on consumption, and subsidies were allocated with reference to the distribution of *actual* available income and income size, on the basis of percentages shown on p. 166. Indirect taxes on production in general were taken as being the same proportion of consumption and saving, adjusted for specific taxes and subsidies, in each income category, but a somewhat lower proportion of imputed income, since all of this was saved.[1]

The results are shown in Tables 50 and 51. It can be seen that rent, profits, and interest came to 34·5 per cent., and wages to 37 per cent. of private incomes, but they came to 29·5 and 40 per cent. respectively, of private expenditure.

TABLE 50. *The distribution of taxation between income categories*

	Private income	*Taxation*			
		Direct	*Indirect*	*Total*	
	£ mn.	£ mn.	£ mn.	£ mn.	%
Rent, profits, and interest:					
Actual	1,375	314	158	472	*34*
Imputed	244	92	6	98	*40*
Salaries	1,066	83	151	234	*22*
Wages	1,725	51	258	309	*18*
Social income	282	—	44	44	*16*
TOTAL	4,692	540	617	1,157	(*25*)

Gross personal savings were estimated on the basis of the figures shown in Table 41. The proportion of wages saved corresponds to the proportion saved in the lower ranges of income, the proportion of salaries saved corresponds to that for middle-class incomes. All imputed savings, as well as death duty, &c., payments were allocated to rent, profits, and interest.

By the method outlined above direct taxes paid out of the interest on the national debt can also be estimated. Interest on the national debt, excluding interest paid to foreigners, government departments, or public charities, came to £186 mn.[2] Of this, £140 mn. was part of personal incomes and £46 mn. was received by life funds or financial

[1] That is, spent on investment goods.

[2] Cf. Ch. V, § ii.

TABLE 51. *The distribution of private expenditure between income categories*

	Private income	*Available income*	*Consumption*	*Saving*	*Private expenditure*
	£ mn.	£ mn.	£ mn.	£ mn.	£ mn.
Rent, profits, and interest	1,619	1,213	845	207	1,052
Salaries	1,066	983	764	75	839
Wages	1,725	1,674	1,358	81	1,439
Social income	282	282	242	—	242
TOTAL	4,692	4,152	3,209	363	3,572
	%	%	%	%	%
Rent, profits, and interest	34·5	29	26	57	29·5
Salaries	22·5	24	24	21	23·5
Wages	37	40	42·5	22	40
Social income	6	7	7·5	—	7
TOTAL	100	100	100	100	100

Note. Consumption, saving, and private expenditure are valued at factor cost.

institutions. Income tax and surtax on the former came to £32 mn., income tax on the latter to £12 mn., a total of £44 mn. Death duties payable on personal holdings of the debt can be put at £12 mn. on the basis of proportions of net capital held in the form of government bonds in the various classes. Another £11 mn. must be added for death duties paid on share values or life policies reflecting the bond holdings of life insurance or other companies. The total of death-duty payments is therefore £23 mn., and the total of all direct taxes paid out of interest on the national debt £69 mn. or 37 per cent. of the total interest.[1]

[1] This is the *average* rate of tax on interest on the national debt, and not the *marginal* rate (to which reference was made on p. 44) which is of course higher.

XVI

PUBLIC EXPENDITURE ON GOODS AND SERVICES

TOTAL expenditure consists of private expenditure on consumption and saving, and government expenditure on consumption and saving. The distribution of private expenditure on consumption and saving (valued at factor cost) was obtained in the preceding chapters; it remains to determine the distribution of public expenditure on consumption and saving.

The consumption of the government consists of current expenditure on goods and services, which is real expenditure (as against transfer expenditure). The saving of the government is equivalent to the balance of the government accounts.[1] To consumption and saving by the government must be added consumption out of the investment income of public charities which has been included in public income from property and trading.

i. 'REAL' EXPENDITURE

In Ch. II government expenditure was classified as social expenditure, economic expenditure, expenditure on defence, other common services, and general administration. Expenditure was also divided into transfer and real expenditure. All transfer expenditure, including expenditure on subsidies, came out of social expenditure and is shown in Table 3, above. Of social expenditure £234 mn. can be regarded as expenditure on goods and services (including the administrative and financial costs of transfer expenditure); the remaining categories of expenditure consist wholly of real expenditure, making the total £680 mn., as shown in Table 52.

Real public expenditure is here divided into expenditure on 'goods' and expenditure on 'services'. The former is defined as expenditure on which indirect taxes on production in general do fall, the latter on which such taxes do not fall. The bulk of 'services' consists of payments of salaries and wages to government employees. Of loan charges, interest is included in 'services', amortization quotas in 'goods'. All expenditure on rent, maintenance, and so on is included in 'goods', but expenditure on agricultural subsidies and imputed expenditure are included in 'services'.

The division of real expenditure between 'goods' and 'services',

[1] Cf. p. 29, above.

TABLE 52. *Public expenditure on goods and services*

(In million £'s)

Item	*Valued at market prices*			*Valued at factor cost**
	'Goods'	*'Services'*	*Total*	
Education	32·0	87·1	119·1	118·2
Public health	29·8	30·0	59·8	58·9
Lunacy	4·5	9·0	13·5	13·4
Poor relief	1·5	15·0	16·5	16·5
Miscellaneous	—	0·4	0·4	0·4
Administration of transfers†	1·2	27·2	28·4	28·4
Social expenditure	69·0	168·7	237·7	235·8
Roads and bridges‡	47·5	40·0	87·5	86·2§
Other transport expenditure	1·7	0·8	2·5	2·4
Agriculture and fishing‖	4·5	19·8	24·3	24·2
Other economic expenditure	0·2	6·7	6·9	6·9
Economic expenditure	53·9	67·3	121·2	119·7
Defence	148·3	91·9	240·2	236·0
Lighting of streets	} 4·0	} 6·3	6·7	} 10·2
Fire brigades			3·6	
Police	5·0	23·6	28·6	28·5
Local justice and prisons	0·5	2·5	3·0	2·9
Common services	9·5	32·4	41·9	41·6
General administration¶	6·0	32·5	38·5	38·3
GOVERNMENT CONSUMPTION	286·7	392·8	679·5	671·4
Government saving**	86	—	86	83
Non-profit-making bodies	10	31	41	39
PUBLIC EXPENDITURE	383	424††	807	793

* But *not* allowing for taxation on road transport.
† Including workmen's compensation. ‡ Including imputed interest on roads.
§ Of which £5 mn. benefits residents abroad and £4 mn. benefits the government.
‖ Including invisible sugar subsidy. ¶ Including imputed rent of buildings.
** Adjusted for three-years-average death-duty receipts instead of actual receipts.
†† Of this the administrative cost of workmen's compensation (£2·5 mn.) is included in private output.

as given in Table 52, is based on a detailed study of financial statistics, except that the figures for public health are, for lack of other information, equally divided between the two categories.[1] Altogether 40–45

[1] Almost all expenditure on goods included in administration is connected with the maintenance of buildings. In the case of road expenditure, actual and imputed interest are included in services.

per cent. of government expenditure was on 'goods' and 55–60 per cent. on 'services'.

The rate of general indirect taxation, excluding taxes on road traffic, falling on goods bought by the government was estimated on p. 181 as 2·8 per cent. This percentage was deducted from expenditure on goods in order to arrive at government expenditure valued at factor cost (but not allowing for taxes on road traffic), which is given in the last column of Table 52.

This table also gives government saving[1] and expenditure on consumption out of the investment income of public charities.[2] The latter has been arbitrarily divided between goods and services.

ii. The classification of real government expenditure

Text-books on public finance discuss the nature of government expenditure to a far lesser extent than the nature of its revenue. It is possible to build up a system of definitions which point to the economic symmetry between revenue and expenditure.[3] It is possible to distinguish between purchase price and tax; also between selling cost and grant. The distinction between taxes and real government income on the revenue side corresponds to a distinction between transfers and real government expenditure on the expenditure side. Taxes are then divided into direct and indirect taxes and, similarly, transfers into direct and indirect transfers (subsidies). But whereas the incidence of taxation has been widely discussed and its theory can easily be applied to the incidence of transfers, very little has been said of the incidence of real government expenditure.

Dr. Dalton distinguished expenditure for the purpose of preserving social life and expenditure for the purpose of improving it.[4] This distinction corresponds to one between expenditure on current and on capital account rather than to one according to which expenditure on current account could be classified in a practical case. Dr. Dalton further classifies expenditure as expenditure conferring special benefits on particular members of the community, common benefits on all members, and benefits partly common, partly specific. This is similar to the distinction between divisible and indivisible benefits made below. But Dr. Dalton does not answer the main problem; he states that the relative advantages of common benefits cannot be estimated.[5]

[1] Cf. p. 44.
[2] Cf. p. 73.
[3] Cf. Ch. II, § ii.
[4] *Public Finance* (9th ed.), pp. 201–4.
[5] Ibid., p. 233.

Professor Shirras distinguished primary and secondary expenditure, but his definition is based on political and ethical rather than on economic criteria.[1]

A distinction will be made here between expenditure that can be allocated to different individuals on the cost principle and expenditure that cannot. This definition will become more clear when the actual government expenditure is classified below.

Expenditure on all services which are, or can be, provided by private enterprise should be allocated on the cost principle. It is also evident that private enterprise is unable to provide services which, for technical reasons, are available to all, whether one contributes to them or not. The two criteria, that is, possibility of provision of a service by private enterprise and possibility of exclusion, seem to overlap in almost all cases.[2] The expenditure on such services will be allocated on the cost principle.

The most difficult question is to decide whether two services—one provided by the government, the other by private enterprise—are the same or not. The most conspicuous case is that of compulsory education. In certain aspects schools run by public authorities and private schools are exactly alike. But it can be argued that a different service has been created by making education compulsory, since it is no longer possible to apply the criterion of exclusion.

In such cases recourse might be taken to a different approach. It can be said that the marginal cost of the education of one child is almost exactly equal to the average cost.[3] It will, therefore, be assumed that all children receiving the same education benefit equally.

Services like sewage and refuse collection could be provided by private enterprise. Even the government could exclude any person from the benefits of these services. In this case it will be also assumed that all persons benefiting derive an equal benefit from the service.

But a different question may be asked. Supposing a person is excluded from the benefits of a service, say sewage and refuse collection, is only the person excluded damaged or are others damaged as well? (The same question can of course be asked in connexion with ex-

[1] *The Science of Public Finance* (3rd ed.), vol. i, p. 90: 'Primary expenditure includes all expenditure which Governments worthy of the name of Government are obliged above everything else to undertake. . . . Secondary expenditure includes social expenditure. . . .'

[2] In some cases the possibility of exclusion exists, but provision by the government is more efficient than by private enterprise because marginal costs are lower than average costs.

[3] This refers to long-run costs and not to costs in the short run when excess capacity might exist.

penditure on education or transfer expenditure as well.) It has to be decided whether the damage to other persons is of the same order of magnitude as the damage to the excluded person himself.

It appears that in the case of all social expenditure the direct damage to a person excluded would be greater than the indirect damage to others. The exception is expenditure on disease and lunacy, in which case the damage done indirectly to others would be greater. It is obvious that by the expenditure on disease and lunacy the healthy members of the community benefit to a far greater extent than those on whom the money is actually spent. It is also clear that no member of the community could be excluded from the benefits this service confers. Once persons suffering from disease are separated from healthy persons, all healthy persons benefit, whether willing to pay for the benefit or not. It is, therefore, essential that such services should be provided for by taxation. It follows that all social expenditure can be allocated according to the cost principle, but expenditure on disease and lunacy confer indivisible benefits upon the community.

The cost of transfer expenditure (the cost necessary to collect money for and to administer transfer expenditure) is also assumed to benefit those who receive transfer benefits.[1] It is assumed that the benefit is proportional to transfer payments received, allowing for the different cost ratios of different types of transfer expenditure.

Of economic expenditure road expenditure is the most important. The use of roads is twofold; they are used for traffic purposes (commercial and private), and are in local communal use by pedestrians, cyclists, and so on.[2] The cost of the communal use of roads falls in the first instance on local communities and of the traffic use on the owners of motor vehicles.

'The relative contributions which different owners should pay can be quite objectively determined. In equity it is clearly desirable that contributions should be proportionate to the wear and tear caused but neutral between different types of vehicle. . . . A combination of licence duties based on weight or horse power, plus a fuel tax, appears to fulfil these requirements perfectly. It is in fact the nearest equivalent to a toll, the licence duty constituting a charge for the right of using the road, and the petrol tax being roughly proportionate to usage.'[3]

On the basis of this argument it will be assumed that the benefits

[1] This cost still excludes costs deemed to be borne by the community, such as the cost of social legislation.

[2] The best economic analysis of road expenditure is in U. K. Hicks, *The Finance of British Government*, ch. viii. Her analysis is closely followed here.

[3] op. cit., p. 181.

conferred by the traffic use of roads are *proportional* to taxes falling on motoring.[1]

It remains to determine the total cost of the traffic use of roads. Total expenditure on roads is divided between traffic and communal use by taking the latter as accounting for 25 per cent. of total expenditure.[2] The cost on account of road traffic also includes expenditure on police. Total expenditure on police services has similarly to be divided between traffic and communal use.[3] For the sake of simplicity it is assumed, and this cannot be far wrong, that expenditure on police on account of road traffic was equal to expenditure on roads on account of communal use. On this basis total expenditure on road traffic on current account, valued at factor cost, came to £86 mn. in 1937, which sum includes expenditure on maintenance, depreciation (in so far as roads were not maintained physically), interest on loans outstanding against roads built from borrowing, and imputed interest on roads owned by public authorities.

Taxes on road traffic (motor-vehicle duties, petrol tax, and duties on imported motor vehicles) also came to £86 mn. in 1937.[4] Since total benefit and total taxation on account of road traffic are equal and, as it was argued above, benefits conferred upon individuals and taxation paid by them are proportional, the benefit on account of road traffic accruing to any member of the community, and calculated at cost, is equal to the amount of road taxation falling upon him. In the case of private motoring, the incidence of both taxes and benefits is directly on the owner, in the case of commercial traffic it is on the ultimate consumer. From the point of view of redistribution, expenditure on road traffic and taxation on motoring can be conveniently regarded as offsetting each other.[5]

Economic expenditure, other than on roads, can be dealt with

[1] It is assumed that Mrs. Hicks in the statement quoted refers to the actual and not to an ideal system of motor taxation.

[2] Ibid. There are certain difficulties in determining this proportion. The definition of communal use is somewhat arbitrary. It is possible that the percentage given is somewhat high as certain types of communal use, such as parking facilities, are attributable to road traffic.

[3] Cf. p. 201, below.

[4] Cf. p. 147, above.

[5] That total taxation and expenditure for traffic purposes was equal can be regarded as purely accidental and is not necessarily true for other years. It is still true to say that taxation on motoring was taxation and not the price paid for the use of roads. It is merely a statistical convenience that such taxes and expenditure can be cancelled. For purposes of illustration taxes on commercial road traffic were allocated on an arbitrary basis in Table 48 and expenditure will be allocated on a similar basis. But any assumption regarding the allocation of these does not affect the measurement of redistribution.

briefly. All such expenditure can hardly be said to have been of direct service to the consumer. Expenditure on shipping, civil aviation, and agriculture were almost exclusively producers' subsidies,[1] the result of which (at any rate, in the long run) is to push a greater proportion of the population into certain industries than would otherwise be the case. There is no reason to suppose that, after a time, incomes in certain industries should be higher than they would be normally, though the first impact of such expenditure (which was still felt in 1937) does benefit producers in the subsidized industries.

The important consideration is that such expenditure was incurred not so much to benefit producers in certain industries but to expand (or save from contraction) certain industries deemed to be essential from the point of view of the community on other than economic criteria. Most of such expenditure (on shipping, civil aviation, and agriculture) was in anticipation of war and, from our point of view, should be regarded as expenditure on defence. In the case of agriculture other objects, aesthetic and social, were also considered.

The cost of the administration of economic activity and expenditure on the training of labour or research ought to be included with expenditure from the benefit of which nobody could be excluded. The most conspicuous case of expenditure conferring indivisible benefits is, of course, expenditure on defence services. Once such services are provided no individual in the country can be excluded from its benefits. This argument implicitly assumes—an assumption which is legitimate in a democratic community—that defence is beneficial in the sense that everybody would be worse off as a consequence of inadequate defence.

Expenditure on police is partly on account of road traffic, partly to protect property, and partly to protect persons. Expenditure on fire brigades is partly to protect property, and partly to protect persons.

It will be assumed that expenditure on police on account of road traffic was equal to expenditure on roads on account of communal use; that expenditure on police for the protection of property was equal to expenditure on fire brigades for other than the protection of property. Expenditure on the communal use of roads, on fire brigades for the protection of persons, and on police for the protection of persons, expenditure on street lighting and expenditure on general administration confer indivisible benefits. Expenditure on the police or fire brigades for the protection of property confer benefits upon property owners only.

[1] Cf. p. 170, above.

In addition to government expenditure on consumption, the saving of the government came to £83 mn. (at factor cost) in 1937. In other words, property in communal ownership increased by that amount. The benefit from government saving also confers indivisible benefits.

Finally, expenditure by public charities was assumed to be divided between divisible and indivisible benefits proportionately to government expenditure.

The classification of public expenditure on goods and services on the basis of the above assumptions was the following:

	£ mn.
Divisible benefits:	
Education	118·2
Public Health, excluding disease	58·0
Public Assistance, indoor relief	16·5
Miscellaneous social expenditure	0·4
Cost of social transfers	28·4
Road traffic	86·2
Protection of property	3·6
Public charities	18
TOTAL	329[1]
Indivisible benefits:	
Current expenditure	360·2
Government saving	83
Public charities	21
TOTAL	464
GRAND TOTAL	793

iii. THE DISTRIBUTION OF DIVISIBLE BENEFITS

Each category of divisible benefits was distributed between income groups according to the following methods; the results are shown in Table 53.

EDUCATION

After the various overhead expenses of the educational services (such as teachers' pensions) were allocated, expenditure on education was divided between the different types in the following way:

	£ mn.
Elementary education	83·4
Secondary education	16·6
Other higher education	10·2
Universities	3·0
Approved schools	0·8
Museums, libraries, &c.	4·2
TOTAL	118·2

[1] £320 mn. excluding road expenditure beneficial to the government or residents abroad.

TABLE 53. *The distribution of divisible benefits*

(In million £'s)

Range of incomes	*Education*	*Public health*	*Public assistance, &c.*	*Cost of transfers*	*Road traffic**	*Protection of property*	*Public charities*	*Total*
£								
Under 125	43 5	26 3	16 7	22·0	15 0	0 3	8·8	132·6
125–150	17 1	7·2	0·1	2·3	3 7	0·1	2·2	32·7
150–175	14 6	6·0	0·1	1·9	3·7	0·1	1·8	28·2
175–200	10·8	4·5	0 0	1·0	3 4	0·1	1 3	21 1
200–250	12 7	4·9	0·0	1 0	4 3	0·1	1 5	24·5
250–300	6 8	2·6	—	0 1	4 9	0·1	0 8	15·3
300–400	6 8	2·4	—	0 1	6·7	0·2	0 8	17·0
400–500	3·6	1·1	—	—	5·3	0·2	0·4	10·6
500–600	0·3	0·6	—	—	3·5	0·1	0·1	4·6
600–800	0·2	0 7	—	—	5·6	0·2	0·1	6·8
800–1,000	0·1	0 4	—	—	3·6	0·2	0·1	4 4
1,000–1,500	0·5	0 5	—	—	4·7	0·3	0·1	6·1
1,500–2,000	0·3	0 2	—	—	2·8	0 2	0·0	3·5
2,000–2,500	0·2	0 1	—	—	1·8	0·2	0·0	2·4
2,500–3,000	0·2	0 1	—	—	1·3	0·1	0·0	1·7
3,000–4,000	0 2	0 1	—	—	1 7	0·2	0·0	2·2
4,000–5,000	0·1	0·1	—	—	1·0	0·1	0·0	1·3
5,000–6,000	0·1	0 1	—	—	0 7	0 1	0·0	0·9
6,000–8,000	0·1	0·1	—	—	0·8	0 2	0·0	1·0
8,000–10,000	0·0	0 0	—	—	0·5	0·1	0·0	0·7
10,000–15,000	0 0	0·0	—	—	0·7	0 2	0·0	0·9
15,000–20,000	0 0	0·0	—	—	0·3	0·1	0·0	0·4
20,000–30,000	0 0	0 0	—	—	0 3	0·1	0·0	0 4
30,000–50,000	0 0	0·0	—	—	0·2	0·1	0·0	0·3
50,000–100,000	0·0	0·0	—	—	0·2	0·1	0·0	0·3
100,000 and over	0·0	0·0	—	—	0·1	0·1	0·0	0·2
TOTAL . .	118·2	58·0	16·9	28·4	77·0	3·6	18·0	320·1

* Benefits conferred by the use of roads for travel purposes (private cars, buses, &c.) was derived by interpolation from figures in Table 42. For other benefits from road traffic cf. Table 46.

Three-quarters of the total is accounted for by expenditure on elementary education. Education is compulsory between the ages of 5 and 14 years. The age distribution of pupils in grant-aided schools, according to type of school, can be found in *Reports of the Board of Education*.[1] The census of pupils is taken in March, and therefore a certain number over 5 are not at school yet and a certain number over 14 have not finished their courses. It is best to deal therefore with children aged 6 to 14 only.

In grant-aided secondary schools pupils are classified into free and paying pupils. Almost all free pupils came from public elementary schools; the number paying partial fees was negligible; the number paying full fees was further analysed into those who came from public elementary schools and others. Almost all pupils in junior technical schools were ex-public elementary school pupils.

Considering the age distribution of pupils in each of these categories it is found that the number of children aged 6–14 who were at public elementary schools or passed from such schools to grant-aided secondary schools was 92·7 per cent. of the corresponding number in the population; in other words, 7·3 per cent. of the population did not avail themselves of the services offered by public elementary education.[2] Since persons with incomes over £400 accounted for the same percentage of the population, it was assumed that the classes with an income less than £400 sent their children to public elementary schools and the other classes did not.

The cost of non-elementary education given to ex-public elementary school pupils under the compulsory age limit, and valued at the average cost of elementary education, is estimated at £3·5 mn. and therefore a total of £86·9 mn. was the cost of compulsory education given to the classes with income under £400. This amount was distributed in proportion to the number of persons with incomes under £400, allowing for the fact that the relative proportion of families, and of children, is less in the class under £125.

It was also estimated that the cost of secondary education given to other than ex-public elementary school children was £3·3 mn. The proportion of the population with incomes £400–500 was 2·2 per cent. and, since the proportion of non-ex-elementary pupils receiving grant-aided secondary education was less, it was assumed that the above sum benefits persons in that range of income.

[1] The statistics for England and Wales were used throughout this part as being relevant for the whole country. Certain conditions differ in the educational system of Scotland, but these can have no great influence on the total.

[2] This percentage varied between 6·4 and 7·9 for the different ages.

Some information is available on the origin of pupils in secondary schools and universities according to social classes[1] which can be made to correspond to income classes. From such data it is possible to estimate an elementary school child's chance of receiving a secondary education free, or paying for it, according to income groups. These chances varied round their average from 0·5 to 2·3 in the former and from 0·1 to 4·5 in the latter case.[2] On this basis the excess of the actual expenditure on ex-elementary school pupils in secondary schools over the £3·5 mn. estimated above (that is, £9·9 mn.) was allocated to the various classes with an income under £400.

Of expenditure on higher education, other than secondary, about £6·6 mn. was on account of part-time pupils in technical schools, almost all in employment and earning less than £125. The rest was distributed in proportion to expenditure on elementary education.

It is also estimated that of university students 28 per cent. were ex-elementary school pupils. The chance of an elementary school pupil of becoming a university student was therefore 0·8 per cent., while the chance of a boy or girl in the income classes above £400 was 25 per cent. The latter percentage can be taken as 10 for £400–1,000, 50 for £1,000–2,000, and 100 for £2,000 and over. On this basis the cost of university education has been distributed.

The cost of approved schools, museums, libraries, &c., was allocated in proportion to the number of persons in each income class.

PUBLIC HEALTH

It is estimated that about one-twelfth of the refuse collected is trade refuse.[3] This proportion would be higher if offices and other business premises were also included. It was assumed that one-seventh of the expenditure on sewage and refuse collection is on business, the rest on private account. Of the total of £21·1 mn. spent on these services one-seventh was allocated in proportion to expenditure, the rest in proportion to the number of persons.

Expenditure on hospitals, maternity services, baths, parks, and public conveniences was distributed in proportion to numbers, though the incidence of this expenditure is more on the lower ranges of income, particularly because certain expenses are recovered according

[1] L. Hogben, *Political Arithmetic*, pp. 386 and 420.

[2] The average chance of receiving an education free, or of paying for it, each denoted by 1, was of course very small.

[3] P.E.P. *Report on Health Services*, p. 44.

to ability to pay.[1] The available data were insufficient to warrant any refinement.

Expenditure on the welfare of the blind benefited almost exclusively persons with incomes under £125. Other expenditure on public health was distributed in proportion to expenditure on the services specified.

OTHER DIVISIBLE BENEFITS

Expenditure on Public Assistance (indoor relief) was allocated to the class under £125. Miscellaneous social expenditure benefits persons with incomes under £250 and it was assumed that the benefit is proportional to numbers.

The administrative and financial costs of social transfers were distributed in proportion to the corresponding transfer benefits. Allowance was made for the different cost ratios of the different types of transfer benefit.

Expenditure on road traffic, for the reasons given on p. 199 above, was distributed in the same way as taxation on motoring, including private and commercial motoring. It can be seen, therefore, that of the benefits conferred by expenditure on road traffic £35·4 mn. fell on private motoring, £11·3 mn. on other travel by road, and £39·6 mn. on business. Of the latter £30 mn. fell on private incomes, £4 mn. on the government, and £5 mn. on residents abroad. The part beneficial to the government is already included in the cost of the various services since no allowance was made for the corresponding tax. The part beneficial to residents abroad has been deducted from government income.[2] Hence a total of £77 mn. conferred benefits on private incomes.

Expenditure on the protection of property was assumed to benefit owners of property in proportion to the value of property owned, as shown in Table 77.

Expenditure by public charities was divided between divisible and indivisible benefits in proportion to similar benefits conferred by government expenditure. The part included in divisible benefits was distributed in proportion to divisible benefits conferred by social expenditure.[3]

The results are shown in Table 53 and, in a summary form, in Table 54. It can be seen that three-quarters of the expenditure on

[1] Maternity services benefited persons under £250 only. Cf. E. Grebenik and D. J. Parry, *Agenda*, 1943, p. 139.

[2] Cf. pp. 43 and 181 above.

[3] Divisible benefits conferred by public charities consist chiefly of hospital and educational services.

TABLE 54. *The distribution of divisible benefits (Summary)*

Range of incomes	*Education*	*Public health*	*Public assistance, &c.*	*Cost of transfers*	*Road traffic*	*Protection of property*	*Public charities*	*Total*	*Relative distribution*
£	£ mn.	£ mn.	£ mn.	£ mn.	£ mn.	£ mn.	£ mn.	£ mn.	%
Under 125	43·5	26·3	16·7	22·0	15·0	0·3	8·8	132·6	*41·4*
125–250	55·2	22·6	0·2	6·2	15·1	0·4	6·8	106·5	*33·3*
250–500	17·2	6·1	—	0·2	16·9	0·5	2·0	42·9	*13·4*
500–1,000	0·6	1·7	—	—	12·7	0·5	0·3	15·8	*4·9*
1,000–2,000	0·8	0·7	—	—	7·5	0·5	0·1	9·6	*3·0*
2,000–10,000	0·8	0·5	—	—	7·9	0·9	0·0	10·2	*3·2*
10,000 and over	0·1	0·1	—	—	1·8	0·6	0·0	2·5	*0·8*
TOTAL . .	118·2	58·0	16·9	28·4	77·0	3·6	18·0	320·1	*100·0*
Under £250	98·7	48·9	16·9	28·2	30·1	0·6	15·6	239·1	*74·7*
Over £250	19·5	9·1	—	0·2	46·8	3·0	2·4	81·0	*25·3*

divisible benefits (other than transfers) benefited the lower ranges of income. The benefit derived by the classes above an income of £250 consisted, almost exclusively, of benefits conferred by the use of roads and free education, the latter benefiting mainly the lower middle classes.

iv. The distribution of indivisible benefits

Government expenditure, in so far as it was spent on transfers, subsidies, or services conferring divisible benefits, could be allocated to individuals without making an arbitrary assumption. Expenditure on indivisible benefits cannot be allocated except on the basis of an arbitrary assumption which must, by necessity, appeal to principles of ethics and politics.

The most important question to be answered is whether the price paid for a commodity or service should be the same for all, or proportional to the benefit derived.[1] In the market the former principle is applied, and this principle was implied in the allocation of divisible benefits above.

But the same principle cannot be applied to payment for indivisible benefits in a free society.[2] The government, by its nature of government, produces services and commodities which could not be produced privately or could not be produced efficiently. Because of the incidence of benefits derived from these services, the income of each member of the community—measured as the sum of consumers' surpluses—increases.[3] Payment for these services, if it is not to cause redistribution of income, should not change the distribution of income; in other words, payment should be proportional to the increase in income, always assuming that the total increase was more than the total cost of the service.[4] Whether this payment should be an increasing or diminishing proportion of income must depend on the shape of individual demand curves.

The same question could be put in another way, and one can ask

[1] Throughout this argument a free society must be assumed. These problems would not arise in a society the purpose of which is, for instance, to benefit few at the expense of many.

[2] This does not necessarily apply to certain persons, such as gangsters, living (so to speak) outside society.

[3] That is, the criterion of undertaking a service or not by the government is whether the total benefit derived from it is more or less than the total loss caused by paying for it.

[4] The former can be called the principle of equal sacrifice, the latter (following Pigou's argument and terminology given below) the principle of equal proportionate sacrifice (but neither is to be confused with the principle of least sacrifice).

what the system of neutral taxation is which would pay for the indivisible benefits of government expenditure.[1] It seems that Pigou's system of taxation which imposes *equal proportionate sacrifice* can be regarded as neutral taxation.[2] It is assumed in Pigou's argument that the amount of work done is not altered by the announcement effect of the tax.[3]

Let us write x for income, $F(x)$ for the utility of consumption, and $\phi(x)$ for the tax function. Equal proportionate sacrifice demands that

$$F(x)-F[x-\phi(x)] = k,$$

where k is constant. It can be shown that the amount of work done will not be altered if taxation is according to the above formula.

The formula becomes more simple if $xF'(x)$ is constant, that is, the curve representing the marginal utility of income is a rectangular hyperbola. It can be shown that in that case $\phi'(x)$ is also constant, implying a system of taxation proportional to income. In that case, and in that case only, the tax function is independent of the amount of revenue to be provided.[4] This is obviously the simplest case, and one of the alternative allocations of indivisible benefits will be based on it; that is, according to assumption I the benefits conferred by expenditure on indivisible benefits are proportional to income.

But there are reasons to assume that the neutral tax system is progressive rather than regressive. Pigou argues that the satisfaction from high incomes is derived not so much from goods and services such incomes buy as from the satisfaction of being richer than others. The ordinary utility curve is given with reference to changes in an individual's income; it is implied that other incomes are unaffected. But the utility curve which is relevant should take into account that all incomes of the same size are reduced to the same extent. The relative social position of the rich is thus maintained and the loss in utility, due to the loss of actual satisfaction derived from goods and services, is much smaller than would have been the case if other incomes were maintained. If this is taken into account, a progressive tax system seems equitable.[5]

[1] Cf. Ch. I, § iii.

[2] *A Study in Public Finance* (9th ed.), pp. 109–10.

[3] For the definition of announcement effect, cf. p. 12, above.

[4] In other cases $\phi(x)$ is dependent on k.

[5] Professor Irving Fisher developed a statistical method to measure the utility curve in *Economic Essays in Honour of J. B. Clark* (p. 157), and suggested that the application of his formula to American data would justify a progressive rather than a regressive system of taxation. It should be noted that no quantitative measure was given as to how far the tax system should be progressive.

It is assumed, for the purpose of finding the neutral tax system, that each individual has the same system of wants, implying that capacity for enjoyment is not correlated to income. This assumption is indispensable in considering the neutral tax system of any democratic country. It is irrelevant whether this assumption is true or not; it is a political assumption which maintains that it ought to be so.[1,2]

Indivisible benefits will be distributed according to two more assumptions, assuming that the neutral tax system is progressive, which seems to be a more correct assumption than the first one (that the tax system should be proportional to income).[3]

The simplest formula for a progressive tax system is that of Bernoulli, according to which the tax is proportional to income above the subsistence level. This was taken as assumption II and the subsistence level calculated according to figures given in the Beveridge Report (Cmd. 6404).[4] An allowance had to be made for a number of persons living actually below the subsistence level.[5]

A number of objections can be raised against Bernoulli's formula.[6] There are two theoretical objections. First, it can be argued that there is no such concept as a subsistence limit. Even if it is possible to calculate the scientific minimum, every person having a minimum income would start buying luxuries before reaching the subsistence level as regards necessities. To provide for subsistence an income well above the subsistence level is necessary, the amount of which cannot be objectively determined. It follows that every person, even

[1] Cf. L. Robbins, 'Interpersonal Comparison of Utility', *Economic Journal*, 1938, p. 635. Obviously the same assumption is made by Pigou also.

[2] Fisher assumed that the indifference system of each individual is the same. But it is difficult to see how a formula based on this assumption could be applied to actual data.

[3] Though there is no conclusive evidence, Pigou's *a priori* argument given above is sufficient to maintain that the tax system should be progressive.

This proposition is not to be confused with the law of diminishing marginal utility of income. It implies that the fall in the marginal utility of income is more than proportional to the increase in income.

[4] At prices prevailing in 1937–8 the subsistence allowance for an adult was 16*s*., for a child 6*s*. 6*d*. per week.

[5] The calculation can be carried out most conveniently with reference to incomes including transfers. About £85 mn. was allowed for the fact that certain transfers, mainly health insurance benefits and old age pensions, fell below the subsistence level. An additional amount, 10 per cent. for incomes under £125 and 3–5 per cent. for incomes between £125 and £250, was allowed for the fact that other incomes did not provide subsistence.

[6] There is evidence that Marshall preferred Cramer's formula according to which utility varies in proportion to the square root of income; Pigou does not see anything in that formula to commend it.

those below the subsistence level, benefit from government expenditure on indivisible benefits. Even persons below the minimum might be willing to lower their standard of living still further rather than go without certain government services, say, defence.

Secondly, as Pigou points out, the main drawback of Bernoulli's formula is that it assumes the marginal utility curve to be a rectangular hyperbola for the part of income above the subsistence level. For high incomes the formula tends to suggest proportional taxation, though there are reasons for maintaining the progressiveness of taxation throughout the whole range of income.

Bernoulli's formula might be correct for a range of incomes from just above the subsistence limit to, say, three or four times that level; but it is unsatisfactory for the whole range of incomes. Partly because some taxation should be payable below the subsistence level, partly because taxation payable by the higher incomes should be more progressive.

A formula was developed to overcome these objections. Let us take a subsistence level x, as before, and a constant t. It is assumed (under assumption III) that the first x of each income pays tax at the nominal rate of $t/10$; the next $2x$ at the rate of t; the next $3x$ at the rate of $1{\cdot}5t$; the next $4x$ at the rate of $2t$; the next $5x$ at the rate of $2{\cdot}5t$, and the next $6x$ at the rate of $3t$. This accounts for all incomes under $21x$, that is, almost all incomes under £2,000. The excess of incomes above £2,000 was assumed to have been taxed at $4t$, rising later to $5{\cdot}5t$. (t is such that the total taxation obtained by the above formula should cover expenditure on indivisible benefits.)

The distribution of indivisible benefits under the three assumptions is shown in Tables 55 and 56. Table 55 also shows indivisible benefits as proportion of producers' income, which is represented in Fig. 14. Under assumption I this proportion is constant at 10·6 per cent. Under assumption II the proportion rises from 6 to 16 per cent. but is practically constant for incomes above £1,000. Under assumption III the proportion rises throughout the whole range of incomes, from 4 to 49 per cent.

Table 56 shows the relative distribution of indivisible benefits. The proportion benefiting incomes under £250 is 56, 40, and 23 per cent. under the three assumptions, the proportion benefiting incomes above £250 is 44, 60, and 77 per cent., respectively.

Though the three assumptions were arbitrarily chosen and given as alternatives, it can be taken—on the grounds of the reasoning above—that the true distribution of indivisible benefits is progressive and—if it is possible to give an opinion at all—it is likely to be

TABLE 55. *The distribution of indivisible benefits*

Range of incomes	*Assumption* I	*Assumption* II	*Assumption* III	*Assumption* I*	*Assumption* II*	*Assumption* III*
£	£ mn.	£ mn.	£ mn.	%	%	%
Under 125	124·7	70·1	43·5	10·6	6·0	3·7
125–150	34·8	23·0	13·8	10·6	7·0	4·2
150–175	34·2	26·6	15·4	10·6	8·3	4·8
175–200	29·4	26·2	14·8	10·6	9·5	5·4
200–250	38·2	37·7	21·0	10·6	10·5	5·8
250–300	24·3	26·1	14·8	10·6	11·4	6·5
300–400	27·6	32·6	20·5	10·6	12·5	7·9
400–500	16·2	20·6	14·0	10·6	13·6	9·2
500–600	11·4	15·3	11·1	10·6	14·2	10·3
600–800	14·9	20·7	16·7	10·6	14·8	11·9
800–1,000	10·2	14·7	12·4	10·6	15·3	12·9
1,000–1,500	17·2	25·4	25·8	10·6	15·9	15·9
1,500–2,000	11·5	17·3	21·2	10·6	16·1	19·7
2,000–2,500	8·1	12·4	16·7	10·6	16·2	21·8
2,500–3,000	6·2	9·6	14·3	10·6	16·4	24·4
3,000–4,000	9·2	14·2	23·4	10·6	16·4	27·0
4,000–5,000	6·4	9·9	17·5	10·6	16·5	29·0
5,000–6,000	4·9	7·7	14·1	10·6	16·6	30·5
6,000–8,000	6·7	10·4	20·7	10·6	16·6	33·0
8,000–10,000	4·5	7·0	15·1	10·6	16·7	36·0
10,000–15,000	7·0	10·8	25·9	10·6	16·7	40·0
15,000–20,000	3·6	5·8	15·9	10·6	16·7	46·1
20,000–30,000	3·7	5·8	16·2	10·6	16·7	46·8
30,000–50,000	3·1	4·8	13·5	10·6	16·8	46·9
50,000–100,000	3·1	4·9	14·0	10·6	16·8	48·1
100,000 and over	2·5	3·9	11·2	10·6	16·9	48·5
TOTAL . . .	463·5	463·5	463·5	(10·6)	(10·6)	(10·6)

* Percentage of producers' income, as given in Table 17.

TABLE 56. *The distribution of indivisible benefits (Summary)*

Range of incomes	*Assumption* I	*Assumption* II	*Assumption* III	*Assumption* I	*Assumption* II	*Assumption* III
£	£ mn.	£ mn.	£ mn.	%	%	%
Under 125	124·7	70·1	43·5	26·9	15·1	9·4
125–250	136·6	113·5	65·0	29·5	24·5	14·0
250–500	68·1	79·3	49·3	14·7	17·1	10·6
500–1,000	36·5	50·7	40·2	7·9	10·9	8·7
1,000–2,000	28·7	42·7	47·0	6·2	9·2	10·1
2,000–10,000	46·0	71·2	121·8	9·9	15·4	26·3
10,000 and over	23·0	36·0	96·7	5·0	7·8	20·9
TOTAL . .	463·5	463·5	463·5	100·0	100·0	100·0
Under £250	261·3	183·6	108·5	56·4	39·6	23·4
Over £250	202·2	279·9	355·0	43·6	60·4	76·6

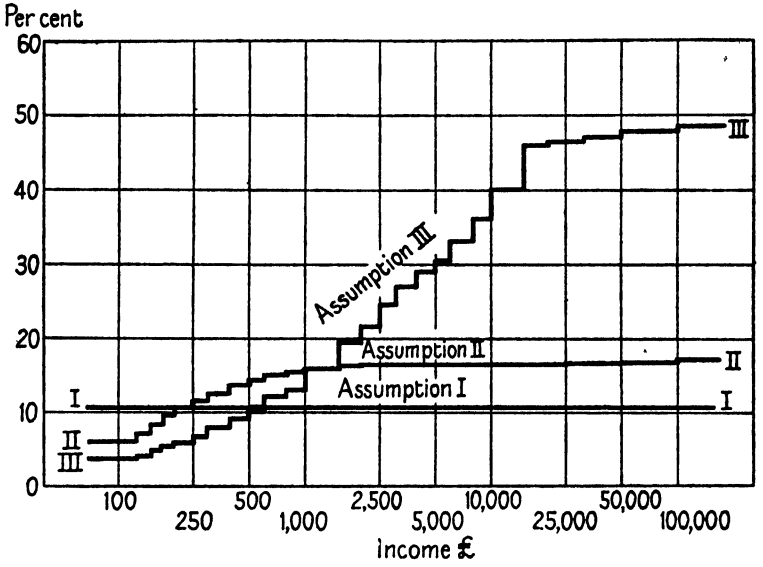


FIG. 14. Indivisible benefits as percentage of income.

between the two distributions given under assumptions II and III, probably nearer to that under assumption III than to the one under assumption II.

XVII

CONCLUSIONS

IN this chapter the results of the preceding chapters are summarized and the extent to which incomes were redistributed in 1937 is examined. First, the distribution of government expenditure is summarized and analysed, and compared with the distribution of revenue. Secondly, the distribution of consumers' incomes is obtained, that is, of incomes after allowing for the effect of redistribution. Lastly, redistribution is measured either as the difference between public expenditure (and saving) and revenue, or as the difference between consumers' and producers' income.

i. THE REVENUE AND EXPENDITURE OF THE GOVERNMENT

The distribution of taxation is summarized in Table 57. Seven income groups are distinguished. Direct taxes are divided into seven, indirect taxes into six, categories. The bulk of direct taxation, £469 mn., is paid by the classes with incomes over £250, but particularly by those with incomes over £2,000 who paid £319 mn. The classes under £250 paid £71 mn. in direct taxation, £14 mn. to the central government, and £57 mn. for social insurance, &c.

Two-thirds of indirect taxes, on the other hand, are paid by those with incomes under £250. Most indirect taxes fall heavily on this class, notably taxes on food, on dwellings, and on alcohol and tobacco. As far as taxes on dwellings and on alcohol and tobacco are concerned their incidence varies very much from one case to another, depending on the locality and on consumption habits. These classes also pay about £100 mn. in indirect taxes on production in general. The classes above £250 pay most taxes on private motoring and the bulk of certain other taxes on luxury consumption. Even so, about £150 mn. of £200 mn. paid by these classes were paid in the form of taxes on food, dwellings, alcohol and tobacco, and general indirect taxes, and only about £50 mn. can be considered as taxes on luxuries.

Of all taxes, amounting to £1,160 mn., £480 mn. were paid by the classes with less than £250 and £680 mn. by those with more than £250 a year. Included in the latter are £130 mn. paid by those with incomes of £250–500, £100 mn. by those with incomes of £500–1,000, and £450 mn. by those with incomes over £1,000.

The distribution of government expenditure which can be allocated

TABLE 57. *Summary of taxation*

(In million £'s)

Range of incomes	*Direct taxes*							
	Income tax and surtax (personal)	*Income tax (non-personal)*	*Death duties*	*Stamp duties on the transfer of property &c.*	*Stamp duties on cheques, &c.*	*N.D.C.*	*Social insurance contributions*	*Total*
£								
Under 125	—	1·0	0·1	0·6	0·4	0·1	29·4	31·6
125–250	6·2	2·1	1·2	0·9	0 7	0·3	27·5	38·9
250–500	18·6	6 5	3·1	1·3	1·7	0 9	2·1	34·3
500–1,000	32·5	10·3	4·3	1·7	0·7	2·2	—	51·9
1,000–2,000	39·3	12·1	7·1	1·9	0·4	2·9	—	63·7
2,000–10,000	100·4	25·3	29·3	4·1	0·3	6·8	—	166·2
10,000 and over	89·8	16·1	39·6	2·7	—	4·7	—	152·9
TOTAL . .	286·8	73·4	84·7	13·2	4·2	17·9	59·0	539·5
Under £250	6·2	3·1	1·3	1·5	1·1	0·4	56·9	70·5
Over £250	280·6	70·3	83·4	11·7	3·1	17·5	2·1	469·0

Range of incomes	*Indirect taxes*							*All taxes*
	On food	*Rates on dwellings*	*On alcohol and tobacco*	*On private motoring*	*Other specific taxes*	*On production in general*	*Total*	
£								
Under 125	19·8	41·7	78 4	1·4	13·0	50·2	204·5	236·1
125–250	20·2	43·3	77 4	2·8	12·7	47·1	203·5	242·4
250–500	7·2	22 3	26 6	9 8	7·7	22·0	95·6	129·9
500–1,000	2·6	9·3	7·2	9·6	4·8	10·8	44·3	96·2
1,000–2,000						7·7	29·8	93·5
2,000–10,000	2·8	18·3	7·3	11·8	8 5	10·4	32·5	198·8
10,000 and over						2·6	7·1	160·0
TOTAL . .	52·6	134·9	196 9	35·4	46·7	150·8	617·3	1,156·8
Under £250	40·0	85·0	155 8	4 2	25·7	97·3	408·0	478·5
Over £250	12·6	49·9	41·1	31·2	21 0	53·5	209·3	678·3

to individuals, that is, transfers, subsidies, and divisible benefits, is shown in Table 58. The social expenditure of the government is classified under seven headings. Of the total of £541 mn., £509 mn. benefits the classes under £250 and £32 mn. the classes above £250. Of the latter £20 mn. consists of expenditure on education, mainly elementary education given to children in the classes £250–400, and £9 mn. of expenditure on public health.

Social expenditure is classified, not only according to the objects of expenditure, but also as transfers, subsidies, and real expenditure. All transfers came out of social expenditure. Divisible benefits not included in social expenditure were comparatively small, consisting of expenditure on road traffic and expenditure for the protection of property.

Of the total government expenditure which can be allocated to individuals (£639 mn.), £555 mn. accrued to the classes under £250 and £84 mn. to the classes above £250. Almost all of the latter was derived from real expenditure, including £47 mn. from expenditure on road traffic, £20 mn. from expenditure on education, and £9 mn. from expenditure on public health.

The revenue and expenditure of public authorities is shown in Table 59 and, in a summary form, in Table 60. Revenue consists of taxation and public income.[1] Of the total revenue of £1,103 mn., 42 per cent. was received from the classes under £250, 11 per cent. by those with incomes of £250–500, 8 per cent. by those with incomes of £500–1,000, and 38 per cent. by those with incomes over £1,000.

Allocated government expenditure, taken from Table 58, is shown in col. (5). 87 per cent. of it benefits the classes under £250, 7 per cent. those with incomes of £250–500, and 6 per cent. those with incomes over £500.

Attributed public expenditure and saving, that is, expenditure on indivisible benefits, is shown in cols. (6)–(8) and the distribution of total public expenditure and saving in cols. (9)–(11), according to three alternative assumptions (given in Ch. XVI).[2] Of £1,103 mn. public expenditure and saving 74 per cent. accrued to the classes under £250 on assumption I, 67 per cent. on assumption II, and 60 per cent. on assumption III. On the basis of the opinions expressed on p. 213, above, this proportion can be reasonably taken as 60–5 per cent. The benefits accruing to persons with incomes of £250–500 were 9–11 per cent. of the total, to those with incomes of £500–1,000,

[1] See Tables 48 and 17.
[2] Cf. pp. 209–12.

TABLE 58. *Summary of allocated government expenditure*

(In million £'s)

Range of incomes	*Social expenditure**							
	Education	*Public health†*	*Health insurance*	*Unemployment and poverty*	*Pensions*	*W.M C.*	*Housing*	*Total‡*
£								
Under 125	46·2	26 3	29·7	119·4	116 3	10·4	9·0	357·5
125–250	57·9	22·6	17·3	16·8	20·9	2·6	13·3	151·6
250–500	17 8	6 1	0·3	0·2	1 8	—	—	26·2
500–1,000	0·6	1 7	—	—	—	—	—	2·3
1,000–2 000	0·8	0·7	—	—	—	—	—	1 5
2,000–10,000	0 8	0·5	—	—	—	—	—	1·3
10,000 and over	0·1	0·1	—	—	—	—	—	0·2
TOTAL .	124·2	58·0	47·3	136·4	139 0	13·0	22·3	540·6
Under £250	104·1	48 9	47·0	136·2	137 2	13·0	22·3	509·1
Over £250	20·1	9·1	0·3	0·2	1 8	—	—	31·5

Range of incomes	*Social expenditure*			*Road traffic*	*Protection of property*	*Total transfers*	*Total real expenditure*	*Total*
	Direct transfers	*Indirect transfers*	*Real expenditure§*					
£								
Under 125	231 6	17·4	117 3	15 0	0 3	249·0	132·6	381·6
125–250	48 0	19·3	91·0	15 1	0·4	67·3	106·5	173·8
250–500	2·5	0·2	25·5	16 9	0 5	2 7	42·9	45·6
500–1,000	—	—	2·6	12 7	0·5	—	15·8	15·8
1,000–2,000	—	—	1·6	7·5	0·5	—	9·6	9·6
2,000–10,000	—	—	1·3	7·9	0·9	—	10·2	10·2
10,000 and over	—	—	0·2	1·8	0·6	—	2·5	2·5
TOTAL . .	282·1	36·9	239·5	77 0	3·6	319·0	320·1	639·1
Under £250	279·6	36 7	208·3	30 1	0·6	316·3	239·1	555·4
Over £250	2·5	0·2	31·2	46·8	3 0	2·7	81·0	83·7

* Excluding expenditure on lunacy and mental deficiency.
† Excluding expenditure on disease, &c.
‡ Including miscellaneous social expenditure but not including expenditure by public charities.
§ Including expenditure by public charities.

TABLE 59. *Revenue and public expenditure*

(In million £'s)

Range of incomes (1)	*Taxation* (2)	*Public income* (3)	*Revenue* (4)	*Allocated government expenditure* (5)	*Indivisible benefits* I (6)	*Indivisible benefits* II (7)	*Indivisible benefits* III (8)	*Public expenditure and saving* I (9)	*Public expenditure and saving* II (10)	*Public expenditure and saving* III (11)
£										
Under 125	236·1	−4·2	231·9	381·6	124·7	70·1	43·5	506·3	451·7	425·1
125–150	63·7	−1·4	62·3	57·0	34·8	23·0	13 8	91·8	80·0	70·8
150–175	61·5	−1·5	60·0	47 8	34·2	26·6	15·4	82·0	74·4	63·2
175–200	50·8	−1·4	49·4	33·0	29·4	26·2	14·8	62·4	59·2	47·8
200–250	66·6	−2·0	64·6	36·1	38·2	37·7	21·0	74·3	73·8	57·1
250–300	43·1	−1·6	41 5	16·9	24·3	26·1	14·8	41·2	43·0	31·7
300–400	52·4	−2·8	49·6	18·1	27·6	32 6	20·5	45·7	50·7	38·6
400–500	34·2	−2·2	32·0	10·6	16·2	20·6	14·0	26·8	31·2	24·6
500–600	27·9	−1·9	25·1	4·6	11·4	15·3	11 1	16·0	19·9	15·7
600–800	39·6	−3·0	36 6	6·8	14·9	20·7	16·7	21·7	27·5	23·5
800–1,000	29·6	−2·3	27·3	4·4	10·2	14·7	12·4	14·6	19·1	16·8
1,000–1,500	54·5	−4·3	50·2	6·1	17·2	25·4	25·8	23·3	31·5	31·9
1,500–2,000	39·0	−3·1	35·9	3·5	11·5	17·3	21·2	15·0	20·8	24·7
2,000–2,500	29·3	−2·3	27·0	2·4	8·1	12·4	16·7	10 5	14·8	19·1
2,500–3,000	23·5	−1·8	21·7	1·7	6·2	9·6	14·3	7·9	11·3	16·0
3,000–4,000	37·3	−2·8	34·5	2·2	9·2	14·2	23·4	11·4	16·4	25·6
4,000–5,000	28·0	−2·0	26·0	1·3	6·4	9·9	17·5	7·7	11·2	18·8
5,000–6,000	23·1	−1·6	21·5	0·9	4·9	7·7	14·1	5·8	8·6	15·0
6,000–8,000	33·4	−2·2	31·2	1·0	6·7	10·4	20·7	7·7	11·4	21·7
8,000–10,000	24·2	−1·5	22·7	0·7	4·5	7·0	15·1	5·2	7·7	15·8
10,000–15,000	40·7	−2·4	38·3	0·9	7·0	10·8	25·9	7·9	11·7	26·8
15,000–20,000	23·4	−1·3	22·1	0·4	3·6	5·8	15·9	4·0	6·2	16·3
20,000–30,000	25·3	−1·3	24·0	0·4	3·7	5·8	16·2	4·1	6·2	16·6
30,000–50,000	22·6	−1·1	21·5	0·3	3·1	4·8	13·5	3·4	5·1	13·8
50,000–100,000	24·9	−1·2	23·7	0·3	3·1	4·9	14·0	3·4	5·2	14·3
100,000 and over	23·1	−1·0	22·1	0·2	2·5	3·9	11·2	2·7	4·1	11·4
TOTAL . .	1,156·8	−54·2	1,102·6	639·1	463·5	463·5	463·5	1,102·6	1,102·6	1,102·6

TABLE 60. *Revenue and public expenditure (Summary)*

Range of incomes (1)	*Taxation* (2)	*Public income* (3)	*Revenue* (4)	*Allocated government expenditure* (5)	*Indivisible benefits*			*Public expenditure and savings*		
					I (6)	*II* (7)	*III* (8)	*I* (9)	*II* (10)	*III* (11)
£	£ mn.	£ mn.	£ mn.	£ mn.	£ mn.	£ mn.	£ mn.	£ mn.	£ mn.	£ mn.
Under 125	236·1	−4·2	231·9	381·6	124·7	70·1	43 5	506·3	451·7	425·1
125–250	242·5	−6·3	236·2	173·8	136·6	113·5	65 0	310·4	287·3	238·8
250–500	129·8	−6·6	123·2	45·6	68·1	79·3	49·3	113·7	124·9	94·9
500–1,000	96·2	−7·2	89·0	15·8	36·5	50·7	40·2	52·3	66·5	56 0
1,000–2,000	93·5	−7·4	86·1	9·6	28·7	42·7	47·0	38·3	52·3	56·6
2,000–10,000	198·7	−14·2	184·5	10·2	46·0	71·2	121 8	56·2	81·4	132·0
10,000 and over	160 0	−8·3	151·7	2 5	23·0	36 0	96·7	25·5	38·5	99·2
TOTAL . .	1,156·8	−54·2	1,102·6	639·1	463·5	463·5	463·5	1,102·6	1,102·6	1,102·6
Under £250	478·6	−10·5	468·1	555·4	261·3	183·6	108·5	816·7	739·0	663·9
Over £250	678·2	−43·7	634·5	83·7	202·2	279·9	355·0	285·9	363·6	438·7
£	%	%	%	%	%	%	%	%	%	%
Under 125	20·4	—	21·0	59·7	26·9	15·1	9·4	45·9	41·0	38·6
125–250	21·0	—	21·4	27·2	29·5	24·5	14·0	28·2	26·1	21·7
250–500	11·2	—	11·2	7·1	14·7	17·1	10·6	10·3	11·3	8·6
500–1,000	8·3	—	8·1	2·5	7·9	10·9	8·7	4·7	6·0	5·1
1,000–2,000	8·1	—	7·8	1·5	6·2	9·2	10·1	3·5	4·7	5·1
2,000–10,000	17·2	—	16·7	1 6	9·9	15·4	26·3	5·1	7·4	12·0
10,000 and over	13·8	—	13·8	0·4	5·0	7·8	20·9	2·3	3·5	9·0
TOTAL . .	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0
Under £250	41·4	19·4	42·4	86·9	56·4	39·6	23·4	74·1	67·1	60·3
Over £250	58·6	80·6	57·6	13·1	43·6	60·4	76·6	25·9	32·9	39·7

5–6 per cent., and to those with incomes over £1,000, 11–26 per cent., according to the assumption chosen.

Taxation and revenue as a proportion of nominal unadjusted producers' income is shown in Table 61.[1] Allocated government expenditure as a proportion of income is also shown. This proportion

TABLE 61. *Proportion of income devoted to taxation or received from the government**

(In percentages)

Range of incomes	*Taxation*	*Revenue*	*Allocated government expenditure*	*Public expenditure and saving*		
				I	*II*	*III*
£						
Under 125	16·8	16·5	27·1	36·0	32·1	30·2
125–250	18·1	17·7	13·0	23·2	21·5	17·8
250–500	20·0	19·0	7·0	17·5	19·2	14·6
500–1,000	27·4	25·4	4·5	14·9	18·9	16·0
1,000–2,000	33·8	31·1	3·5	13·8	18·9	20·4
2,000–10,000	44·5	41·3	2·3	12·6	18·2	29·5
10,000 and over	71·8	68·0	1·1	11·4	17·3	44·5
AVERAGE . .	24·7	23·5	13·6	23·5	23·5	23·5
Under £250	17·4	17·1	20·2	29·8	26·9	24·2
Over £250	34·8	32·6	4·3	14·7	18·7	22·5

* Percentages of nominal unadjusted producers' income.

is 27 per cent. for the classes under £125, 13 per cent. for those with £125–250, or 20 per cent. for the class under £250 as a whole. For the higher classes the proportion steadily falls and is 1 per cent. for those with incomes over £10,000. Total public expenditure and saving as a proportion of income is dependent on the assumption chosen. Under assumption I the proportion falls from 36 to 11 per cent., under assumption II it falls from 32 per cent. but becomes almost steady at 17–19 per cent. above an income of £250, under assumption III the proportion falls from 30 to 15 per cent. and then rises again to 45 per cent. for the highest group.

The composition of taxation paid by the various classes is represented in Fig. 15. The total taxation paid by each class is represented by a column, proportional to the amount paid, which is divided according to the different kinds of taxes paid by that group. The composition of expenditure conferring benefits which are allocatable to individuals is similarly represented in Fig. 16.

[1] Cf. pp. 185–91.

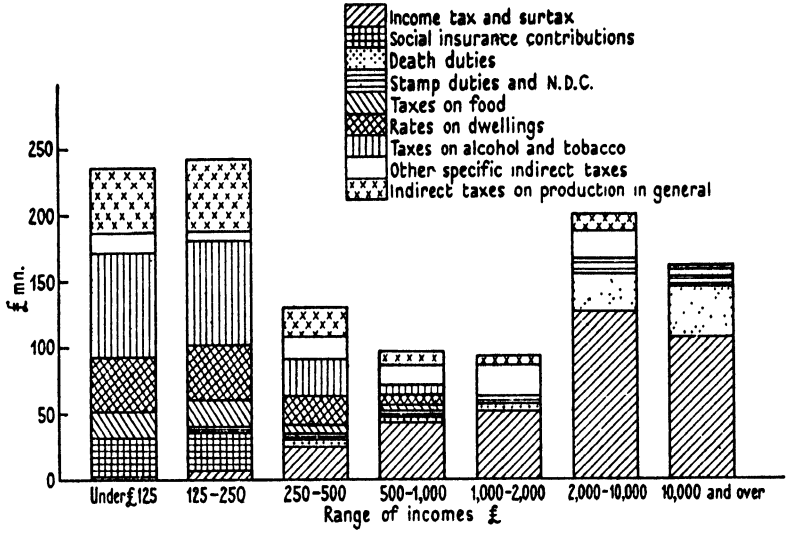


FIG. 15. The distribution of taxation.

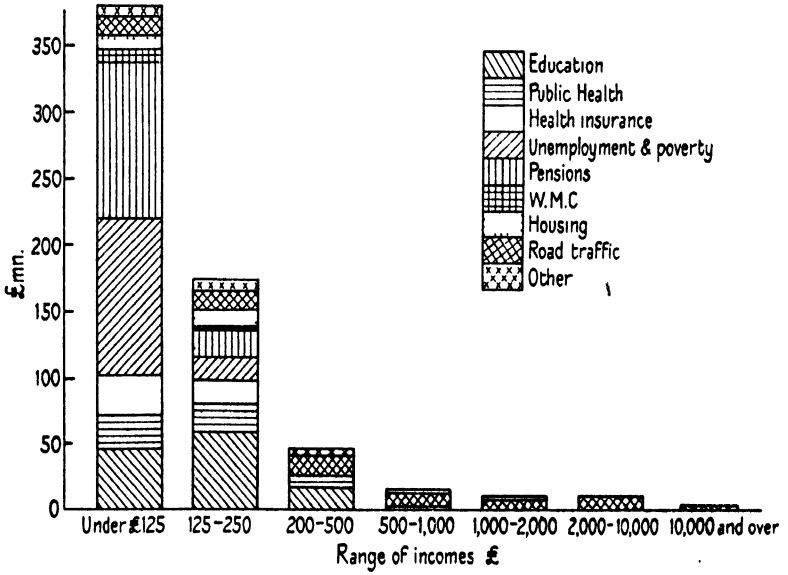


FIG. 16. The distribution of allocated government expenditure.

Finally, Fig. 17 represents the distribution of taxation and allocatable government expenditure under three alternative assumptions corresponding to the assumptions made with reference to the distribution of indivisible benefits. The base of the diagrams is divided in

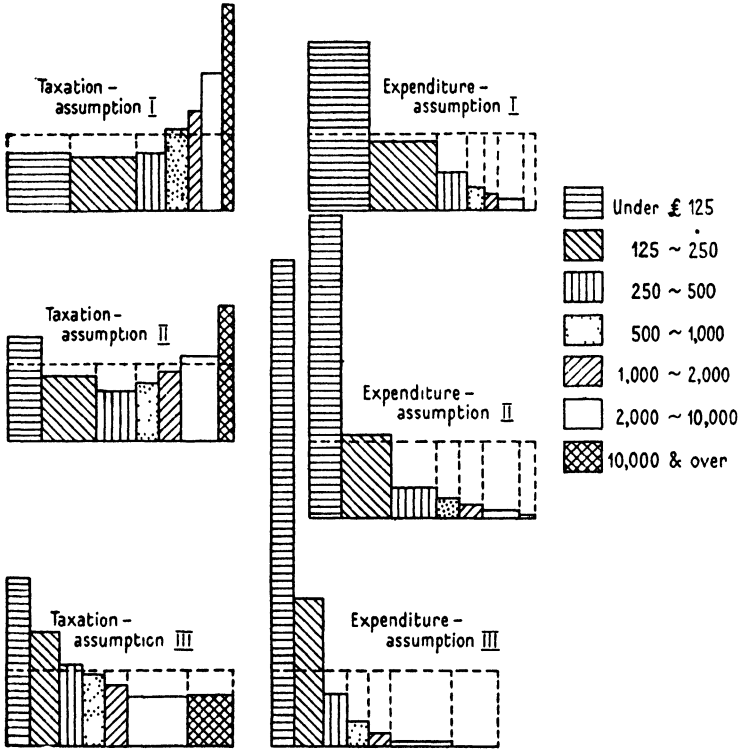


FIG. 17. Taxation and allocated government expenditure.

proportion to the distribution of divisible benefits under the different assumptions, and areas are proportionate to tax paid or benefit received. Hence the rectangle marked represents what would be a neutral system of taxation, or of allocated benefits, under the different assumptions, and divergences from this rectangle represent redistribution by taxation or by allocated government expenditure.

ii. CONSUMERS' INCOMES

The distribution of the number of persons, of producers' income and consumers' income is shown in Table 62 and, in a summary

TABLE 62. *Producers' and consumers' income*

(In million £'s)

Range of incomes (1)	*Number of persons (Thous.)* (2)	*Producers' income* (3)	*Unadjusted producers' income* (4)	*Nominal unadjusted producers' income* (5)	*Available income* (6)	*Private consumers' income* (7)	*Unadjusted consumers' income* (8)	*Consumers' income*		
								I (9)	*II* (10)	*III* (11)
£										
Under 125	21,800	1,172	1,176	1,407	1,376	1,189	1,321	1,446	1,391	1,365
125–150	6,050	326·8	328·2	346·5	335·6	288·8	321·5	356·3	344·5	335·3
150–175	5,000	321·6	323 1	337·4	327·2	281·2	309·4	343·6	336·0	324·8
175–200	3,700	275·9	277·3	285·3	278·1	238·4	259·5	288·9	285·7	274·3
200–250	4,000	359·2	361·2	368·7	357 9	306·2	330·7	368·9	368·4	351·7
250–300	2,090	228·0	229·6	231·0	222·8	188·1	203·4	227·7	229·5	218·2
300–400	1,890	259·8	262·6	263·7	250·2	211·3	228 3	255·9	260·9	248·8
400–500	836	151·9	154·1	154·1	141·7	119·9	130·5	146·7	151·1	144·5
500–600	471	107·4	109·3	109·3	96·9	82 3	86·9	98·3	102·2	98·0
600–800	486	140·3	143·3	143·3	121 8	103·7	110·5	125·4	131·2	127·2
800–1,000	252	96·0	98·3	98 3	80·3	68·7	73·1	83·3	87·8	85·5
1,000–1,500	309	161·9	166 2	166·2	130·2	111·7	117·8	135·0	143·2	143·6
1,500–2,000	142	107·7	110·8	110 8	83·1	71·8	75·3	86·8	92·6	96·5
2,000–2,500	76·3	76·5	78·8	78 8	56 9	49·5	51·9	60·0	64·3	68·6
2,500–3,000	48·2	58·7	60·5	60·5	42·2	37·0	38·7	44·9	48·3	53·0
3,000–4,000	55·1	86·6	89·4	89 4	58·9	52·1	54·3	63·5	68·5	77·7
4,000–5,000	30·1	60·1	62 1	62·1	38·3	34·1	35·4	41·8	45·3	52·9
5,000–6,000	18·1	46·3	47·9	47 9	27·7	24·8	25·7	30·6	33·4	39·8
6,000–8,000	20·4	62·7	64·9	64·9	35·2	31·5	32·5	39·2	42·9	53·2
8,000–10,000	10·2	42·0	43·5	43·5	21·6	19·3	20·0	24·5	27·0	35·1
10,000–15,000	11·7	64·8	67·2	67·2	29·5	26·5	27·4	34·4	38·2	53·3
15,000–20,000	4·3	34·4	35·7	35·7	13·6	12·3	12·7	16·3	18·5	28·6
20,000–30,000	3·1	34·6	35·9	35·9	11·8	10 6	11 0	14·7	16·8	27·2
30,000–50,000	1·5	28·8	29·9	29·9	8·1	7·3	7·6	10·7	12·4	21·1
50,000–100,000	1·0	29·1	30·3	30·3	6·1	5·5	5·8	8·9	10·7	19·8
100,000 and over	0·3	23 1	24·1	24·1	1·2	1·0	1·2	3·7	5·1	12·4
TOTAL . .	47,300	4,356	4,410	4,692	4,153	3,572	3,892	4,356	4,356	4,356

form, in Table 63. The figures up to col. (7) are taken from other tables,[1] but it is desirable to recapitulate the definitions used.[2]

The range of incomes refers to incomes assessed to income tax on a single tax return, that is, income of man and wife. The number of persons refers to persons maintained out of that income, that is, man, wife, and children under 16 (or over 16 if continuing education) and elderly relatives. Unadjusted producers' income includes income actually received (except social transfers) and imputed income (business saving, income of life funds and of societies). Unadjusted incomes are corrected for a share in public income (attributed income) to obtain producers' incomes. Public income (the income of the government and public charities from investment and trading)—which was negative in 1937—was allocated in proportion to income from capital.[3] The total of producers' income is equal to the net national income.

Nominal unadjusted producers' incomes are obtained by adding social transfers to unadjusted producers' incomes. Available incomes are obtained by deducting direct taxes from nominal unadjusted producers' incomes. Available income is equal to private expenditure on consumption and saving valued at market prices. Private consumers' income is equal to private expenditure on consumption and saving valued at factor cost; in other words, private consumers' income is obtained from available income by deducting indirect taxes and adding subsidies.

That part of the national expenditure which is expenditure on consumption and saving by private individuals or bodies is covered by the distribution of private consumers' income given in col. (7). The rest of the national expenditure consists of expenditure on consumption and saving by public authorities, including public charities. Such expenditure confers divisible benefits, which are allocatable to private individuals, and indivisible benefits, which are not allocatable unless an arbitrary assumption is made (attributed consumers' income).

Unadjusted consumers' income includes all expenditure on consumption and saving (valued at factor cost) which can be allocated to persons without an arbitrary assumption, that is, private consumers' income and divisible benefits from government expenditure. Col. (8) is obtained by adding to col. (7) the distribution of divisible benefits shown in Table 53.

[1] Cf. Tables 17, 37, and 46.
[2] Cf. p. 15.
[3] Cf. p. 72.

Finally, total consumers' income is obtained by adding to unadjusted consumers' income indivisible benefits, the distribution of which is shown in Table 55; the results are shown in cols. (9)–(11), according to the three assumptions. The total of consumers' income is equal to net national expenditure, to net national income, and therefore to the total of producers' income.

It can be seen from Table 63 that 86 per cent. of the population had incomes of less than £250 a year, or about £5 a week. This level can be taken as the dividing line between the working classes and the upper and middle classes since, before the war, very few manual wage earners had a weekly income in excess of £5.[1]

Fifty-six per cent. of the national income accrued to the working classes but, according to the different assumptions, 61 to 64 per cent. of the national expenditure was enjoyed by them, probably 62 per cent. It can also be seen that transfer expenditure and direct taxes increased their share in the national income, while the effect of indirect taxes was about offset by subsidies (as far as averages are concerned). Government expenditure on divisible benefits again increased their share, while expenditure on indivisible benefits decreased it.

The share of the upper and middle classes (14 per cent. of the population) fell, therefore, from 44 to 36–9 per cent., according to the different assumptions, probably to 38 per cent. Most marked was the fall in the share of persons with incomes over £1,000 (1½ per cent. of the population), from 21 per cent. to 14–18 per cent.

The distribution of producers' and consumers' income (the latter under three different assumptions) is represented in the form of *Lorenz* curves in Fig. 18. The index of inequality,[2] for the distribution of producers' income was 0·70, for the distribution of consumers' income 0·53–0·61. The distribution of incomes had, therefore, markedly improved through the interference of the government, but its inequality still remained great.

iii. Redistribution of incomes

Incomes accrue to individuals in the form of producers' income and are enjoyed in the form of consumers' incomes. Redistribution of incomes consists therefore of the difference between consumers' and producers' income. This difference might be positive, in which case

[1] There are, of course, a number of persons whose incomes are similar to those of manual wage-earners but who belong, from the social point of view, to the lower middle classes. Here all persons with less than £250 a year are regarded as working classes.

[2] Cf. p. 69 *n.*

TABLE 63. *Producers' and consumers' income (Summary)*

Range of incomes (1)	*Number of persons* (2)	*Producers' income* (3)	*Unadjusted producers' income* (4)	*Nominal unadjusted producers' income* (5)	*Available income* (6)	*Private consumers' income* (7)	*Unadjusted consumers' income* (8)	*Consumers' income*		
								I (9)	*II* (10)	*III* (11)
£	Thousands	£ mn.	£ mn.	£ mn.	£ mn.	£ mn.	£ mn.	£ mn.	£ mn.	£ mn.
Under 125	21,800	1,172	1,176	1,407	1,376	1,189	1,321	1,446	1,391	1,365
125–250	18,750	1,284	1,290	1,338	1,299	1,115	1,221	1,358	1,335	1,286
250–500	4,816	640	646	649	615	519	562	630	642	612
500–1,000	1,209	344	351	351	299	255	271	307	321	311
1,000–2,000	451	270	277	277	213	184	193	222	236	240
2,000–10,000	258	433	447	447	281	248	259	305	330	380
10,000 and over	22	215	223	223	70	63	66	89	102	162
TOTAL . .	47,300	4,356	4,410	4,692	4,153	3,572	3,892	4,356	4,356	4,356
Under £250	40,550	2,456	2,466	2,745	2,675	2,303	2,542	2,904	2,726	2,651
Over £250	6,750	1,901	1,944	1,947	1,478	1,269	1,350	1,452	1,630	1,705
£	%	%	%	%	%	%	%	%	%	%
Under 125	46·1	26·9	26·7	30·0	33·1	33·3	33·9	33·2	31·9	31·3
125–250	39·6	29·5	29 2	28·5	31·3	31·2	31·4	31 2	30 6	29·5
250–500	10·2	14·7	14·7	13·8	14·8	14·6	14·4	14·5	14·7	14·0
500–1,000	2·6	7·9	8·0	7·5	7·2	7·2	7 0	7 0	7·4	7·1
1,000–2,000	1·0	6·2	6·3	5·9	5·1	5 1	5 0	5·1	5 4	5·5
2,000–10,000	0·5	9·9	10·1	9·5	6 8	6·9	6·7	7·0	7 6	8·7
10,000 and over	0·05	4·9	5·1	4·8	1·7	1·7	1·7	2·0	2·3	3·7
TOTAL . .	100·0	100·0	100·0	100·0	100·0	100 0	100·0	100·0	100·0	100·0
Under £250	85·7	56·4	55·9	58·5	64·4	64·5	65·3	64·4	62 5	60·9
Over £250	14·3	43·6	44·1	41·5	35·6	35 5	34·7	35·6	37·5	39·1

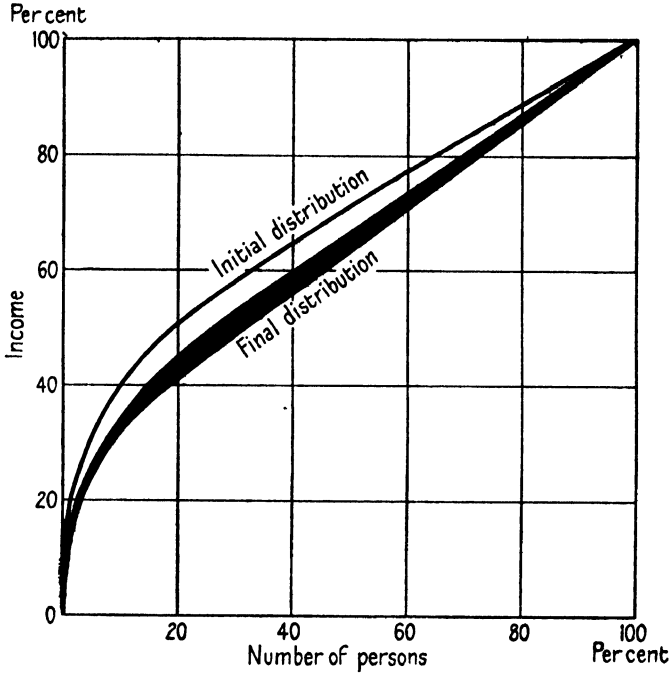


FIG. 18. Producers' and consumers' incomes.

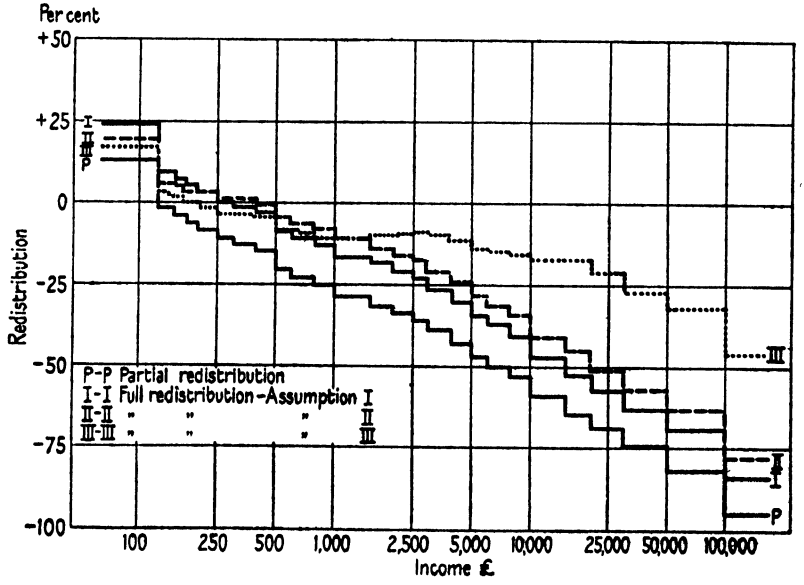


FIG. 19. Proportions of income redistributed.

the individual gains by the process of redistribution, or it might be negative, in which case he loses. This gain or loss is, of course, measured in terms of money, and so measured the gains and losses must cancel since the totals of producers' incomes and of consumers' incomes are equal.

But the measure of redistribution is dependent on arbitrary assumptions, one concerning the allocation of public income, and another concerning the allocation of indivisible benefits.[1] The concept of *partial* redistribution of incomes is free from arbitrary assumptions but is necessarily deficient since it does not deal with the distribution of total national income and expenditure.

Partial redistribution of incomes is measured as the difference (positive or negative) between unadjusted consumers' income and unadjusted producers' income, both of which are defined without recourse to arbitrary assumptions. This amount is equivalent to the excess (or deficit) of allocated benefits over tax payments.

Partial redistribution of incomes is measured in Tables 64 and 65. The total came to *minus* £518 mn., the excess of the tax revenue over expenditure conferring transfer and divisible benefits. The classes under £125 had a clear gain of £145 mn., but all other classes paid more in taxation than the amount they received in allocated benefits. This excess was 5 per cent. of unadjusted producers' income for those with incomes of £125–250, 13 per cent. for those with incomes of £250–500, 23 per cent. for those with incomes of £500–1,000, 30 per cent. for those with incomes of £1,000–2,000, 42 per cent. for those with incomes of £2,000–10,000, and 70 per cent. for incomes over £10,000. Altogether the upper and middle classes paid £594 mn. more in taxation than the cost of allocated benefits conferred upon them, while £76 mn. was conferred upon the working classes by allocated benefits in excess of tax payments by them.

Full redistribution is obtained from the partial redistribution of incomes by allocating public income and indivisible benefits. Two extreme cases can be considered.

First, it can be assumed that none of the expenditure on indivisible benefits or public income is beneficial to the working classes; in other words, only allocatable benefits accrue to the working classes. In that case the upper and middle classes paid £678 mn. in taxation, of which £54 mn. covered the negative public income, £84 mn. paid for allocated government expenditure beneficial to the upper and middle

[1] The assumptions relating to incidence, and so on, are in a category entirely different from the one to which the assumptions referred to belong. Cf. p. 13.

TABLE 64. *Redistribution of incomes*

Range of incomes	*Partial redistribution*	*Full redistribution*			*Partial redistribution**	*Full redistribution†*		
		I	*II*	*III*		*I*	*II*	*III*
£	£ mn.	£ mn.	£ mn.	£ mn.	%	%	%	%
Under 125	+145	+274	+220	+193	+12·3	+23·4	+18·7	+16·5
125–150	−6 7	+29·5	+17 7	+8 5	−2·0	+9·0	+5·4	+2·6
150–175	−13·7	+22·0	+14·4	+3·2	−4·2	+6·8	+4·5	+1 0
175–200	−17 8	+13 0	+9·8	−1·6	−6·4	+4·7	+3·6	−0 6
200–250	−30·5	+9·7	+9·2	−7·5	−8·4	+2·7	+2·6	−2·1
250–300	−26·2	−0·3	+1·5	−9·8	−11·4	−0·1	+0·7	−4·3
300–400	−34·3	−3·9	+1·1	−11·0	−13·1	−1·5	−0 4	−4·2
400–500	−23·6	−5 2	−0 8	−7 4	−15·3	−3·4	−0·5	−4·9
500–600	−22·4	−9 1	−5·2	−9·4	−20·5	−8·5	−4·8	−8·8
600–800	−32·8	−14·9	−9 1	−13·1	−22·9	−10·6	−6·5	−9·3
800–1,000	−25·2	−12·7	−8 2	−10·5	−25·6	−13·2	−8·5	−10 9
1,000–1,500	−48·4	−26 9	−18 7	−18·3	−29·1	−16 6	−11 6	−11·3
1,500–2,000	−35·5	−20 9	−15·1	−11 2	−32·0	−19·4	−14·0	−10·4
2,000–2,500	−26·9	−16·5	−12 2	−7 9	−34·1	−21·6	−15·9	−10·3
2,500–3,000	−21·8	−13 8	−10·4	−5 7	−36·0	−23·5	−17·7	−9·7
3,000–4,000	−35·1	−23 1	−18·1	−8·9	−39·3	−26·7	−20·9	−10 3
4,000–5,000	−26·7	−18 3	−14 8	−7 2	−43 0	−30·4	−24·6	−12·0
5,000–6,000	−22·2	−15·7	−12 9	−6 5	−46 3	−33·9	−27·9	−14·0
6,000–8,000	−32·4	−23·5	−19 8	−9 5	−49·9	−37 5	−31·6	−15·2
8,000–10,000	−23·5	−17 5	−15 0	−6·9	−54·0	−41·6	−35·7	−16·4
10,000–15,000	−39·8	−30 4	−26 6	−11 5	−59·2	−46 9	−41·0	−17·7
15,000–20,000	−23·0	−18 1	−15 9	−5 8	−64·4	−52·6	−46·2	−16·9
20,000–30,000	−24·9	−19·9	−17 8	−7 4	−69·4	−57·5	−51·4	−21·4
30,000–50,000	−22·3	−18 1	−16·4	−7 7	−74·6	−62·8	−56·9	−26·7
50,000–100,000	−24·5	−20·2	−18·4	−9·3	−80·9	−69·4	−63·2	−32·0
100,000 and over	−22·9	−19·4	−18·0	−10·7	−95·0	−84·0	−77·9	−46·3
TOTAL	−518	0	0	0	−11·9	—	—	—

* Percentage of unadjusted producers' income.

† Percentage of producers' income.

TABLE 65. *Redistribution of incomes (Summary)*

Range of incomes	*Partial redistribution*	*Full redistribution*			*Partial redistribution*	*Full redistribution*		
		I	*II*	*III*		*I*	*II*	*III*
£	£ mn.	£ mn.	£ mn.	£ mn.	%	%	%	%
Under 125	+145	+274	+220	+193	+12·3	+23·4	+18·7	+16·5
125–250	− 69	+ 74	+ 51	+ 3	− 5·3	+ 5·8	+ 4·0	− 0·2
250–500	− 84	− 9	+ 2	− 28	−13·0	− 1·4	+ 0·3	− 4·4
500–1,000	− 80	− 37	− 23	− 33	−22·8	−10·8	− 6·7	− 9·6
1,000–2,000	− 84	− 48	− 34	− 30	−30·3	−17·8	−12·6	−11·1
2,000–10,000	−189	−128	−103	− 53	−42·3	−29·6	−23·8	−12·2
10,000 and over	−157	−126	−113	− 52	−70·4	−58·6	−52·6	−24·2
TOTAL . .	−518	0	0	0	−11·9	—	—	—
Under £250	+ 76	+348	+271	+196	+ 3·1	+14·2	+11·0	+ 8·0
Over £250	−594	−348	−271	−196	−30·6	−18·3	−14·2	−10·3

classes, £464 mn. paid for all indivisible benefits, and £76 mn. was the transfer from the rich to the poor.

Alternatively, it can be assumed that all the expenditure on indivisible benefits or public income is beneficial to the working classes. In that case the upper and middle classes pay £678 mn. in taxation, of which £84 mn. pays for government expenditure specifically benefiting them and £594 mn. is the amount transferred from rich to poor.

These figures, £76 mn. and £594 mn., give the absolute lower and upper limits to the amount redistributed from rich to poor.[1] The working classes had a clear gain of £76 mn. from the partial redistribution of incomes which gives the lower limit to the amount of full redistribution. The upper and middle classes had a clear loss of £594 mn. which gives the upper limit to the amount redistributed.

These absolute limits within which the amount redistributed must lie can be narrowed by making an assumption as to the allocation of public income and of indivisible benefits. Public income was allocated in proportion to income from capital. Expenditure on indivisible benefits was allocated (I) in proportion to producers' income, (II) in proportion to income above the subsistence level, that is, progressively in relation to producers' income, and (III) progressively throughout the whole range of incomes.

Under assumption I £250 was the dividing line between those who gained and those who lost by the process of redistribution, under assumption II this level was at £400, and under assumption III at £175. Under all assumptions the proportion of income redistributed changes progressively with income, i.e. the larger the income the smaller is the gain or larger the loss caused by redistribution expressed as a percentage of income. This rule is broken under assumption III only, and not to a significant extent.

The redistribution of incomes, in absolute figures and in percentages of income, is given in Tables 64 and 65. The percentage of income redistributed is shown, under the different assumptions, in Fig. 19 (which also shows partial redistribution as a percentage of income). Under assumption I £348 mn. was redistributed from the rich to the poor, under assumption II £271 mn., and under assumption III £196 mn. It is, therefore, best to take the figure as between £200 mn. and £250 mn.[2] The bulk of the gain, under any of the

[1] In this sense the figure calculated by Colin Clark, *National Income and Outlay*, pp. 142–8, is an absolute minimum, estimated at £91 mn. From Clark's figures the absolute maximum of £423 mn. is easily obtainable. (The figures refer to 1935, and there are differences in definitions and the method of allocation.)

[2] Cf. p. 213.

assumptions, accrued to the classes under £125. The income of the classes with incomes of £125–250 was increased to only a small extent. The income of the working classes increased through redistribution by 8–14 per cent., and the income of the upper and middle classes diminished by 10–18 per cent., according to the assumption taken.

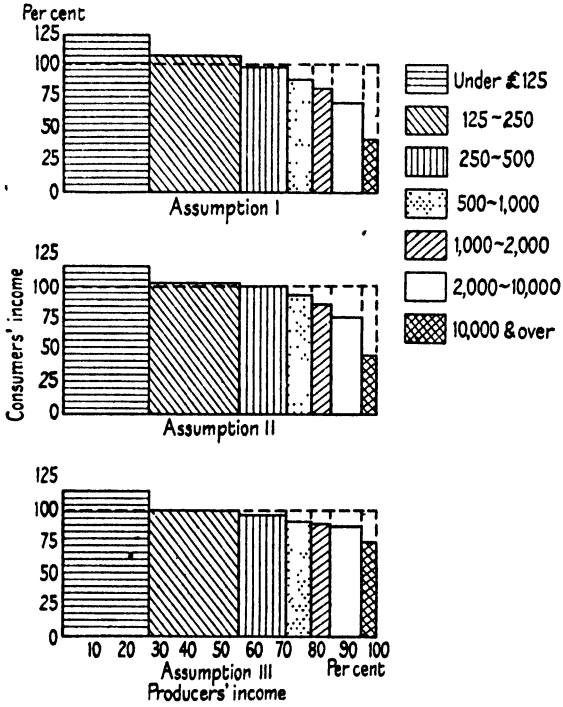


FIG. 20. Redistribution of incomes.

The share of the classes with incomes of £250–500 was insignificant in the process of redistribution. The classes with incomes of £500–1,000 contributed 7–11 per cent. of their income, the classes with incomes of £1,000–2,000 contributed 11–18 per cent. The differences between the percentages obtained for the classes over £2,000 are very great as between the results under assumptions I or II and those under assumption III. The percentages vary between 12 and 30 per cent. for the classes with incomes of £2,000–10,000 and from 24 to 59 per cent. for the classes with incomes over £10,000.

The distribution of consumers' incomes is represented in Fig. 20. The base of the bloc diagrams is proportional to producers' income

and the areas to consumers' income. Hence the areas above or below the broken lines indicated represent the amount of income redistributed under the different assumptions.

iv. Conclusion

It can be seen that, whatever assumption is made, the direction of the redistribution of incomes was from the rich to the poor and its amount, best put at £200–250 mn., was substantial. It is also evident that redistribution was effected by a large social expenditure financed by progressive direct taxation. The amount redistributed from rich to poor came to 5–6 per cent. of the national income with 2 and 14 per cent. as the outside limits.

It is also broadly true that the amount redistributed was a progressive proportion of income and, therefore, the system of public finance as a whole was satisfactory from that point of view.

There are two ways of drawing conclusions from these results. One might compare the distributions of producers' and consumers' income and consider the amount redistributed in relation to the national income or in relation to the income of the classes whose income was transferred to others. It is then found that the amount redistributed from rich to poor was before the war considerable.

If we look at it in another way, the amount redistributed from rich to poor, £200–250 mn., though large, is not so considerable. There were 1,500,000 unemployed in 1937 and if the number of unemployed were reduced to 500,000–750,000, the increase in the national income would have been of the same magnitude as the amount redistributed. Also, the normal annual increase in productivity per worker was 1½ per cent. before the war. Hence the amount redistributed from rich to poor was equivalent to 3–4 years' normal increase in the national income, or about 6–8 years' normal increase in working-class incomes.

Alternatively, the distribution of consumers' income can be considered by itself, in which case it would be ascertained that the final distribution of incomes, after allowing for the effects of redistribution, was still far from being equal. To obtain an equal distribution of incomes it would have been necessary to redistribute a further 21–5 per cent. of the national income, which is many times more than the amount actually redistributed from rich to poor.

Professor Hicks estimates that, by cutting out all surplus consumption above a tax-free income of £1,000, another £225 mn. would have been available for redistribution; or, by setting the maximum at £500,

the amount available would have been raised to £365 mn.[1] By the amount actually redistributed the income of the working classes has been raised by 8–14 per cent. If a tax-free £500 is set as the maximum income, working-class incomes could have been raised by a further 15 per cent.

Clearly, there is no objective criterion as to how far incomes in 1937 should have been redistributed. Objective criteria can be brought in at one point only. In 1937 a considerable proportion of the population of Britain was living below the poverty line, a level of income determined with reference to minimum physical needs. Yet want, in the crudest sense of the word, could have been abolished by a further redistribution of incomes of a relatively modest proportion.

This argument does not, of course, imply that the further redistribution of incomes should have been vertical redistribution. It has been demonstrated that want could have been abolished before the war by a redistribution of incomes within the working classes.[2] This is not to suggest that redistribution of incomes should be confined to the working classes, but is a convincing proof that the abolition of want would have been easily obtainable by a more equal distribution of resources.

Taking a broader view and not regarding the size of the national income as given, it can be said that social justice demands redistribution of incomes greater than that recorded. On the other hand, each increase in the amount redistributed might have an adverse effect on the incentive to work and thus might diminish the national income, though this is not necessarily so if that amount is spent on services, such as health services, which increase efficiency. From the point of view of employment redistribution of incomes from rich to poor, that is, from people whose saving out of marginal income is high to people whose saving is low, increases the propensity to consume and therefore—even allowing for some adverse effect of high taxation on the propensity to invest—increases employment and incomes.

The amount redistributed in 1937 is of real interest only when comparison is made with the amount redistributed at other times or in other countries. When a comparison is made, however, allowance

[1] *The Social Framework*, pp. 189–90. The figures refer to surplus personal incomes only, but imputed incomes are devoted to saving and not consumption. Even the sums quoted contain some saving and no allowance was made for death duties. On the other hand, Professor Hicks when discussing practical socialism assumes that all those who now have an income of £500 or more would still be able to obtain an income of £500 under socialism. (It should be noted that this calculation is at prices ruling in 1937–8.)

[2] *Beveridge Report*, Cmd. 6404, para. 465.

must be made for various factors influencing the need for redistribution. This depends, primarily, on the composition of the population and the state of employment. A comparison of the amount redistributed is a problem of index numbers. One must find what the amount redistributed would have been in two periods with different rates of taxation and rates of benefits but with the same composition of population, state of employment, and consumption habits. Any approximate calculation would suggest that redistribution in Britain in 1937 was at a higher level than in any other previous year and possibly higher than in the other major capitalist countries.

It could be demonstrated, from the sociological point of view, that the amount redistributed depends partly on the need for, partly on the resources available for, redistribution. Four main factors can be enumerated: the composition of the population, the state of employment, the level of real incomes, and the distribution of incomes. The amount redistributed in Britain before the war must be judged with reference to the growing number of elderly persons, high level of unemployment, high level of real incomes, and an unequal distribution of incomes.

As the level of real incomes rises, redistribution is expected to increase more than proportionately; for as the level of real incomes rises not only does the standard of human subsistence rise[1] but it becomes increasingly intolerable to have people living below that level. The greater inequality of incomes also tends to increase the amount redistributed; for with greater inequality not only is the amount available for redistribution greater but also the social force (based ultimately on the fear of revolution) which tends to redistribute incomes is stronger. This is more so with the acceptance of modern economic doctrine, since it cannot be argued that the maintenance of high incomes is necessary for economic progress.

It must not be believed, however, that redistribution reached its climax in 1937. The methods of war finance brought in certain innovations which have implications on the future technique of redistribution. First, the proportion of revenue raised in direct taxation has been increased, and greater sections of the population were brought into the classes paying income tax; this makes it possible to increase the progressiveness of the system of taxation, and also to eliminate the dip in the tax curve, which in the past was caused by the regressive nature of indirect taxes. Secondly, purchase tax was introduced, which, un-

[1] The subsistence level is regarded not as something absolute but as being determined by social opinion.

like the indirect taxes of the pre-war system, fell mainly on luxuries, and which has thus demonstrated that commodity taxation and progressive taxation are not necessarily contradictory. Thirdly, subsidies on food were introduced, which (apart from other effects) benefit particularly low incomes, out of which a high proportion is spent on food.

This analysis of the redistribution of incomes has, of necessity, been based on a limited view of the whole question; the national income and the distribution of that income have been taken as given, and on that basis the amount of redistribution through public finance has been measured, and its effect on the inequality of incomes assessed. On any wider view, however, the size and distribution of the national income should not be regarded as given, and the need for redistribution should be investigated. It would then be found that the evils which in the past redistributive finance sought to mitigate could be dealt with by other forms of social policy, and that as a social policy the method of redistributive finance may be regarded as inferior to other possible policies.

Redistribution of incomes through public finance was not, however, a deliberate policy, but accidental to the piecemeal development of the social services. It was an *ad hoc* policy: certain needs had to be satisfied by society as they arose, and as social conscience demanded their satisfaction. The fact that the payment for these social services fell largely on the upper income classes was to some degree an incidental consequence of the British system of taxation. But while this method dealt, to some extent, with the exigencies of the moment, it has not solved any of the problems that called it forth and has left no permanent marks on the initial distribution of incomes. Redistribution was of the nature of a palliative rather than of a cure.

An ideal social policy should attack the causes which give rise to the need for the redistribution of incomes. For instance, unemployment, with all its consequences, accounts for a large part of the need. It has by now been admitted that a full employment policy and not a system of relief is the best (and also the cheapest) solution of this problem. Similarly, the need for redistribution arising from sickness and ill health could to a large extent be eliminated by an adequate development of health services of a preventive nature, including a nutrition policy.

But the basic fact remains that, as a result of the inequality of incomes, wages are insufficient to provide for the normal contingencies of life, such as the maintenance of any but a small family, or the

provision for old age. No doubt in the course of time the standard of living of the working classes would rise (because of the increase in the productivity of labour) sufficiently to provide for its normal needs; in the meantime, however, a greater equality in the initial distribution of incomes could achieve the same result. Redistribution of incomes through public finance could then be restricted to provide for accidental and unforeseen needs only.

The main cause of the inequality of incomes is, as has been demonstrated above, the very great inequality in the ownership of capital; the inequality of capital itself is maintained chiefly by inheritance, and partly by the inequality of savings due to the inequality of incomes. Hence we have a vicious circle between the inequality of income and that of capital. Another vicious circle arises through the inequality of opportunity, since out of a large income one can pay for an expensive education which, in its turn, secures a large income. Before the war death duties were the only form of tax designed to mitigate the inequality of inherited wealth, but they remained largely ineffective because of the possibility of evasion by the transfer of property during life. Free education was provided up to the age of 14, but after that age opportunity remained closely dependent on income.

The social policy of the future must, therefore, attack the roots of inequality from three main directions. First, the inequality of capital should be diminished; this would lessen not only the inequality of unearned incomes, but also, indirectly, the inequality of earned incomes. Secondly, the share of the national income going to capital should be reduced, which can be achieved by a policy of low interest rates, together with a fresh attack on monopoly in its various forms; this would greatly improve the distribution of incomes, since the importance of unearned incomes (the distribution of which is greatly unequal) would be diminished. Lastly, further expansion is required in the social services giving greater equality of opportunity, not only through the provision of equal educational opportunities, but also through a policy of adequate nutrition and health services.

During the last twenty-five years the problem of unemployment was the major economic problem of all capitalist countries, together with the problems arising out of general international insecurity. The solution of these problems is, we hope, within our power. We shall then be able to turn to the two great economic problems of the world: how to increase the size of the income of countries, and how to ensure its more equal distribution, between both countries and individuals.

APPENDIX A

ESTIMATES OF THE BRITISH NATIONAL INCOME, 1924–38

i. The estimates of Professor Bowley and Colin Clark

The estimates of Professor Bowley, based on the adding incomes method, are for the years 1924–38 and published in *Studies in the National Income*. The estimates of Mr. Clark, based on the same method, except that he substitutes the net output of agriculture for incomes in agriculture, are for the years 1924–33 and published in *National Income and Outlay*.[1]

In Table 66 the differences between the two estimates during the period covered by both, 1924–33, are analysed. National income is shown at factor cost, and therefore indirect taxes have been excluded from both estimates.[2]

The differences due to definition are shown in col. (3) of the table and consist of the following. Bowley includes interest issued or accrued on saving certificates which is free of income tax; Clark omits the item. On the other hand, Clark makes an allowance for net business losses, evasion, and (but not in all cases) for the changing valuation of stocks;[3] Bowley does not deal with these problems.

The definition of government income is a matter of convention, assuming that consistent definitions of national expenditure are adopted. The differences between the two definitions are shown in col. (4).[4]

In certain years there are differences in the interpretation of income-tax statistics as shown in col. (5).[5] Clark makes corrections for 1924–7 because of the system of three-years-average assessments, based on information from the Inland Revenue; Bowley corrects for 1924 only, though his information must have been more recent. The small difference for other years is due to different allowances for under-assessments under Schedule A.

Clark estimated agricultural incomes by the net output method and the differences are shown in col. (6). Though farming profits are believed to be

[1] Details of his estimates for later years, some published elsewhere, are not given and were obviously provisional.

[2] The only item added by Professor Bowley (which is regarded here as an indirect tax) was employers' contribution to social insurance.

[3] For the estimate of business losses a sample analysis is used; for evasion an estimate by Bowley and Stamp; for the changing valuation of stocks cf. App. B.

[4] Bowley's definition is not stated; Clark's definition differs very slightly from the official one. He includes central government income only, but local government income is included in income-tax assessments and the income of extra-budgetary funds consists of transfers. He adds, however, the balance of international government transactions, which seems superfluous.

[5] For 1933 Clark anticipated assessments which subsequently turned out to be higher.

TABLE 66. *Estimates of the national income, 1924–33*

(In million £'s)

Year	Bowley	Clark	The excess of Bowley's estimate over Clark's due to							
			Definition	*Government income*	*Income-tax assessments*	*Agricultural incomes*	*Wages*	*Small incomes*	*Interest on the debt*	*All statistical causes* (5–9)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1924	3,852	3,549	−9	12	38	22	140	90	10	300
1925	3,762	3,862	−255	15	−35	−12	81	79	27	140
1926	3,723	3,662	−107	8	−36	6	104	79	7	160
1927	3,868	3,829	−121	8	−20	23	62	78	9	152
1928	3,895	3,802	−57	6	−9	21	41	80	11	144
1929	3,897	3,869	−115	5	−9	20	39	80	8	138
1930	3,783	3,817	−215	4	−14	−8	14	185	0	177
1931	3,408	3,383	−6	5	0	9	−24	27	14	26
1932	3,295	3,303	5	−22	−2	17	−18	4	8	9
1933	3,500	3,421	32	5	(33)	6	−22	2	23	(42)

Sources: Bowley, op. cit., Table IX, p. 81. (B. *Total* less *item* 11.)
Clark, op. cit., Table 37, p. 88. (Net National income *less* indirect taxes and rates.)

under-assessed on Schedule B, the comparison here would suggest the opposite.[1]

Differences in the wage-bill are shown in col. (7). Bowley obtains a weekly wage-bill by multiplying the number of workers employed and average earnings. It is then assumed that a year consists of 48 working weeks on the average.

Clark's method was almost independent of Bowley's. The bulk of the wage-bill was obtained from the Census of Production, 1930, and supplemented by the wage-bill of the railways, and so on. An estimate was made for the residue using Bowley's method.

The differences in the estimates for incomes, other than wages, under the income-tax exemption limit, and £10–12 mn. for the excess of the income of non-profit-making bodies over assessments (overlooked by Clark) are shown in col. (8).[2]

The differences in estimates of income going abroad are small, but there are some persistent differences in interest on the national debt deducted, as shown in col. (9). Clark deducts all interest issued on the internal debt, though he should not have deducted interest issued on saving certificates or to the extra-budgetary funds, since these were earlier omitted.[3]

Col. (10) sums the differences due to statistical causes (cols. (5)–(9)). The differences (which should be related only to items estimated independently) are small for the recent years, for which the estimates were more accurate, but fairly large for earlier years.

ii. The estimates of Professor Bowley and the White Paper (Cmd. 6347)

Professor Bowley compares his estimates for 1938 with the White Paper (Cmd. 6261, 1941), having received information from the authors of the latter.[4] The subsequent White Paper (Cmd. 6347, 1942), however, raised the estimate for 1938 by £180 mn. It can be seen that of this sum £135 mn. was due to the correction for stocks, government income has been raised by £13 mn., the wage-bill by £24 mn., and other items by £8 mn. Taking into consideration all information published elsewhere, the official estimate for 1938 has been broken down in Table 67.

Bowley includes employers' contribution, which the White Paper excludes because it is regarded as an indirect tax; also, he makes no correction for the changing valuation of stocks or business losses. Neither estimate makes an allowance for evasion.

[1] In Bowley, op. cit., p. 95, the net output of agriculture has been estimated by different methods, but no attempt has been made to reconcile the considerable divergences.

[2] The great difference for 1930 is due to Clark regarding the change in the income-tax exemption limit as being effective in 1930 (which was correct for incomes assessed under Schedules B, D, and E) and Bowley as in 1931.

[3] For Bowley's definition cf. p. 243, below.

[4] Bowley, op. cit., pp. 83–4.

Bowley estimates the investment income of non-profit-making bodies as £65 mn. and income from small property as £60 mn., and these figures were adopted by the White Paper.

TABLE 67. *The national income in 1938 (according to Cmd. 6347)*

(In million £'s)

Schedule A assessments	345	
Correction for underassessment	7	
Small property and non-profit-making bodies	21	
1. Rent of land and buildings		373
Schedule B assessments	29	
Correction for underassessment	5	
Schedule C assessments	141	
Schedule D assessments	1,057	
Interest accrued on saving certificates	18	
Government income from trading and property*	37	
Investment income of non-profit-making bodies and small property	104	
National Defence Contribution liability	25	
Writing down of stocks	135	
Earnings of workers on own account	40	
Less Net business losses	−20	
Income due to residents abroad	−35	
Interest on the national debt	−185	
2. Profits and interest		1,351
Schedule E assessments	980	
Salaries below the exemption limit	45	
Earnings of shop-assistants below the exemption limit	54	
Non-assessed pay and allowances of officers in H.M. Forces	2	
3. Salaries, &c.		1,081
4. Wages, &c.		1,790
NET NATIONAL INCOME		4,595

* Except local government profits (£26 mn. net) included in Schedule A and D.

Bowley allows only £3 mn. for corrections to Schedule A assessments and none for Schedule B. He puts interest issued and accrued on saving certificates at £20 mn., while Cmd. 6261 puts the figure at £11 mn. (which includes interest issued only). It would seem that this figure has been raised to £18 mn. in Cmd. 6347.[1]

Bowley's estimate of government income excludes the income of extra-budgetary funds and there are further small differences. The official estimate (but not Bowley's) adds National Defence Contribution which is a direct tax though deducted from income-tax assessments.

Bowley's estimates of 'other incomes' (small profits and salaries), £85 mn., and of the earnings of shop-assistants below the exemption limit, £54 mn., were adopted by the White Paper.

[1] It can be estimated from reports of the National Savings Committee that interest accrued exceeded interest issued by £7 mn.

The biggest statistical difference is in the wage-bill, where the official estimate exceeds Bowley's by £99 mn. As explained, £50 mn. of this sum is due to different assumptions as regards the average number of working weeks in the year. On the whole Bowley's method was used[1] and there is no difference in the estimate for the weekly wage-bill. But the official estimate implies a year of 49·4 working weeks, as against Bowley's 48.

There are two reasons why Bowley's assumption is preferable to that of the White Paper. Detailed calculations were made and it has been found that the average number of weekly contributions for unemployment insurance by employed wage-earners was 49 in 1937.[2] All persons who performed, or were paid for, any work during a calendar week were liable to contribute for that week,[3] therefore the number of weeks worked in a year must be less than the number of weekly contributions, and 48 seems to be a close estimate for the figure.[4]

Secondly, it has been shown[5] that Colin Clark estimated the wage-bill by an independent method, except for a small part for which a multiplier of 48·7 was implied. Yet for the five years centring on 1931, the base year of the estimates, the difference between the two wage-bills is 0·2 per cent. only, which also confirms the correctness of Bowley's procedure as against the White Paper's.[6]

Bowley's wage-bill has been extrapolated from 1931 when holidays with pay were not customary. This factor might account for £10 mn. in the difference. £15 mn. was probably due to various inaccuracies in extrapolation as against a direct estimate for 1938.[7] The remaining £24 mn. of the difference has been added to the official estimate since Bowley wrote, and the reason for this is unknown.

On the basis of the above argument there is justification for placing the correct wage-bill about midway between the two estimates.

Bowley's deductions for income to residents abroad and interest on the national debt were adopted in the White Paper. In the Board of Trade's estimate of the balance of payments, incomes to residents abroad are put at £15 mn., but seem to exclude incomes to residents in Eire.[8] Estimating

[1] Cf. p. 240, above.

[2] Cf. p. 101, above.

[3] For example, contributions are paid on account of holidays with pay, which accounts for 0·3 out of the 49 contributions.

[4] The White Paper's 49·4 is above the possible maximum of 49·1, allowing for holidays with pay.

[5] Cf. p. 240, above.

[6] The close agreement between the two estimates of the wage-bill is partly due to coincidence. Apparently Bowley has overestimated the number of wage-earners in employment whilst Clark put the average wage of domestic servants too high, both overestimates coming to £60 mn.

[7] Apparently the proportion of females working has increased between 1931 and 1938 above the figure assumed by Bowley, and this accounts for the difference. Cf. p. 276, below, and Bowley, op. cit., p. 56 n.

[8] It is stated that the negative balance with Eire was £5 mn.

the latter at £10 mn. and grossing for income-tax, Bowley's £35 mn. for the income of residents abroad is obtained.[1]

The reason for the deduction of £185 mn. for interest on the national debt is not altogether obvious, and it is curious that the White Paper, according to Bowley, made the same deduction, though there the interest income of extra-budgetary funds, £14 mn., was added. It is clear that all interest on the national debt, issued or accrued (£222.mn.), should be deducted.

It is sometimes held that only interest to residents in Britain should be deducted since interest to residents abroad is not transfer but real income and is already deducted, being included in incomes to residents abroad. But this view is fallacious because all interest assessed to income-tax must be deducted to arrive at home-produced net output *plus* gross income from abroad. To obtain net national income (home produced net output plus net income from abroad) a further deduction has to be made for incomes to residents abroad, that is, interest to residents abroad is deducted twice.[2]

[1] If this interpretation is correct, it is obvious that income-tax paid by residents abroad should not be deducted from the national income.

[2] It also becomes clear that when dividing the national income between private incomes and government income (e.g. in Table II, Cmd. 6347), incomes to residents abroad should be split between private incomes and government income, interest on the debt and war pensions payable abroad reducing the government's share in the total.

APPENDIX B

THE VALUATION OF STOCKS AND THE NATIONAL INCOME[1]

THE definition of the national income used here is that of a maximum which could have been consumed while maintaining the real amount of capital intact. It follows that investment is defined as the value of the increase in real assets, and profits as current receipts less the current cost of replacing factors of production used up.[2] The current value of any increment in stocks should be added to, or of any decrement deducted from, profits.

For this purpose the Inland Revenue definition of profits is not adequate because it includes the increment in the value of stocks (stocks being valued at either cost or current prices, whichever is the lower), and not the value of the increment. Profits must, therefore, be corrected before being included in total national income on the definition adopted.[3]

In order to correct assessments of profits the amount of investment in stocks must be known in real terms. A price index of the balance-sheet value of stocks is necessary with the aid of which the estimated balance-sheet value of stocks can be reduced to real terms. Further, it is necessary to know the period of turnover of stocks in the major industrial groups.

The balance-sheet value of stocks is obtained from samples.[4] The proportion of stocks to the average of raw material costs and gross output gives the period of turnover for industrial groups. The price-index for any month is obtained by averaging prices[5] over the period of turnover ending that month, but taking the current price of the last month instead of the price in any month if the former is lower. The monthly index numbers were averaged to obtain an index for the end of each calendar year.[6] It has been estimated that investment in stocks amounted to £50 mn. in 1937 and that £95 mn. is to be *deducted* from profits, and the national income, to correct for the valuation of stocks.[7]

Since the 'writing down' of stocks from cost to current prices must always be followed by a return to cost prices when prices start rising again, it does not matter from the point of view of long-run profits whether firms

[1] Cf. *Economica*, 1942, pp. 349 et seq. Also Cmd. 6438, p. 13, Cmd. 6520, p. 4, and *Economica*, 1944, p. 12 seq.

[2] Meade and Stone, op. cit., p. 219.

[3] Colin Clark (op. cit., p. 293) and Cmd. 6347 (note to item 2 of Table I) make this correction for years of falling prices, but it is stated that no correction is required in years of rising prices. (But see Cmd. 6438, p. 13.)

[4] Cf. A. Maizels, *Economica*, 1941, p. 151, continuing the samples of Colin Clark, op. cit., App. III.

[5] Using a weighted average of wholesale and retail prices.

[6] Using a weighted average based on the distribution of the periods to which balance-sheets refer, given in *Colwyn Report*, Appendix XI.

[7] There is reason to reduce the figures as they were originally estimated in *Economica*, loc. cit. (Cf. *Economic Journal*, 1943, p. 264 n.)

change over to the current price basis when prices are falling or not. If it is assumed that stocks are always valued at cost, for the period 1924–38 the figures would be altered in two cases only and not considerably. It follows that the correction in the national income is necessary not because the Inland Revenue allows the standard of valuation to be changed but because costs change.

It can also be shown that the same correction is applicable to the national income measured by the output method if net output is obtained on the definition of the Census of Production.[1] The census definition, similarly to the income-tax definition, measures value added by production to original cost and not the excess of value over current replacement cost.

Mr. Colin Clark arrived at the correct formula for the calculation of the necessary corrections of assessments.[2] He applied the formula to years of falling prices, but explicitly stated that no corrections were necessary for years of rising prices (when the formula would have given negative results).[3] It is difficult to see the reasons for this statement.

A note of caution must be added in respect to the calculation of investment in stocks (the physical change in stocks valued at annual average prices), if rates of consumption and purchases of stocks are not constant during the year and therefore the accumulation or decumulation of stocks is not even. Correctly, investment in stocks should be valued at an annual average of monthly prices weighted by monthly changes in real stocks. This method, however, may lead to absurd results if real stocks over the period are alternately rising and falling, in which case the net change in physical stocks over the year might be zero, but the formula will not give zero.

But investment in stocks has to be defined as the net change in stocks valued at the average price over the period because this method alone is consistent with the current practice of valuing the other items of national income, that is, consumption and net investment in fixed capital.

This method is free from ambiguity only if the various components of the national income, consumption, net investment in fixed capital and in stocks accrue at a uniform rate over the year. In fact, the concept of money national income would only be free from ambiguity if annual consumption, net investment in fixed capital and in stocks were all valued at prices ruling at a single moment, and not at the average prices over the period.

[1] This also applies to the census in the United States.

[2] Op. cit., App. III. $Q_2(P_m-P_2)+Q_1(P_1-P_m)$ is the formula, where Q_1 and Q_2 are the volume of stocks at the beginning and end of the year, P_1 and P_2 the balance-sheet prices at the same dates, and P_m the average price over the year. (There is, however, a small error in the working, affecting, for instance, the results for 1934. Q_1 and Q_2 have been correctly obtained from balance-sheet values by using an index of cost or current price whichever was the lower. But when the formula was applied P_1 and P_2 were always taken as current price, though in certain cases cost prices were appropriate.)

[3] The statement first appeared in *The National Income, 1924–1931*, and has been corrected by S. Kuznetz, 'Changing Inventory Valuations', in *Income and Wealth*, vol. i, 1937.

APPENDIX C

ESTIMATES OF THE BRITISH NATIONAL EXPENDITURE

NET national expenditure consists of private consumption, investment, and government consumption, less indirect taxes, plus subsidies, that is, consumption and investment measured at factor cost.

i. PRIVATE CONSUMPTION

Private consumption was first estimated in detail by Mr. Feavearyear.[1] His estimate for 1932 was used by Mr. Clark in *National Income and Outlay* for extrapolation for later years.

An estimate for 1938, on which Table 68 is based, was published in the White Paper, Cmd. 6438, section B, in nine categories. The method by which details of the official estimates were filled in and figures for 1937 compiled (as shown on p. 53) was the following:

Food. The retail value of the national food consumption has been estimated in two ways, obtaining £1,155 mn. by either estimate. First, expenditure on food in 1938, as given in the White Paper, has been brought back to 1937, using the index of retail sales of food. To this figure consumption by the Forces has been added.

Secondly, a detailed estimate of food expenditure in 1937 has been made, as shown in Table 69. For 1934 Mr. Feavearyear made a detailed estimate of the quantities of human food consumed (both home produced and imported), and, allowing for wastage, of the retail value of each food group.[2] Production and imports of human food have also been estimated for 1937–8.[3] Only the main items are included, but the figures have been completed and retail values estimated in Table 69. For meat the figures covered 80 per cent. of the consumption, and it was assumed that the change in the remainder was the same between 1934 and 1937, that is, an increase of ¼ per cent. in weight. Consumption of tea, coffee, and cocoa are given in *Customs and Excise Reports.* Changes in prices have been calculated on the basis of prices collected for the Ministry of Labour cost-of-living index and, for fruit and vegetables, from import prices, allowing for the latter being wholesale prices.

From the £1,155 mn. various allowances have to be made. Food consumed by persons in hospitals, poor law institutions, and other places is included either in expenditure on medicine or in government expenditure. To eliminate duplication 1 per cent. of food consumption has been deducted. Moreover, about 10 per cent. of the total is consumed in hotels and restaurants for which food is bought at wholesale or semi-wholesale

[1] *Economic Journal*, 1931 and 1934.

[2] Cf. J. B. Orr, *Food, Health, and Income*, Table I and App. III.

[3] Cf. Sir John Orr and D. Lubbock, *Feeding the People in War-time*, Table 2.

TABLE 68. *Private consumption in 1938*

(In million £'s)

Food	1,198
Drink	272
Tobacco	180
1. Food, drink, and tobacco	1,650
Rent, rates, and water charges	500
Coal and coke	105
Gas, electricity, and oil	89
Furniture, household textiles, and hardware	221
Household stores	40
Domestic service	105
2. Rent, rates, fuel, and household goods	1,060
Women's and girls' wear and dress materials	231
Men's and boys' wear	130
Boots and shoes	80
Laundry	22
3. Clothing and Laundry	463
Private motoring	126
Other travel	170
4. Travel	296
Books, newspapers, periodicals, and stationery	100
Drugs, perfumery, photographic, and optical goods	40
Other goods	85
Medicine	60
Entertainment	63
Betting	50
Postal services	40
Hairdressing	20
Undertaking	8
Other services, including hotels and restaurants	100
5. Other goods and services	566
Private expenditure on consumption (at market prices)	4,035

Note. The figures include expenditure on consumption by individuals and by non-profit-making bodies. Rent includes the rent of buildings occupied by non-profit-making bodies and hotels. The income in kind of the Forces is included in 'Other goods'.

prices, warranting a further deduction of 2 per cent. In addition the value of food produced on allotments and in private gardens, and not sold, should be deducted because the corresponding item has not been included in the national income. Allowing £10 mn. for this item,[1] personal expenditure on food in 1937 came to £1,110 mn.

Drink. Expenditure on drink has been estimated for each year and

[1] Estimate based on notes to the Ministry of Labour family budgets, 1937–8, and retail prices.

TABLE 69. *Food consumption in 1934 and 1937*

	1934 (Thousand tons)			1937–8 (Thousand tons)			Retail value 1934 (£ mn.)	Retail value 1937 (£ mn.)
	Home products	Imported	Total	Home products	Imported	Total		
Beef and veal	614	646	1,260	} 918	1,007	1,925	—	—
Mutton and lamb	255	338	593					
Bacon and ham	104	438	542	151	325	476	—	—
Other pigmeat	271	66	337	—	—	—	—	—
Meat offals	107	68	175	—	—	—	—	—
Poultry and game	78	24	102	—	—	—	—	—
Rabbits	16	26	42	—	—	—	—	—
Total meat	1,445	1,606	3,051				294·5	305
Eggs	279	170	449	409	190	599	44·5	61
Fish	742	173	915	774	186	960	52	55·5
Fresh milk and cream	3,930	8	3,938	4,556	—	4,556	96	} 127·5
Condensed milk	137	107	244	188	103	291	10	
Butter	57	485	542	45	472	517	54·5	66·5
Cheese	75	150	225	37	146	183	23	23·5
Vegetable lard	48	142	190				11	11
Margarine	166	—	166				8	10
Wheat flour	660	3,560	4,220	767	3,197	3,964	} 88	105
Other cereals	93	196	289	128	237	365		
Apples	400	267	667	} 661	1,948	2,609	119	100
Bananas	—	256	256					
Other fruit and nuts	300	1,246	1,546					
Potatoes	4,600	108	4,708	4,400	145	4,545	37	38
Other vegetables	1,540	580	2,120	(2,000)	644	(2,600)	40	46
Sugar	490	1,505	1,995	469	1,618	2,087	49	53
Cocoa (mn. lb.)	—	1·2	1·2	—	1·5	1·5		
Tea („)	—	430·5	430·5	—	434·6	434·6	} 48	53
Coffee („)	—	0·3	0·3	—	0·3	0·3		
Preparation of complex foodstuffs	—	—	—	—	—	—	100·5	100
TOTAL	—	—	—	—	—	—	1,075	1,155

published annually in *The Times* by Mr. G. B. Wilson.[1] An allowance has to be made for Northern Ireland. The official estimate seems to be somewhat higher.

Tobacco. Expenditure on tobacco in 1937–8, based on an expert estimate, has been given in *The Burden of British Taxation* (p. 126), from which estimates for other periods can be obtained, since physical consumption is published in the *Customs and Excise Reports*. The Retail Trade Committee has estimated expenditure on tobacco in 1939 as £180 mn.[2]

Rent. The official estimate for 1938 includes the rent of dwellings and non-profit-making bodies, hotels, boarding-houses, &c., but the estimate in Table 7 refers to dwellings and non-profit-making bodies only. It is known that rates on dwellings amount to about two-thirds of all rates.[3] Also, knowing the average poundage of rates, expenditure on rent could

[1] Cf. G. B. Wilson, *Alcohol and the Nation*, for estimates since 1910.
[2] *Second Interim Report*, 1942, p. 3.
[3] Cf. *The Burden of British Taxation*, p. 21.

be estimated. The estimate has been confirmed by figures derived from family budgets.[1]

Fuel and light. The domestic fuel and light consumption has been estimated in P.E.P. reports and estimates of average prices are also available.[2] In 1937 expenditure on the domestic consumption of coal amounted to £88 mn., coke £16 mn., gas £43 mn., electricity £40 mn. (of which £15 mn. was spent on lighting), and other fuel £3 mn.

Household goods. Expenditure on furniture, household textiles, and hardware has been estimated for 1939 by the Retail Trade Committee as £225 mn., on household stores as £40 mn.[3] These figures can be extrapolated for other years by using indices of retail trade sales. An allowance has to be made for office furniture.

Domestic service. Expenditure on domestic service has been estimated as £105 mn. by taking into account the number of domestic servants and gardeners in private employment and their average remuneration, including payment in kind.[4]

Clothing and laundry. Expenditure on clothing for 1939 has been estimated by the Retail Trade Committee as £240 mn. on women's and girls' wear and dress materials, £140 mn. on men's and boys' wear, and £85 mn. on boots and shoes.[5] These figures can be extrapolated for other years using indices of retail sales. Expenditure on laundry can be derived from an estimate by Mr. Feavearyear for earlier years.[6]

Travel. The estimates for private expenditure on motoring and other travel in 1938 are based on figures given in Cmd. 6261 (1941). It can be estimated from motor-car registration that private expenditure on motoring was about 8 per cent. less in 1937 than in 1938. Passenger transport receipts on railways, buses, and trams were £5 mn. less.

Other goods. Expenditure on books, newspapers, periodicals, stationery, drugs, perfumery, photographic, optical, sports, travel and other goods, and hairdressing, has been estimated for 1939 by the Retail Trade Committee.[7] Expenditure in other years is obtained using indices of retail trade sales. An allowance has to be made for expenditure by business on items such as stationery.

Services. Expenditure on medicine is based on Mr. Feavearyear's esti-

[1] Cf. p. 154, above. The figure also agrees with the residue of the corresponding item in the White Paper, Cmd. 6261, 1941.

[2] *Report on the Gas Industry*, Tables XIII and XIV, and *Report on the Supply of Electricity*.

[3] Loc. cit.

[4] The number of domestic servants in private employment has been estimated as 140,000 men and 1,270,000 women aged 16–64, 100,000 men and women 65 and over, and 50,000 private gardeners. The average wage of men, including payment in kind, was 40*s*. (more for gardeners), of women 23*s*.

[5] Loc. cit.

[6] *Economic Journal*, 1934, p. 39.

[7] Loc. cit. Books, newspapers and periodicals, stationery, &c., £120 mn.; Drugs, perfumery, photographic and optical goods, £50 mn.; Sports and travel goods, £40 mn.; Miscellaneous, £80 mn.

mate for 1932.[1] In Table 68 health insurance medical benefit (£13 mn.) is included, in Table 7 excluded.[2] Expenditure on entertainment can be derived from entertainment duty statistics, since the distribution of ticket sales in cinemas (which forms the main item) is known.[3] Expenditure on betting has been estimated in *The Economist*.[4] Expenditure on postal services is *The Home Market* (1939) estimate confirmed by family budgets.[5]

The Home Market estimated expenditure on hotels and restaurants in 1937 as £85 mn.[6] An allowance has been made for expenditure by business. In Table 68 the rent of hotels is included in expenditure on rent and not in expenditure on hotel services. Expenditure on undertaking has been estimated by Mr. Feavearyear as £8 mn.[7] Other services include religion and private education.[8]

It must be remembered that in the case of expenditure on clubs, trade unions, and so on, not the full amount of expenditure is included but only the part not paid back directly to the public.[9] In Table 68 the rent of hotels, hospitals, or churches is included in rent, while in Table 7 this is included in expenditure on hotels, medicine, or other services, in so far as it is paid out of personal incomes.

Colin Clark in *National Income and Outlay* extrapolated Mr. Feavearyear's estimate of consumption for 1932. This series has been continued, and for 1938 Mr. Clark's estimate exceeds the official estimate by 9 per cent.[10]

An even higher figure is used for 1937 by *The Home Market*.[11] Since details of this figure are given it can easily be ascertained that expenditure on food, rent, and domestic service has been grossly over-estimated.[12]

ii. Expenditure on investment at home

For expenditure on investment at home in 1937 and 1938 the estimate given in Table 70 can be compiled. Gross investment in fixed capital has

[1] *Economic Journal*, 1934, p. 41. Doctors' fees £30 mn., income of voluntary hospitals £15 mn.

[2] Health insurance medical benefit is here regarded as a subsidy. Cf. p. 170, above.

[3] R. Rowson, 'The Cinema Industry in Great Britain in 1934', *Journal of the Royal Statistical Society*, 1936, p. 67.

[4] 29 February and 7 March 1936. The amount of money put up in betting was about £500 mn., of which £50 mn. covered the costs and profits of the betting industry.

[5] *The Home Market* (1939), p. 95, and also p. 157, above.

[6] Loc. cit. The cost of food consumed in hotels and restaurants is included in all estimates as expenditure on food.

[7] *Economic Journal*, 1931, p. 59.

[8] *The Home Market* estimated expenditure on private education in 1937 as £25 mn., on religion as £35 mn.

[9] Subscriptions providing cash benefits are regarded as transfers.

[10] Pritchard, Wood, and Partners, Ltd., *A Commercial Barometer*. Consumption in 1937 is put at £4,331, in 1938 £4,410 mn.

[11] 1939 edition, p. 95, gives (omitting direct taxes paid) £4,420 mn.

[12] It is obvious that *all* rents (and not only the rents of dwellings) have been included. The figure for food has apparently been extrapolated from Mr. Feavearyear's estimate for 1932.

been estimated by Colin Clark and A. Maizels.[1] Depreciation and maintenance has been estimated by A. Maizels, but an allowance had to be made for the depreciation of untaxed property not actually made good.[2] Net investment in working capital and stocks has been estimated above.[3] Expenses connected with investment have been estimated by Colin Clark and A. Maizels.[4]

TABLE 70. *Home investment in 1937 and 1938*

(In million £'s)

	1937	*1938*
Gross investment in fixed capital	838	773
Depreciation and maintenance	−462	−484
Net investment in fixed capital	376	289
Net investment in working capital and stocks	50	44
Expenses connected with investment	95	90
NET INVESTMENT AT HOME	521	423

The estimate of £423 mn. for 1938 can be reconciled with the official estimate of £287 mn. by correcting the latter for the changing valuation of stocks (£70 mn.)[5] and for depreciation of untaxed property not made good. The rest of the difference is due to definition, in so far as the official estimate is restricted to privately financed investment only. Gross public investment in 1938 (excluding housing and Post Office) has been estimated by Mr. Kalecki as £110 mn.,[6] of which £35 mn. covers the maintenance of roads. It is, therefore, necessary to allow £75 mn. for net public investment.

[1] C. Clark, *Economic Journal*, 1938, p. 444, for 1937 and A. Maizels, *Economica*, 1941, p. 158, for 1938, excluding armaments. Mr. Clark's method is based on adding the gross output of the investment goods industries, which might involve some duplication.

[2] A. Maizels, loc. cit., p. 160, estimates maintenance and depreciation as £454 mn. and £476 mn. for 1937 and 1938 respectively. It should be noted that expenditure on depreciation and maintenance is based chiefly on income-tax allowances which do not closely correspond to economic depreciation and maintenance attributable to any year. Secondly, allowance is in most cases according to original and not replacement cost and a correction, similar to that applied to stocks, is warranted.

[3] Cf. p. 244 and also *Economic Journal*, 1943, p. 270. Colin Clark quotes estimates by Dr. Tweddle in the *Economic Journal*, 1938, p. 445. These estimates refer to investment in working capital but not stocks. Moreover, they are derived as the difference between two figures, the difference being about 1 per cent. of either figure, and hence the margin of error in the estimate must be very great.

[4] C. Clark, loc. cit., for 1937 and A. Maizels, loc. cit., p. 159, for 1938. Expenditure out of personal incomes included but not expenditure entering into business costs. The cost of life insurance is included, though C. Clark, *National Income and Outlay*, p. 156, excludes it. It seems that life insurance premiums are either paid out in claims, invested, or cover the cost of insurance, and accordingly should be regarded as transfer, investment, or expenses connected with investment.

[5] Cf. Appendix B. [6] *Bulletin of the Oxford Institute of Statistics*, vol. v, No. 1, p. 6.

iii. Expenditure on investment abroad

Expenditure on investment abroad, that is, the balance of payments on income account, has been estimated by the Board of Trade as a disinvestment of £56 mn. in 1937 and £55 mn. in 1938.[1] The balance on private account consists of visible and invisible exports, and income from abroad *less* visible and invisible imports and incomes to residents abroad. The balance on government account includes payments to and from overseas government and payments abroad by the Foreign Office, Admiralty, War Office, and other departments.[2]

The balance of payments, as estimated officially, excludes transactions in gold (these being regarded as on capital account), but includes imports and exports of silver coins and bullion. If this is done, however, any imports or exports of silver (in so far as silver is not used for industrial purposes) should be added to or deducted from net investment in working capital and stocks.[3]

The official estimate is the following:

The balance of payments, 1937

(In million £'s)

Exports of British produce and manufacture	522
Net shipping income	130
Net receipts from commissions, insurance, &c.	40
Net receipts from other services	10
Net income from investment abroad	210
Imports retained for consumption	−953
Net imports of silver coin and bullion	−11
Excess of government payments abroad over receipts	−4
Balance of payments	−56

iv. The national accounts

Colin Clark attempted to reconcile his estimate of the national income and Mr. Feavearyear's estimate of the national expenditure for 1932.[4] The estimate is the following:

(In million £'s)

Net national income at factor cost	3,303	Private consumption	3,493
Balance unaccounted for	(168)	Net investment	112
		Government consumption	407
		Less Indirect taxes	−541
		Net national expenditure at	
Total	3,471	factor cost	3,471

[1] *Board of Trade Journal*, 1939, p. 284.

[2] An element of capital transactions is admittedly included in the balance on government account.

[3] A large amount of silver was in transit and has been added to imports in 1937 and to exports in 1938.

[4] Op. cit., Table 68, p. 157. The figures have been somewhat rearranged and

According to Mr. Clark the divergence is due to evasion of income-tax assessments. It seems more likely, however, that private consumption has been over estimated by not making an allowance for expenditure on consumption goods included in business costs.

the balance unaccounted for increased by £50 mn. because public services paid out of government income have been excluded in error in the lower part of the table and incomes should have excluded government income in the top part.

APPENDIX D

INCOMES ASSESSED FOR INCOME-TAX

IN this appendix the distribution of incomes over £125 assessed to income-tax is estimated.[1] For purposes of income-tax the family consists of man and wife, children under 16 (or over 16 if continuing education), and persons incapacitated by old age or infirmity and maintained out of the same income. The incomes of man and wife are assessed jointly and regarded as a single income. Income assessed to income-tax is, therefore, neither the income of a single income recipient nor that of the economic family, but a mixture of the two.[2]

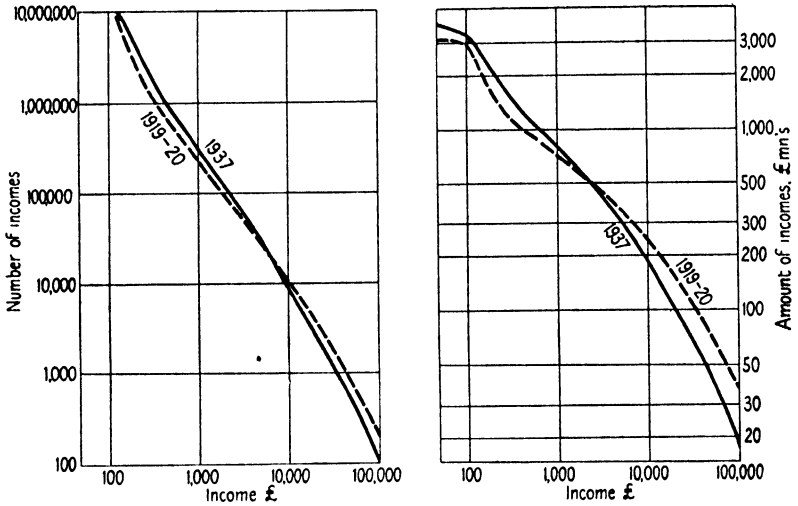


FIG. 21. Distribution of income, 1919 and 1937

Incomes accruing in 1937 were assessed under Schedules A, B, and C in 1937–8 and Schedules D and E in 1938–9, and came to £3,330 mn. Non-personal incomes assessed to income-tax were estimated as £365 mn.,[3] and hence the amount of personal incomes over £125 was £2,965 mn. The number of incomes can be put at 10,000,000.[4]

Earned income allowances amounted to £413 mn. for 1937, and it is estimated, taking into account the probable distribution of earned and un-

[1] Incomes below the exemption limit (£125) were not reviewed for income-tax purposes.

[2] For the most frequent case (that is, single earner in the family) there is no difference between the definitions.

[3] Cf. p. 61, above.

[4] The number of incomes assessed above £125 was 9,700,000 in 1937–8 and 10,100,000 in 1938–9. During the latter period £3,340 mn. were assessed.

earned incomes, that £120 mn. of income were not eligible for allowance because in excess of the maximum.[1] Earned incomes assessed to tax can, therefore, be put at £2,185 mn. and personal unearned incomes at £780 mn.

The distribution of incomes is known to follow Pareto's law according to which incomes plotted against the number (or amount) of incomes above that limit on a logarithmic scale give a straight line.[2] But a closer study would disclose that the line is, in fact, curved; its slope first rising from the horizontal, then diminishing, and finally rising again towards the vertical.[3] An analysis of published distributions of income has been made use of to derive certain general rules which were then applied to the distribution in 1937.[4]

The distribution of incomes above £2,000 can be obtained from surtax statistics. Assessments may be made at any time within six years after the end of the year to which they relate, but the bulk of assessments is made within two years and therefore it is possible to adjust the figures.[5]

The distribution of incomes assessed to tax in 1938–9 has also been published in broad groups.[6] The distribution of incomes shown in Table 13 has been obtained by fitting curves described above to this distribution and to the distribution of incomes above £2,000.[7]

Pareto curves illustrating the distribution of incomes, according to both

[1] Earned income allowance (one-fifth of income) was limited to £300.

[2] Cf. V. Pareto, *Cours D'economie Politique* (1897), vol. ii, p. 299 seq., and A. L. Bowley, *Elements of Statistics*, p. 346 seq.

[3] See Fig. 22. For any level of income the slope can be derived by three different methods: from the distribution of the number of incomes, of the amount of incomes, and the average income above incomes of certain level. (See D. H. Macgregor, 'Pareto's Law', *Economic Journal*, 1936, for two of the three methods.) The slope derived by each of the different methods is different but shows similar variations from one level of income to another.

[4] Incomes assessed for tax in 1918–19 and 1919–20 (*63rd and 64th Report of the Inland Revenue*) and the distribution of consumer incomes in the United States, 1935–6 (*Statistical Abstract of the United States*, 1939, Table 353). The latter distribution is more suitable for analytical purposes than the former because it is split into distributions referring to single persons and families, and it is more complete in the range of low incomes. The slope of the Pareto curve in the lower ranges cannot be obtained from the British distributions because the exemption limit was high enough to cut out the part of the curve with a rising slope, but it is necessary that the curve should start horizontally since the total number or amount of incomes is given. It can be assumed, therefore, that all distributions are similar in the lower ranges of income.

[5] The last publication (*82nd Inland Revenue Report*, Table 57) refers to incomes in 1936 and assessments made within two years. The figures were adjusted for complete assessments (by a method described in C. Clark, *National Income and Outlay*, p. 104) and for the higher level of incomes in 1937.

[6] *Parliamentary Debates, House of Commons*, 23 July 1942 (vol. ccclxxxii, No. 93, col. 201).

[7] The two distributions are not for the same periods. It can also be seen that the distribution given in Parliament is in round figures, and therefore the distribution in Table 13, which is estimated more exactly, is not inconsistent with it.

numbers and amounts, in 1919–20[1] and 1937 are shown in Fig. 21. It can be seen that in 1937 there were more persons with incomes above any given level of income up to about £6,000 than in 1919–20, but less with incomes above this level.

An analysis of the Paretian constant is shown in Fig. 22. *a* has been estimated by three methods, as described in the note at the end of this appendix. The curve is U-shaped but turning sharply downwards on the

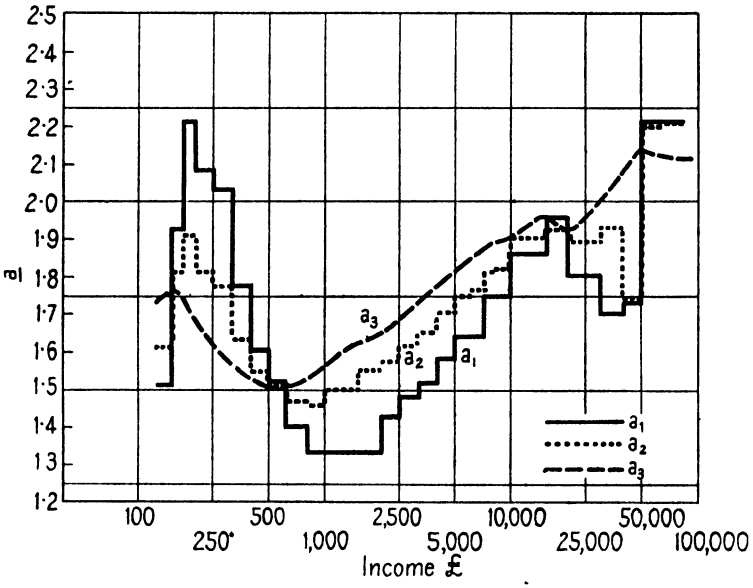


FIG. 22. Analysis of Pareto's *a*

left. Any irregularities in the range of higher incomes should be ignored since their number is rather small. It can be seen that the values of *a* at any given level of income are different as estimated by different methods.

The proportion of unearned income at different levels of income can be estimated for 1919–22. For 1919–20 the proportion of unearned income is estimated for incomes up to the super-tax limit from income-tax statistics.[2] For 1922–3 the Board of Revenue prepared similar estimates for incomes of £10,000 and over.[3]

The proportion of unearned income has also been estimated for 1937. The total of unearned incomes assessed has been calculated above and the proportions arranged so as to give a regularly rising curve. There are

[1] Assessments in 1919–20. It should be noted that these assessments relate to incomes which accrued in a number of years. At that time profits were assessed on a three-years' average basis.

[2] J. Wedgwood, *Economics of Inheritance*, Table III.

[3] *Colwyn Report*, Appendix XV.

reasons for assuming that between £1,000 and £2,000 unearned incomes were less in 1937 than in the inflationary period of 1919.[1] Also, unearned incomes at the higher end were more in 1937 than in 1922 because of the tendency of private firms to become companies.[2] The proportions of unearned income are shown in Fig. 23, earned and unearned incomes in Table 13.

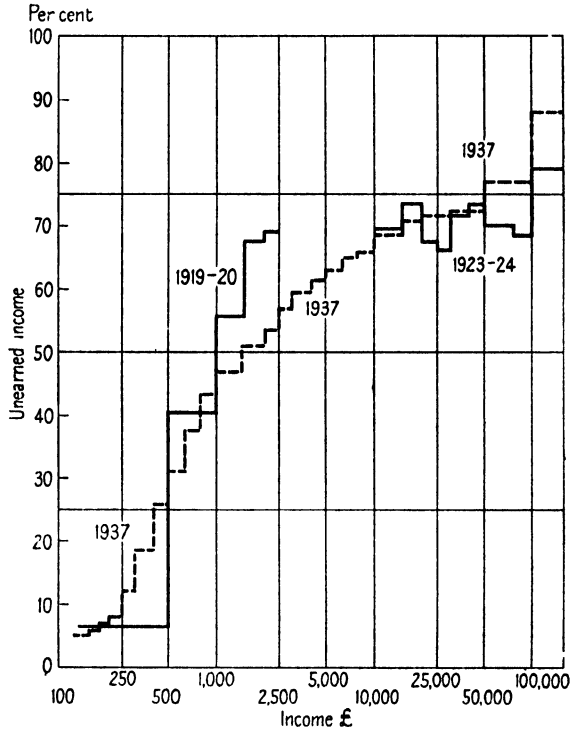


FIG. 23. Proportion of unearned income, 1919–24 and 1937

Note on the Pareto curve

Write x for income, y for the number of incomes greater than x, and z for their amount. According to Pareto's first law

$$\log y = a \log x + b, \qquad (1)$$

where a and b are constants.

[1] It is obvious from the diagram that the proportion of unearned income between £1,000 and £10,000 must already have been less in 1922 than in 1919.

[2] Profits of private individuals and firms are regarded as earned, of companies as unearned, income.

It follows from this equation that

$$\log z = (a+1)\log x + c, \tag{2}$$

where $c = b + \log \frac{a}{a+1}$.

Let us write $\bar{x}$ for the average income above x. It follows from the above equations that

$$\bar{x} = \frac{a}{a+1} x. \tag{3}$$

The Paretian constant a can be obtained according to either of the three equations as follows:

$$a_1 = \frac{d(\log y)}{d(\log x)}, \qquad a_2 = \frac{d(\log z)}{d(\log x)} - 1, \quad \text{and} \quad a_3 = \frac{\bar{x}}{x - \bar{x}},$$

from equations (1), (2), and (3), respectively.

APPENDIX E

THE DISTRIBUTION OF CAPITAL AND ALLIED PROBLEMS

i. THE DISTRIBUTION OF CAPITAL

THE national capital is partly in private, partly in public ownership; this appendix is concerned with capital in private ownership only.[1] Such capital is subject to estate duty if its net amount at death exceeds £100. *Net capital* includes the value of life policies, but excludes debts due to residents in this country, mortgages, funeral expenses, and other small items.

Reports of the Inland Revenue Commissioners contain tables, in certain years, showing the distribution of capital left by persons dying, classified according to the size of the estate and the age and sex of the owner. Such tables were published for England and Wales (since 1930) for 1936–7 and 1938–9, and for Scotland, for the first time, for 1938–9.[2] From these tables the distribution of capital of £100 and over can be obtained by the estate method.[3] When the amount of capital left at death, in a given year, in a given age and sex group, is multiplied by the reciprocal of the mortality rate of that age and sex group, the value of capital owned by persons in that group is obtained. The distribution of the number of persons according to estates can be calculated similarly.[4]

The distribution for 1937 has been estimated by averaging those for 1936 and 1938. Using general mortality rates, it was found that, for estates liable to duty, the *estate multiplier* was 32 (the *number multiplier* 47) and the amount of capital in England and Wales £15,700 mn. Using social class mortality rates this amount was £16,600 mn. in England and Wales

[1] The value of private capital is more than the value of national capital because of the national debt. Cf. J. R. Hicks, *The Social Framework*, 1942, Table V.

[2] The tables for Scotland are less complete than those for England and Wales.

[3] For a description of the method see G. W. Daniels and H. Campion, *The Distribution of the National Capital*. A distribution for England and Wales, in 1936, is estimated by H. Campion in *Public and Private Property in Great Britain*, but this is not sufficiently complete for our purposes.

[4] Some refinement is introduced by using *social class mortality rates* instead of the mortality rates for the whole population. H. Campion, op. cit., pp. 15–16, gives the following mean percentage differences between social class and general mortality rates, the former being lower:

Age	*Males*	*Females*	*Age*	*Males*	*Females*
15–25	17½	19	55–65	2½	2¾
25–35	14	16	65–75	2	2½
35–45	13½	15	75–85	1	1¼
45–55	7	8	85 and over	0	0

It can be assumed that for estate owners under 25 the mortality rate of persons aged 15–25 is relevant.

and £18,600 mn. in Great Britain. This figure has been increased by 2 per cent. to allow for Northern Ireland. In addition there were *settled estates*, not liable to duty, which can be put at £1,120 mn. and estates of less than £100 amounting to £880 mn., giving a total of £21,000 mn. for the United Kingdom. The margin of error is likely to be about 5 per cent.[1]

TABLE 71. *The distribution of capital, U.K., 1937*

Range of estates	*Excluding 'settled' estates*		*Including 'settled' estates**	
	Number	*Amount*	*Number*	*Amount*
£	Thousands	£ mn.	Thousands	£ mn.
100–300	2,390	490	2,530	520
300–500	1,325	530	1,400	560
500–1,000	1,910	1,340	2,020	1,420
1,000–5,000	1,480	3,580	1,570	3,790
5,000–10,000	293	2,190	310	2,320
10,000–25,000	195	3,110	207	3,290
25,000–50,000	63	2,230	67	2,360
50,000–100,000	27	1,860	29	1,970
100,000–250,000	11	1,680	12	1,780
250,000–1,000,000	3·4	1,420	3·5	1,500
1,000,000 and over	0·3	510	0·3	540
TOTAL . .	7,700	18,940	8,150	20,060

* 'Settled' estates were added proportionately to other estates. (It is possible that the average value of 'settled' estates was greater than that of other estates and therefore the total number of estates is somewhat overestimated.)

Table 71 shows the distribution of the numbers and amounts of estates of £100 and over, based on social class mortality rates, and smoothing the 'rate of risk' according to Fig. 24, in the United Kingdom in 1937.[2]

ii. THE RATE OF RISK

Capital falling in annually in any estate group can be compared with capital owned in the same group. The proportions of capital falling in are shown in Table 72 and also in Fig. 24. This proportion was called the *rate of risk*, that is, the average probability of an estate in a given estate group becoming liable to death duties within the period of a year, which is the reciprocal of the average mortality rate of owners of estates in the given group.[3] The table also shows the proportion of estates owned by the different sexes in each group.

[1] The amounts of settled estates and small capital are the mean estimates in H. Campion, op. cit., for 1936. The margin of error in either figure is £300 mn.

[2] The figures for Great Britain were proportionately increased to allow for Northern Ireland.

[3] See p. 113, above.

TABLE 72. *Capital falling in, Great Britain, 1936–8*

Range of estates (1)	*Capital* (2)	*Capital falling in* (3)	*Rate of risk* [(3)÷(2)] (4)	*Proportion owned by**	
				Males (5)	*Females* (6)
£	£ mn.	£ mn.	%	%	%
100–500	1,000	16	1·63	56	44
500–1,000	1,320	27	2·03	56	44
1,000–5,000	3,550	91	2·57	56	44
5,000–10,000	2,080	64	3·07	54	46
10,000–25,000	3,040	99	3·26	58	42
25,000–50,000	2,110	77	3·64	61	39
50,000–100,000	1,900	67	3·52	66	34
100,000–250,000	1,650	64	3·86	70	30
250,000 and over	1,900	76	4·02	80	20
TOTAL . .	18,530	580	(3·13)	—	—

* Figures refer to England and Wales only.

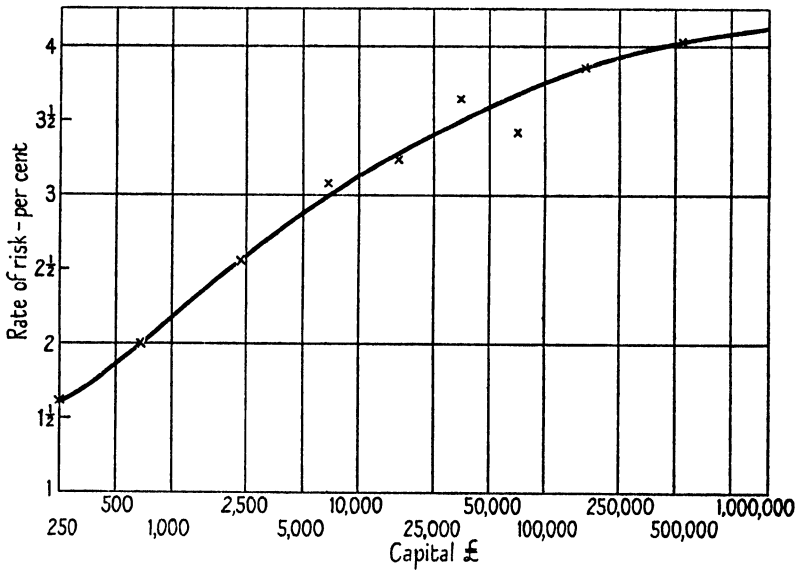


FIG. 24. The rate of risk

iii. Income from capital

The definition of income from capital is here restricted to unearned income.[1] There are four types of capital which yield no unearned income: life policies, household goods, cash, and trade assets.[2] The distribution of capital according to types of assets and estate groups is shown in Table 73. 'Personalty' comprises the first seven types: British government securities, other government securities (British municipal, Empire government and municipal, foreign government and municipal), proprietary shares of joint stock, &c., companies, cash in the house and at the bank (including deposits), money lent on mortgage or short-term, personalty which yields no unearned income (life policies, household goods, and trade assets) and other personalty. 'Realty' comprises land, house property, and other realty (ground rents, mines, &c.).

The proportions shown in Table 73 have been applied to the distribution of capital on p. 260, making an allowance for deductions, and it was possible to obtain the total gross value of different types of assets in personal ownership, excluding estates under £100, as shown in Table 74. The value of government securities and shares in existence is about 2½–3 times the value in personal ownership as estimated. This shows the extent of public ownership or rather the extent of ownership by firms (including banks and insurance companies).[3]

It is possible to calculate the average yield of the different types of assets by the following, rather lengthy, method. The yields are shown in Table 74.

British government securities. The yield of 13 long-term securities, 2 guaranteed loans, and of savings certificates was averaged, using interest issued as weights.

Other government securities consist of five types: British municipal, Empire government and municipal, and foreign government and municipal. The yield of 4 Indian loans was used for India and a representative selection of 57 government and 13 municipal securities for 19 important Empire countries or colonies. The yields of securities of different Empire countries were averaged with reference to interest income from these countries. The same method was employed for 18 foreign countries represented by 40 government and 7 municipal bonds. The weighted average yield of 31 British municipal securities was also estimated. The yield of the latter type was 3·0 per cent., of Empire bonds 3·3 per cent., and of foreign bonds 6·3 per cent. Estate-duty statistics give the value of different types of securities left, and from these an average of 3·6 per cent. has been obtained.

[1] Defined on p. 85, above.

[2] Income from trade assets in personal ownership is regarded, by the Inland Revenue, as earned income.

[3] It is possible that the value of shares in personal ownership is underestimated and that of cash and bank deposits overestimated if estates are liquidated, in order to pay death duties, before they are surveyed for statistical purposes.

TABLE 73. *Distribution of assets left at death, Great Britain, 1937 (percentages of gross capital)*

Range of estates	*British government securities*	*Other government securities*	*Shares*	*Cash*	*Money lent*	*Insurance policies, household goods, trade assets*	*Other personalty*	*Land, &c.*	*Houses, &c.*	*Other realty*	*Total*
£											
100–300	6·4	0·2	1·4	28·6	12·2	25·9	1·0	0·9	23·3	0·0	100·0
300–500	10·0	0·5	2·9	27·6	11·8	18·9	1·1	0·5	26·8	0·1	100·0
500–1,000	13·0	0·7	2·8	20·9	10·3	16·5	2·3	2·4	31·0	0·1	100·0
1,000–5,000	17·3	2·2	11·3	16·3	12·1	10·0	2·1	2·9	25·6	0·3	100·0
5,000–10,000	15·0	6·3	28·9	8·6	10·8	8·4	3·1	2·3	15·8	0·9	100·0
10,000–25,000	13·8	8·0	36·9	6·5	9·3	7·4	2·9	2·1	12·2	0·9	100·0
25,000–50,000	13·5	9·6	42·6	5·2	7·4	6·1	2·9	2·0	9·5	1·3	100·0
50,000–100,000	12·3	8·7	46·6	4·8	7·0	6·7	2·5	2·4	7·1	1·8	100·0
100,000–250,000	14·1	10·4	46·4	5·5	5·4	5·2	2·7	3·1	6·0	1·3	100·0
250,000–1,000,000	11·8	6·7	52·1	4·5	4·9	8·2	1·0	5·0	3·7	2·5	100·0
1,000,000 and over	16·2	5·3	47·0	14·4	4·8	2·6	0·4	2·9	1·7	4·9	100·0
AVERAGE . .	14·0	6·6	34·0	9·4	8·5	8·2	2·3	2·7	13·2	1·2	100·0

Notes. This table is based on Tables 14–16 in the 82nd Report of the Inland Revenue Commissioners where a detailed description of the items and also a more detailed division of the totals can be found. The percentages shown refer to *gross* capital, deductions from which amounted to 6·2 per cent. of net personalty and 14·8 per cent. of net realty.

For *Joint-stock company proprietary, &c., shares* the *Actuaries'* index of yields was taken for ordinary, preference, and debenture industrial shares and for bank and insurance shares. The first three indices were averaged using for weights amounts paid out to different types, as indicated by *The Economist*'s sample. (The respective yields were 4·4, 4·4, and 4·1 per cent.)

TABLE 74. *Distribution of capital according to types of assets owned by persons with estates of £100 or more, United Kingdom, 1937*

	Gross capital		*Yield*	
	£ mn.	*Per cent.*	*Per cent.*	*£ mn.*
British government securities	2,980	13·8	3·29	98·1
Other government securities	1,290	6·0	3·56	46·1
Shares	6,540	30·2	4·30	281·2
Cash and bank deposits	2,220	10·6	1·25	27·8
Money lent, &c.	1,910	8·8	5·00	95·5
Insurance policies, household goods, and trade assets	1,910	8·8	—	—
Other personalty	500	2·3	3·00	15·1
Personalty	*17,360*	*80·5*	(3·25)	*563·8*
Land	590	2·7	4·79	28·3
Houses	3,430	15·8	7·44	255·0
Ground rents, &c.	180	0·8	4·82	8·6
Mines, &c.	20	0·1	6·62	1·4
Other realty	50	0·2	5·00	2·6
Realty	*4,270*	*19·6*	(6·93)	*295·9*
TOTAL	21,630	100·0	(3·98)	859·7

Notes. Realty includes property in direct ownership only and not property owned through joint stock companies which is included in 'Shares'. The percentage distribution of gross capital refers to national capital and not, as in the last row of Table 73, to capital falling in during 1937.

The average yield of financial shares was 4·0 per cent. which was averaged with the average industrial yield of 4·35 per cent., using income-tax (Schedule D) statistics of income on both types as weights.

The average yield of *cash in the house and at the bank* was taken as 1¼ per cent., since part of it represents savings deposits. The yield of money lent on *bonds, bills, notes, and other securities* was taken as 5 per cent. taking into consideration that the average building society mortgage rate was 4·9 per cent. in 1937. The average yield of *other personalty* was put at 3 per cent. taking account that it includes some types yielding no income.

The estimated yields of different types of realty were less arbitrary because for most types the average number of years' purchase is published in estate duty statistics. Weighted averages were calculated for the five main types given in the table.

The above calculation of yields can be used for two different purposes. The amount of personal unearned income derived from each type of capital can be calculated and is shown in Table 74. £860 mn. was derived from estates over £100, and it can be estimated that £22 mn. was derived from small estates, giving a total of £882 mn.[1]

Using the same set of figures, the average yield of capital in each estate group can also be estimated[2] on the basis of the proportions given in Table 73. The figures shown in Table 75 were obtained and are also represented in Fig. 25.[3]

TABLE 75. *The yield of capital, 1937*

Range of estates £	*Yield* %	*Range of estates* £	*Yield* %
100–300	3·40	25,000–50,000	4·33
300–500	3·85	50,000–100,000	4·25
500–1,000	4·32	100,000–250,000	4·21
1,000–5,000	4·50	250,000–1,000,000	4·14
5,000–10,000	4·40	1,000,000 and over	3·95
10,000–25,000	4·35		

The rate of yield is obviously low for smaller estates because of the necessary higher proportion of cash and other non-remunerative assets. The shape of the curve is influenced chiefly by the distribution of shares and house property. Shares, as a proportion of capital, gradually increase, diminishing in the highest group only, while the proportion for house property reaches an early maximum and then falls off rapidly.[4, 5]

The figures can be also used as rates of capitalization applicable to an unearned income of the size of the central value of the estate group multiplied by the appropriate yield. Rates of capitalization are represented in Fig. 25.

iv. THE RELATION OF THE DISTRIBUTIONS OF INCOME AND CAPITAL

Unearned personal incomes assessed to income-tax were estimated at £780 mn.,[6] investment incomes below the exemption limit £60 mn.,[7] and interest on saving certificates £18 mn.,[8] giving a total of £858 mn. This is £24 mn. short of the yield of capital, £882 mn.,[9] but it must be remembered that of investment income £35 mn. was due to residents abroad[10] which

[1] 2½ per cent. of the amount of small capital. This figure is justified by extrapolating the curve of yield in Fig. 25.

[2] Not 'yield' in the economic sense, but rather the ratio of personal unearned income to net capital, both being defined statutorily.

[3] The yields given in Table 74 referred to gross capital. These were sufficiently increased to be related to net capital.

[4] See Fig. 26.

[5] As the relative yields of houses and shares fluctuate over the trade cycle, the shape of the curve of yield is likely to change.

[6] See p. 64, above. [7] See p. 241, above. [8] See p. 241, above.

[9] See p. 264, above. [10] See p. 243, above.

was not included in the £858 mn. It can be assumed that this £35 mn. has been derived from capital about two-thirds of which was subject to estate duty (considering the possibility of evasion), which assumption would account for the difference.

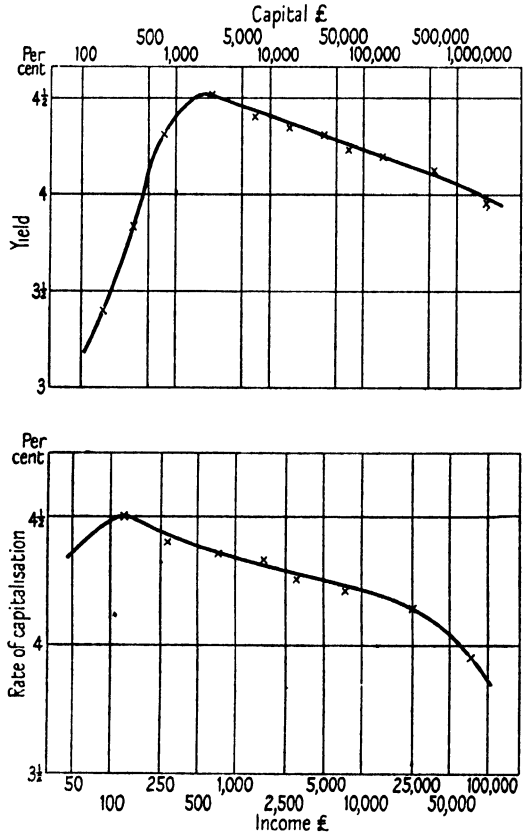


FIG. 25. The yield of capital

Hence £550 mn. capital was owned by residents abroad, and was subject to estate duty, and £20,390 mn. by British residents. Excluding small capital and settled estates, of the latter amount £18,390 mn. was liable to death duties.[1]

An attempt will now be made to distribute personal capital not into estate groups but income groups, to obtain the amount of capital possessed by persons falling within certain ranges of income.

[1] That is, including capital owned by residents abroad, £18,940 mn. was subject to death duties.

The distribution of unearned personal incomes can be obtained in two different ways. It can be obtained in relation to income categories, as shown in Table 13, or in relation to estate groups, as the product of the contents of estate groups shown in Table 71 and the appropriate rates of yield shown in Table 75. There are small differences in the definitions of

TABLE 76. *The relation of distributions of income and capital, 1937*

Range of incomes (1)	*Investment income* (2)	*Range of estates* (3)	*Rate of yield* (4)	*Capital* (5)	*Ratio of capital to income* (6)
£	£ mn.	£	%	£ mn.	
Under £125	61	Under £510	3·10	1,970	—
125–150	17·4	510–650	4·20	414·3	1·3
150–175	21·2	650–820	4·345	487·8	1·6
175–200	20·2	820–1,000	4·445	454·4	1·7
200–250	29·7	1,000–1,400	4·52	657·0	1·9
250–300	28·6	1,400–1,800	4·545	629·2	2·8
300–400	49·1	1,800–3,000	4·515	1,087·5	4·4
400–500	38·6	3,000–4,300	4·47	863·8	5·9
500–600	31 9	4,300–5,500	4·43	720·1	7·2
600–800	49·1	5,500–7,800	4·41	1,113·4	8·6
800–1,000	38·2	7,800–10,000	4·39	870·2	10·0
1,000–1,500	68·8	10,000–16,000	4·375	1,572 5	10·9
1,500–2,000	48·8	16,000–22,000	4·35	1,121·9	11·8
2,000–2,500	36·0	22,000–28,000	4·335	829·2	12·4
2,500–3,000	29·0	28,000–35,000	4·32	671·3	13·2
3,000–4,000	44·8	35,000–47,000	4·30	1,041·9	13·9
4,000–5,000	32·0	47,000–60,000	4·27	749·4	14·4
5,000–6,000	25·1	60,000–75,000	4·255	589·9	14·7
6,000–8,000	35·0	75,000–100,000	4·24	825·4	15·3
8,000–10,000	23·5	100,000–130,000	4 225	556·3	15·5
10,000–15,000	37·7	130,000–210,000	4·205	896·6	16·3
15,000–20,000	20·5	210,000–300,000	4·19	489·3	16·9
20,000–30,000	20·7	300,000–460,000	4·16	497·7	17·2
30,000–50,000	17·2	460,000–710,000	4·12	417·6	17·4
50,000–100,000	18·5	710,000–1,200,000	4·06	455·7	19·0
100,000 and over	16·7	1,200,000 and over	3·94	423·4	22·3
TOTAL . .	859		(4·2)	20,406	(5·1)

the two distributions which must be eliminated. The first distribution excludes interest issued or accrued on savings certificates (exempt from income tax), for which a correction has been made.[1] The distribution of unearned incomes, inclusive of interest on savings certificates, is shown in Table 76, col. (2). The second distribution of unearned incomes was modified to exclude income from capital owned abroad. £24 mn. has been proportionately deducted from the yield of estates £100–£100,000.

[1] There is no accurate basis for the allocation of such interest. £18 mn. has been distributed arbitrarily, taking account of other unearned incomes and the maximum limit for holdings of savings certificates.

Let us write C for the capital corresponding to a given income, I. C is so defined that the amount of unearned incomes derived from estates greater than C is equal to the amount of unearned incomes contained in incomes greater than I. The capital grades corresponding to given income

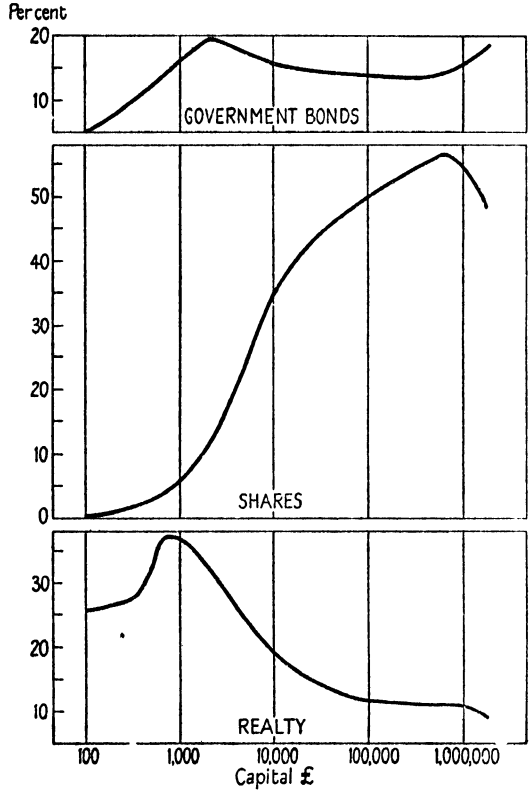


FIG. 26. Proportions of government bonds, &c., in net capital

grades are shown in col. (3), Table 76.[1] For the representative estate in each capital group the appropriate rate of capitalization has been obtained by interpolation from Fig. 25 and is shown in col. (4). The amount of capital owned by persons in any income group, shown in col. (5), is obtained by dividing figures in col. (2) by those in col. (4). The ratio of capital to income is shown in col. (6).[2]

[1] Values of C for given values of I have been obtained graphically.

[2] While the error in finding the capital grades can be great, the error in the amount of capital in a given income grade will probably be small. To every income group there corresponds, in fact, a much wider range of estates than suggested, but it seems reasonable to assume that on the average greater estate corresponds to greater income.

v. The distribution of different types of assets

On the basis of the above estimates it is also possible to find the amount of any type of assets possessed in a given income group. The proportions of shares, government bonds, and real property to gross capital were shown

TABLE 77. *Shares, government bonds, and real property, 1937*

Range of incomes (1)	*Proportions of net capital*			*Gross value of*		
	Shares (2)	*Government bonds* (3)	*Real property* (4)	*Shares* (5)	*Government bonds* (6)	*Real property* (7)
£	%	%	%	£ mn.	£ mn.	£ mn.
Under £125	1·5	5·7	26	30	112·5	512·2
125–150	3·1	13·0	36·0	12·8	53·9	149·1
150–175	3·7	14·3	37·2	18·1	69·7	181·5
175–200	4·8	15·8	36·6	21·8	71·8	166·3
200–250	6·5	17·6	35·2	42·7	115·6	231·3
250–300	8·4	19·1	33·6	53·0	120·2	211·4
300–400	11·9	19·6	31·0	129·4	213·2	337·1
400–500	18·0	19·2	27·4	155·5	165·8	236·7
500–600	24·3	18·0	24·7	175·0	129·6	177·9
600–800	30·2	16·6	21·1	336·3	184·8	234·9
800–1,000	34·5	15·6	19·0	300·2	135·8	165·3
1,000–1,500	38·2	15·0	17·1	600·7	235·9	268·9
1,500–2,000	41·3	14·7	15·5	463·3	164·9	173·9
2,000–2,500	43·4	14·6	14·6	359·9	121·1	121·1
2,500–3,000	43·9	14·5	14·0	294·7	97·3	94·0
3,000–4,000	46·1	14·4	13·3	480·3	150·0	138·6
4,000–5,000	47·4	14·3	12·6	355·2	107·2	94·4
5,000–6,000	48·4	14·2	12·1	285·5	83·8	71·4
6,000–8,000	49·2	14·1	11·8	406·2	116·4	97·4
8,000–10,000	50·2	14·0	11·6	279·3	77·9	64·5
10,000–15,000	52·6	13·8	11·4	471·7	123·7	102·2
15,000–20,000	53·3	13·7	11·4	260·8	67·0	55·8
20,000–30,000	55·0	13·5	11·4	273·8	67·2	56·7
30,000–50,000	56·9	13·6	11·4	237·5	56·8	47·6
50,000–100,000	56·2	14·6	11·3	256·1	66·6	51·5
100,000 and over	50·0	17·3	10·2	211·7	73·3	43·2
TOTAL . .	32·0	14·6	20·0	6,512	2,982	4,085

in Table 73, above. The same proportions to net capital are represented in Fig. 26. By interpolation the proportions of shares, government bonds, and real property to net capital have been found for each capital grade in Table 76; hence it was possible to obtain the value of shares, government bonds, and real property in each income group. The results are shown in Table 77 and summarized in Table 78. The relative percentage

TABLE 78. *The distribution of investment income, capital, shares, and other assets*

Range of incomes	*Investment income*	*Net capital*	*Shares*	*Government bonds*	*Real property*	*Proportion to net capital*		
						Shares	*Government bonds*	*Real property*
£	£ mn.	£ mn.	£ mn.	£ mn.	£ mn.	%	%	%
Under £250	149	3,980	130	420	1,240	3·3	10·5	31·2
250–500	116	2,580	340	500	790	13·2	19·4	30·7
500–1,000	119	2,700	810	450	580	30·0	16·6	21·5
1,000–2,000	118	2,690	1,060	400	440	39·4	14·9	16·3
2,000–10,000	225	5,260	2,460	750	680	46·8	14·3	12·9
10,000 and over	131	3,180	1,710	450	360	53·8	14·1	11·3
TOTAL . .	858	20,390	6,510	2,970	4,090	(31·9)	(14·6)	(20·1)

distribution of investment income, capital, shares, government bonds, and real property is shown in Table 79.

TABLE 79. *Relative percentage distributions*

Range of incomes	*Investment income*	*Capital*	*Shares*	*Government bonds*	*Real property*
£	%	%	%	%	%
Under £250	17·2	19·5	2·0	14·1	30·3
250–500	13·6	12·7	5·2	16·8	19·3
500–1,000	13·9	13·2	12·4	15·2	14·2
1,000–2,000	13·7	13·2	16·3	13·5	10·8
2,000–10,000	26·3	25·8	37·8	25·3	16·6
10,000 and over	15·3	15·6	26·3	15·2	8·8
TOTAL .	100·0	100·0	100·0	100·0	100·0

APPENDIX F

THE INSURED POPULATION AND INCOMES UNDER £250

THE statistics of income and capital discussed in Appendixes D and E throw sufficient light on the higher end of the distributions but have to be supplemented by a study of low incomes. This study will be based on an analysis of the insured population and its earnings.

i. THE INSURABLE POPULATION

In 1937 three great contributory social insurance schemes were in existence (unemployment insurance, health insurance, and contributory pensions for old age, widows, and orphans), under which, broadly speaking, all gainfully employed persons, with the exception of non-manual workers earning more than £250 annually, were compulsorily insured. With certain exceptions all such persons aged 16–64 were included in health insurance.[1] Those insured for pensions differ so little from those included in health insurance that very little attention need be paid to them. But a great number of persons included in health insurance are not included in unemployment insurance.[2]

It is necessary to reconcile the number of insurable persons (that is, employed persons, other than non-manual workers earning more than £250 annually), the number compulsorily insured for health, and the number insured for unemployment. To bring about uniformity all data refer to persons aged 16–64 and to Great Britain only.

The main groups of insurable persons are manual wage-earners, shop-assistants, and salaried employees earning under £250. There were in 1937 11,330,000 male and 4,265,000 female wage-earners of all ages in Great Britain.[3] The total number of shop-assistants was 1,054,000, of whom 551,000 were males and 503,000 females.[4] The proportion of shop-assistants earning more than £250 is available for those over and under 21, for both sexes.[5] On the average 4·75 per cent. of the males and 0·33 per cent. of the females received more than £250, which leaves 525,000 male and 501,000 female shop-assistants insurable.

The number of salaried persons, excluding statutorily exempted teachers and civil servants (included in a separate category), was 1,718,000 males and 971,000 females.[6] Of this number 55·4 and 4·0 per cent., respectively,

[1] The age limit was lowered to 14 in 1938.

[2] Practically all persons insured for unemployment were insured for health and pensions also, with the exception (up to 1938) of boys and girls aged 14–16.

[3] Bowley, *Studies in the National Income*, p. 56. 2·7 and 2·5 per cent. respectively has been deducted for Northern Ireland.

[4] Ibid., p. 77.

[5] Ibid., p. 91.

[6] Data for 1931, ibid., p. 86. The increase between 1931 and 1937 can be estimated as 9 and 10 per cent. respectively. (Cf. ibid., p. 87.)

were earning more than £250,[1] leaving 766,000 males and 932,000 females insurable. Salaried civil servants numbered 146,000 males and 85,000 females.[2] Of these 30 per cent. and 8 per cent. respectively received more than £250,[3] which leaves 102,000 males and 78,000 females insurable. The figures are summarized in Table 80.

TABLE 80. *The insurable population, Great Britain, 1937 (all ages)*

(In thousands)

Wage-earners	11,330	4,265
Shop-assistants (with incomes under £250)	525	501
Civil servants (with incomes under £250)	102	78
Other salaried persons (with incomes under £250)	766	932
TOTAL	12,723	5,776

The total number of insurable persons, excluding teachers, was 18,500,000. Salaried persons (and shop-assistants) with more than £250 numbered 1,070,000[4] and teachers 240,000.[5] The total number of employees was, therefore, 19,810,000.

In order to compare these figures with those for health insurance, persons under 16 or over 65 should be excluded; and it is essential that the same number should be excluded as is implied in the above estimates. It can be estimated, with reference to Professor Bowley's assumptions,[6] that 470,000 boys and 370,000 girls aged 14–15, and 550,000 men and 110,000 women over 65 have been included in the above figures. The numbers of employees between the ages of 16 and 64, excluding teachers and non-manual workers earning more than £250, were therefore 11,700,000 males and 5,300,000 females.

The comparable figures of health insurance statistics (that is, the numbers of 'employed contributors' and H.M. Forces, aged 16–64, interpolated for mid-1937) were 11,430,000 males and 5,730,000 females.[7]

A number of persons were exempted or excepted from health insurance by certificates of the Minister of Health.[8] 380,000 persons in the employment of the Crown, local government, and other public authorities or statutory companies were excepted and 12,000 were exempt. It can be estimated that these figures include 292,000 men and 88,000 women

[1] Derived from figures, *Studies in the National Income*, pp. 88–9.

[2] 133,000 males and 77,000 females in 1931. See ibid., p. 86.

[3] Ibid., p. 90.

[4] Of these 1,022,000 were men and 48,000 women.

[5] Of these 70,000 were men and 170,000 women.

[6] Op. cit., p. 56.

[7] Excluding voluntary contributors, persons over 65 in insurable employment, and married women having the right to benefit though no longer occupied. (Women retain their rights for one year after marriage.)

[8] Exemption is usually granted to individuals, exception to groups, such as railway officials. Those excepted are usually excepted from unemployment insurance also.

excepted[1] and 8,000 men and 4,000 women exempted, a total of 300,000 men and 92,000 women.

The estimated numbers of persons aged 16–64, insured for unemployment, were 10,386,000 males and 3,677,000 females. The number of persons excepted by the Minister of Labour is published, classified according to industrial status.[2] The estimated number in 1937 was 497,000, of whom 9,000 were employed by government departments, 88,000 by local authorities, 323,000 by the railways, and 77,000 by public utilities and other statutory bodies. These persons are all included in health insurance except local government employees and railway officials.

In order to classify the number excepted from health insurance according to industry and the number excepted from unemployment insurance according to sex, one must go back to 1931, the census year. For that year it is possible to obtain the number of government employees. Deducting those over 65, and those insured for unemployment, or excepted or in agricultural and domestic employment, and making an allowance for non-manual employees earning more than £250, 115,000 men and 50,000 women remained to be accounted for.

Making a similar calculation for local government employees, excluding teachers and policemen, 61,000 men and 11,000 women remained to be accounted for.

Railway employees can be similarly treated and eventually classified into clerical and manual occupations.

The numbers of central and local government employees, policemen, and railway officials unaccounted for comprise those exempted from health insurance. Central government employees and policemen were statutorily exempted from unemployment insurance, the rest were excepted by the Minister of Labour. Insured for health but excepted from unemployment insurance were manual railway employees and certain government employees and employees of public utilities. As the latter group comprises mainly manual workers the number of females is not likely to be over 10,000.

The results of this analysis have been applied to the 1937 figures and the estimates on the next page were obtained.

In addition 14,000 persons, of whom 4,000 could have been women, received individual exemption from unemployment insurance but not from health insurance. The total numbers excepted or exempt from unemployment insurance (but not health insurance) were 357,000 males and 22,000 females, a total of 379,000.

Certain types of occupations are statutorily exempt from unemployment insurance, among which civil servants and teachers have been mentioned. By 1937 agricultural occupations were insured under a separate scheme,

[1] At the end of 1935 (the last date for which the division according to sex was given) 287,000 males and 85,000 females were excepted. (Total 372,000.)

[2] Last time for March 1936. These figures have been extrapolated for 1937.

but employment of domestic servants, if not for purposes of gain, was exempt. The employment of domestic servants can be divided into three classes: as private employment; employment by the government (central and local), institutions, charities, or religious bodies; and employment in the catering trade, hotels, or lodging-houses. In 1937 only the third category was insured for unemployment.[1]

(In thousands)

	Men	*Women*	*All*
Excepted from health insurance by the Minister of Health and exempt or excepted from unemployment insurance:			
Central government	120	66	186
Local government	75	13	88
Policemen	62	—	62
Railway officials	35	9	44
TOTAL	292	88	380
Excepted from unemployment insurance by the Minister of Labour but insured for health:			
Central government	6	3	9
Mental hospitals	6	—	6
Public utilities	61	10	71
Railway workers	274	5	279
TOTAL	347	18	365

The number of private domestic servants in 1937 (excluding agricultural occupations, which were insured) aged 16–64 can be estimated from the last census, assuming that the rate of increase between 1921 and 1931 continued. The estimated numbers are 154,000 men and 1,338,000 women. Domestic servants in the second category numbered 86,000 men and 122,000 women.[2] This gives a total of 240,000 men and 1,460,000 women in domestic employment exempt from unemployment insurance.

Certain other occupations were also statutorily exempt from unemployment but not from health insurance. Out-workers, share-fishermen, and sub-contractors numbered about 140,000, of whom about 20,000 could have been women.[3] Female nurses, aged 16–64, numbered 131,000 in 1937, assuming that the rate of increase in their number between 1921 and 1931 continued. A total of 120,000 men and 151,000 women were exempt, apart from domestic servants. Members of H.M. Forces were also exempt

[1] In 1938 the second category was also brought into the insurance scheme.

[2] The numbers were estimated for 1938 when these classes were insured for unemployment (*Ministry of Labour Gazette*, 1938, p. 425). The number of chauffeurs in private service has already been included in the first category.

[3] The *Final Report on Unemployment Insurance* (1932), p. 57, gives the following estimate:

Out-workers	100,000
Share-fishermen	12,000
Sub-contractors	20,000
TOTAL	132,000

with special provisions made for discharged men. Their number is given in health insurance statistics.

In Table 81, total A should agree with the number insured for health and total B with the number of insurable persons. For males there is an

TABLE 81. *The insured population, 16–64, Great Britain, 1937*

(In thousands)

	Males	*Females*
Insured for unemployment	10,386	3,677
Not insured for unemployment but insured for health:		
Excepted or exempted by the Minister of Labour	357	22
H.M. Forces	324	—
Domestic servants	240	1,460
Other exempted occupations	120	151
TOTAL A	11,430	5,310
Insured for health	11,430	5,730
Excepted or exempted by the Minister of Health*	300	92
TOTAL B	11,730	5,820
Insurable persons	11,700	5,300 (5,400)

* Of these 29,000 men and 18,000 women were insured for all pensions, 208,000 men and 76,000 for pensions except for old age.

agreement between the first two numbers. The difference of 30,000 between the other two numbers is explained by the fact that total B includes some unoccupied persons and the number of insurable persons includes a somewhat smaller number of persons employed by relatives or in casual employment who are not liable to be insured.

The totals for females are more difficult to reconcile. Adding the number excepted from health insurance to total A gives 5,400,000. This figure is 100,000 in excess of the number of insurable persons, and it is reasonable to assume that the latter figure has been underestimated by this amount.[1]

The difference between total B and the number of insurable persons as corrected is 420,000, which is significant.[2] This figure can be explained in the light of figures in the census of Scotland, 1931, where questions were asked as to whether individuals were insured or not. Of 552,000 females, aged 16–64, who stated that they were insured, 39,000 were unoccupied. The number of insured persons was, however, 627,000, and therefore a

[1] This figure has been based on Bowley's estimates which were obtained by extrapolation from the census figures. The possibility of an inaccuracy of such small magnitude is admitted in op. cit., p. 56 n.

[2] But it 'is probably no greater than the ambiguity which enters into the calculation as a result of the uncertainty of the boundary line between "unemployed" and "unoccupied", or the inclusion within the totals of Health Insurance of a number of workers who will not be insured under the more precise conditions laid down for the Unemployment Insurance Scheme' (C. Clark, op. cit., pp. 286–7).

maximum of 114,000 could have been unoccupied. Unoccupied women included 18,000 married women who retained their insurance rights in a special category. The number of unoccupied women in Scotland who should not have been insured must therefore be between 21,000 and 96,000.

If the same proportion is applied to Great Britain a discrepancy of 200,000–900,000 would arise. A discrepancy of 420,000 is therefore explained by the fact that certain women stay on the register for some time after they cease to be insured because they do not notify the authorities of their marriage, or for other similar reasons, and certain other women unoccupied or working on their own account are insured who should not be insured under the conditions of the scheme.[1]

ii. The occupations of insurable persons, aged 16–64

The occupational distribution of persons of all ages is shown in Table 80, from which similar figures for persons aged 16–64 can be derived by finding the occupational distribution of boys and girls, aged 14–15, and of persons aged 65 and over.

The proportions of juveniles and elderly persons in various occupations were taken from the census of 1931 and applied to the totals deducted on p. 273, above. Finally, the following figures were obtained:

TABLE 82. *The occupations of insurable persons, aged 16–64*

(In thousands)

	Men	*Women*	*All*
Wage-earners	10,430	3,920	14,350
Shop-assistants	465	480	945
Civil servants	100	80	180
Other salaried persons	705	920	1,625
TOTAL	11,700	5,400	17,100

The categories in Table 81 will now be divided into manual and non-manual occupations or, alternatively, the manual and non-manual occupations in Table 82 will be divided into the categories of Table 81.

Of persons excepted or exempted from unemployment insurance by the certificate of the Minister of Labour, but insured for health, only railway employees are manual workers. Of occupations exempt from unemployment insurance only nursing is non-manual, the rest are manual.

Of persons excepted or exempted from health insurance all policemen and railway officials are classified as non-manual. With reference to the census it can be estimated that 20,000 men employed by the central and 15,000 by the local government were excepted and in manual occupations.

The division of persons insured for unemployment is obtained as a residue. All shop-assistants in Table 82 are included in this category.

[1] About 120,000 of these women could have been recently married or sick for a long time. Cf. Sir A. Watson, *Journal of the Royal Statistical Society*, 1927, Part III.

TABLE 83. *The insured population and its occupation, 16–64 (Great Britain, 1937)*

(In thousands)

	Men			*Women*			*All*		
	Manual	*Non-manual*	*All*	*Manual*	*Non-manual*	*All*	*Manual*	*Non-manual*	*All*
Insured for unemployment	9,437	922	10,359*	2,435	1,240	3,675	11,872	2,162	14,034
Not insured for unemployment but insured for health:									
Excepted or exempt	274	83	357	5	17	22	279	100	379
H.M. Forces	324	—	324	—	—	—	324	—	324
Domestic servants	240	—	240	1,460	—	1,460	1,700	—	1,700
Other exempt occupations	120	—	120	20	131	151	140	131	271
Excepted or exempted from health insurance:	35	265	300	—	92	92	35	357	392
TOTAL	10,430	1,270	11,700	3,920	1,480	5,400	14,350	2,750	17,100

* Reduced by 27,000 to allow for the excess of unoccupied persons over the number employed by relatives.

The age distribution of persons insured for unemployment in July 1937 has been published for the General and Special, and the Agricultural

TABLE 84. *Persons insured for unemployment, Great Britain, 1937*

(In thousands)

Age	*14–15*	*16–17*	*18–20*	*21–64*	*Total*
Males					
Agriculture	29	42	43	540	654
Industrial wage-earners	429	539	556	7,717	9,241
Salaried persons	22	73	96	288	479
Shop-assistants	43	71	66	328	508
TOTAL	523	725	761	8,873	10,882
Females					
Agriculture	3	5	4	29	41
Industrial wage-earners	311	375	349	1,673	2,708
Salaried persons	39	100	130	530	799
Shop-assistants	54	81	78	321	534
TOTAL	407	561	561	2,553	4,082

Schemes.[1] In addition to persons enumerated above, boys and girls aged 14 and 15 were also included.[2] From the census of 1931 the occupational distribution of juveniles has been calculated[3] and eventually the distribution in Table 84 obtained.

iii. UNEMPLOYMENT

In 1937, on the average, 1,164,000 men and 279,000 women were unemployed. The age distribution of these persons can be estimated on the basis of sample figures published for May 1937.[4] The age distribution of unemployed in agriculture is published separately. The occupational distribution of unemployment among boys and girls aged 14–15 can be easily ascertained from industrial figures, taking *Distributive trades* to represent shop-assistants and *Commerce, &c.*, to represent salaried occupations.

Unfortunately there are no statistics relating to unemployment in

[1] *Ministry of Labour Gazette*, 1937, p. 420.

[2] The number insured is not identical with the number deducted on p. 273. The latter figure is meant to include non-manual occupations and is based on the percentage occupied of the total population in 1931.

[3] Except the number in agriculture, which has been published for 1937. Non-insured occupations have been omitted from the estimate.

[4] The percentages of unemployed persons in the General and Special Schemes were the following:

Age	*Male*	*Female*
16–17	3·3	3·4
18–20	5·7	4·9
21–64	12·8	8·7
All	11·6	7·3

occupational groups[1] and figures published for industrial groups had to be used.

The majority of insured persons in *Commerce, Banking, Insurance and Finance*, and in *Professional Services* are salaried; about half of those in the *Distributive Trades* are shop-assistants.[2] If these industries are taken as representative for salaried persons and shop-assistants, the following percentages of unemployment are obtained (for persons aged 16–64):[3]

	Men	*Women*
Salaried persons . .	5·2	1·9
Shop-assistants . .	10·3	6·1

Unemployment percentages for the different age groups of salaried persons and shop-assistants were taken round the above averages in proportion to similar percentages for the General Scheme as a whole. The number of unemployed wage-earners was obtained as a residue. The distribution of insured persons in unemployment is shown in Table 85, that of insured persons in employment in Table 86.

TABLE 85. *Insured persons in unemployment, Great Britain, 1937*

(In thousands)

Age	*14–15*	*16–17*	*18–20*	*21–64*	*Total*
Males					
Agriculture. . .	1	1	2	17	21
Wage-earners . .	6	19	34	1,011	1,070
Salaried persons . .	—	1	3	20	24
Shop-assistants . .	1	2	4	42	49
TOTAL . . .	8	23	43	1,090	1,164
Females					
Agriculture. . .	—	1	1	3	5
Wage-earners . .	7	16	22	184	229
Salaried persons . .	1	1	2	11	15
Shop-assistants . .	1	2	3	24	30
TOTAL . . .	9	20	28	222	279

It can be assumed that all persons excepted or exempted by the Ministers of Labour or Health and members of H.M. Forces are employed.

Unemployment among domestic servants can be estimated on the basis of the census of 1931, but taking account of the general improvement in economic conditions in 1937, as 6 per cent. for males and 4½ per cent. for females. On a similar basis unemployment among nurses can be put at

[1] C. Clark, op. cit., Table 19, estimates unemployment in occupational classes on the basis of the census of 1931, but these figures were not valid for 1937.

[2] About 90 per cent. of all shop-assistants are in this industry.

[3] In a proper comparison of occupational unemployment the influence of certain factors, such as age distribution, ought to be eliminated.

TABLE 86. *Insured persons in employment (Great Britain, 1937)*

(In thousands)

Age	*14–15*	*16–17*	*18–20*	*21–64*	*All*
Males					
Agriculture	28	41	41	523	633
Industrial wage-earners	423	520	522	6,706	8,171
Salaried persons	22	72	93	268	455
Shop-assistants	42	69	62	286	459
TOTAL	515	702	718	7,783	9,718
Females					
Agriculture	3	4	3	26	36
Industrial wage-earners	304	359	327	1,489	2,479
Salaried persons	38	99	128	519	784
Shop-assistants	53	79	75	297	504
TOTAL	398	541	533	2,331	3,803

TABLE 87. *Employment and unemployment (1937)*

(In thousands)

	Unemployed			*Employed*		
	Men	*Women*	*All*	*Men*	*Women*	*All*
Insured for unemployment	1,156	270	1,426	9,203	3,405	12,608
Domestic servants	15	66	81	225	1,394	1,619
Female nurses	—	4	4	—	127	127
Other exempt occupations	14	1	15	106	19	125
Excepted or exempted from unemployment insurance	—	—	—	357	22	379
Excepted or exempted from health insurance	—	—	—	300	92	392
H.M. Forces	—	—	—	324	—	324
TOTAL	1,185	341	1,526	10,515	5,059	15,574

3 per cent. For other exempt occupations the general rate of unemployment was assumed to hold. Table 87 summarizes the number of insurable persons, aged 16–64, employed and unemployed.

iv. THE NATIONAL WAGE-BILL

The numbers of manual wage-earners, aged 16–64, in employment as shown in Table 88 have been estimated above. The number of boys and girls, aged 14 and 15, are those insured for unemployment, and domestic servants, with an allowance for evasion of insurance. The numbers of persons, aged 65 and over, are those in insurable employment (as returned by pensions statistics), with some allowance for persons in non-insured employment and evasion.

TABLE 88. *The national wage-bill (Great Britain, 1937)*

	Males			*Females*			
	Number employed	*Average weekly wage*	*Annual earnings*	*Number employed*	*Average weekly wage*	*Annual earnings*	*Total annual earnings*
	Thousands	*s.*	£ mn.	Thousands	*s.*	£ mn.	£ mn.
Boys and girls, 14–15	481	13 6	15·7	387	12·3	11 4	27·1
Insured for unemployment:							
Juveniles, 16–17	561	19·9	32·3	363	18·4	16·0	48·3
„ 18–20	563	33 0	44·8	330	27·3	21·7	66·5
Adults 21–64							
Agriculture	523	37 5	47·1	26	27 5	1·7	48·8
Industry	6,706	67 5	1,080	1,489	33 0	119	1,199
Not insured:							
Domestic servants	215	37·0	19·1	1,394	23·0	80·5	99·6
H.M. Forces	324	47 0	40 0	—	—	—	40·0
Other exempt occupations	106	66 0	65·7	19	25 0	1·4	67·1
Excepted or exempted	309			5			
Persons 65 and over	300	51 3	36 9	70	11 6	1 9	38 8
TOTAL	10,088	(—)	1,382	4,083	(—)	254	1,635

The average weekly wages of juveniles, aged 14–20, are based on Bowley's estimate.[1] The average wages of adults in industry are based on the Ministry of Labour inquiries.[2] The average wages of adults in agriculture are similarly based on a Ministry of Labour inquiry.[3] Wages in domestic service have been estimated for 1931 by Bowley,[4] and it can be assumed that there has been little change up to 1937. The average amount of pay and allowances in the Forces including the cost of payment in kind was 47*s.* per week.

Persons in other occupations are mainly railwaymen (274,000) with an average wage of 64·5*s.*, public employees earning about 70*s.*,[5] share-fishermen earning about £5,[6] sub-contractors and outworkers earning about £3–4 per week.

From the little information available on wages of persons over 65 it can

[1] Op. cit., p. 67.

[2] The average weekly wages of men in all industries, except agriculture, railways, and coal-mining, were 64*s.* 6*d.* in 1935 and 69*s.* 0*d.* in 1938. The figure for 1937 would be 67·3*s.* The average wage on railways (66·1*s.*), in railway shops (70·9*s.*), and in coal-mining (62·2*s.*, including juveniles) raises this figure to 67·5*s.*

The average weekly wage of women over 18 in 1935 was 31*s.* 3*d.*, in 1938 32*s.* 6*d.* This would be 32·0*s.* for 1937 or, excluding women aged 18–20, 33·0*s.*

[3] *Ministry of Labour Gazette*, 1938, p. 425. The weighted average earnings in different occupations (36·7*s.*) has been somewhat increased because the sample excludes better-paid occupations. The wages of women have been derived from estimates of Bowley, op. cit., p. 70.

[4] Op. cit., p. 70. 36*s.* for men and 22*s.* for women.

[5] Earnings and hours inquiry, *Ministry of Labour Gazette*, March 1941.

[6] *Final Report on Unemployment Insurance*, 1932, § 382.

be seen that the average wage of elderly men was 70, of women 35 per cent. of the adult wages.[1, 2]

Annual earnings were computed by taking the year as consisting of 48 working weeks on the average, and on this basis the national wage-bill came to £1,635 mn.[3]

v. The distribution of earnings

The distributions of weekly earnings of wage-earners have been obtained from various sources. The wages of juveniles can be found in official publications,[4] the wage distribution of adults in industry in various social surveys.[5] The range of wages in agriculture can also be obtained, though not their actual distribution.[6] The wage distribution of domestic servants not living in is available for London.[7] The distribution for excepted persons, mostly railwaymen, can be obtained from railway statistics.

These distributions were adjusted to bring their average to the levels shown in Table 88. Assuming that the year consists of 48 working weeks the following percentage distributions were obtained for industrial wage-earners:

Annual earnings	*Age 14–15*	*Age 16–17*	*Age 18–20*	*Age 21–64*
£	%	%	%	%
Males				
90 and under	100·0	72·0	24·0	4·4
90–125	—	28·0	47·5	15·0
125–150	—	—	25·0	23·1
150–175	—	—	2·0	26·8
175–200	—	—	1·0	15·9
200 and over	—	—	0·5	14·8
TOTAL	100·0	100·0	100·0	100·0
Females				
60 and under	100·0	89·5	38·0	20·7
60–90	—	9·7	53·0	50·3
90–125	—	0·8	8·0	24·4
125 and over	—	—	1·0	4·6
TOTAL	100·0	100·0	100·0	100·0

[1] Cf. *Merseyside Survey*, vol. ii, p. 28.

[2] The ratio of male to female earnings at different ages was therefore the following:

Age	*Ratio*
14–15	1·1
16–17	1·1
18–20	1·2
21–64	2·1
65 and over	4·4

[3] This agrees with Bowley's estimate of £1,675 mn. (based on the same assumption) if an allowance is made for Northern Ireland.

For notes 4–7 see page 284.

The distribution of wages calculated by this method is not realistic because it is assumed that all persons are either employed all the year round or unemployed. In fact unemployment is fairly widespread, and a greater proportion of wage-earners suffers at one time or another a reduction of income from this cause.

From statistics on the spell of unemployment[1] it can be ascertained that only 21 per cent. of the average number of male and 6 per cent. of female unemployed were unemployed throughout 1937.

Persons suffering a spell of unemployment of 3 months and losing a quarter of their annual earnings were four times as numerous as their number at a given time; persons unemployed for 4 months three times, and so on. Hence the following figures were obtained:

Insured adult industrial wage-earners

(In thousands)

Annual earnings	*Men*	*Women*
Full earnings	2,280	426
Loss of one-eighth	4,835	1,176
Loss of three-eighths	269	47
Loss of five-eighths	78	9
Loss of seven-eighths	40	4
No earnings	215	11
TOTAL	7,717	1,673

Assuming that the incidence of unemployment is uniform[2] the distribution of wages has been modified on the basis of these figures and the following distribution obtained, for instance, for adult industrial wage-earners:

(In thousands)

Men		*Women*	
No earnings	215	No earnings	11
£90 and under	793	£60 and under	537
£90–125	2,065	£60–90	756
£125–150	1,781	£90–125	327
£150–175	1,451	£125 and over	42
£175–200	713		
£200 and over	699		
TOTAL	7,717	TOTAL	1,673

A similar procedure was applied to all wage incomes.

[4] *Standard Rates of Wages and Hours*, 1929. Bowley, op. cit., p. 67, states that the wages of juveniles were applicable in 1937.

[5] *New Survey of London Life and Labour*, vol. vi, p. 78 and p. 83; B. S. Rowntree, *Poverty and Progress*, pp. 162–3. These distributions were adjusted for the age group 16–64. [6] *Proceedings under the Agricultural Wages Act, 1937.*

[7] *New Survey of London Life and Labour*, vol. vi, p. 84.

[1] *Ministry of Labour Gazette*, 1938, p. 26.

[2] This assumption is probably not valid, but there are no data on which an alternative could be based.

For non-manual occupations the distribution of earnings under £250 only has been ascertained. The earnings of juveniles in clerical occupations and shop-assistants have been ascertained from the sources quoted. The distribution of earnings of adult salary-earners and shop-assistants is fairly accurate, being based on a large sample taken in 1938.[1] The following percentage distributions were obtained for adults:

Range of incomes	*Salaried persons*		*Shop-assistants*	
	Men	*Women*	*Men*	*Women*
£	%	%	%	%
90 and under	1·5	9·7	0·5	30·8
90–125	10·2	33·3	6·3	55·7
125–150	17·5	22·0	22·9	8·5
150–175	17·5	14·0	26·7	3·5
175–200	19·5	7·5	18 0	0·5
200–250	33·8	13·5	25·6	1·0
TOTAL[2]	100·0	100·0	100·0	100·0

Certain information is also available on salaries of nurses.[3] For salaried persons excepted from insurance the distribution in local administration has been used.[4]

The estimated distribution of the annual earnings of persons aged 16–64 in manual and non-manual occupations is shown in Table 89. The table also shows a similar distribution for persons insured for health and for all persons aged 16–64.[5] The next column includes, in addition to the above,

TABLE 89. *Distribution of earnings of employees, 1937*

Range of earnings	*Insured for unemployment, 16–64*			*Insured for health 16–64*	*All employees 16–64*	*All employees G.B. 14 and over*	*All employees U.K.**
	Manual	*Non-manual*	*All*				
£	Thousands	Thousands	Thousands	Thousands	Thousands	Thousands	Thousands
Under 60†	1,820	440	2,260	3,080	3,110	4,210	4,200
60–90	2,420	330	2,750	3,400	3,450	3,530	3,390
90–125	2,900	530	3,430	3,740	3,790	3,990	3,840
125–150	1,840	260	2,100	2,500	2,550	2,570	2,490
150–175	1,470	210	1,680	1,900	1,990	2,000	1,950
175–200	720	140	860	1,030	1,120	1,120	1,150
200–250	640	240	880	980	1,090	1,090	1,150
250 and over‡	60	—	60	90	90	90	300
TOTAL	11,870	2,160	14,030	16,710	17,190	18,600	18,470

* Incomes of husband and wife counted as one income.
† Including fully unemployed.
‡ Including wage-earners only.

[1] Bowley, op. cit., p. 89.
[2] Excluding earnings over £250.
[3] Appendix to *Report on Nursing Services* (Lancet) and *Report on Health Services* (P.E.P.), pp. 170–5. For nurses living in hospitals £50 mn. has been added as the value of payment in kind. (Two-thirds had less than £125 including payment in kind.)
[4] Bowley, op. cit., p. 89.
[5] That is, including 390,000 persons excepted or exempted from health insurance and 90,000 teachers earning less than £250.

boys and girls aged 14–15, and persons aged 65 and over. Of 1,040,000 boys and girls only 1 per cent. earned more than £60.[1] About 300,000 men and 70,000 women over 65 were in employment. The table includes all employees except 1,220,000 non-manual workers (including teachers) earning more than £250.[2]

vi. The distribution of incomes under £250

It is possible to examine the consistency of the figures in Table 89 in the range of incomes £125–250 with the distribution of incomes in Table 13. The incomes for income-tax purposes include the joint incomes of husband and wife as one income. It can be estimated that of women, aged 18–64 and earning, about one-eighth is married.[3] A corresponding number of women, 450,000,[4] was deducted and an allowance made for the joint incomes of man and wife. It was assumed that the proportion of married persons does not vary with income, and neither are the incomes of husband and wife correlated.

The figures were then increased to allow for Northern Ireland, and the distribution obtained is shown in the last column of Table 89.

In order to compare these figures with Table 13 the number of persons brought into the £125–250 class by payment in kind must be omitted.[5]

Range of incomes	*Employees*	*All incomes*	*Difference*	
£	Thousands	Thousands	Thousand	%
125–150	2,220	2,370	150	6·3
150–175	1,820	1,960	140	7·1
175–200	1,080	1,450	370	25
200–250	1,120	1,570	450	29

The two sets of figures seem to be consistent, for the difference between them reasonably accounts for employers, independent workers, and persons having unearned income.

The number of incomes under £125 was 11,430,000, and 500,000 incomes were brought to over £125 by payment in kind. There were, therefore, 10,000,000 incomes assessed for income-tax and 12,000,000 (excluding incomes of employers, independent workers, and unearned incomes) not assessed. On the basis of the distribution estimated these 12,000,000 incomes amounted to £900 mn. which is consistent with the estimates on p. 73.

[1] 930,000 insured for unemployment, 110,000 (mostly domestic servants) not insured.

[2] The total number of employees was therefore 19,800,000.

[3] In the London Survey in 1,000 families there were 350 women aged 18–64 earning and 44 families with man and wife earning.

[4] Domestic servants were ignored.

[5] Payment in kind is not assessed for income-tax.

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