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**THE INCIDENCE OF
INCOME TAXES.**

THE INCIDENCE
OF
INCOME TAXES

BY

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**TO
MY MOTHER**

PREFACE

IN this book an analysis is given of the incidence both of partial income taxes, that is of income taxes which are levied on the incomes arising from particular lines of industry, and of a general income tax. The scope and arrangement of the book is shown in the first chapter. An analytical table of contents is given, showing in detail the topics which are dealt with: it is hoped that it will facilitate the task of the student who may wish to use the book as a text.

My interest in the topic commenced while attending the lectures on public finance of Professor W. R. Scott. Embarkation of the inquiry was encouraged by Mr. J. W. Nisbet, who afterwards did much to assist me in it. I was subsequently much indebted to the kindness and assistance of Mr. R. H. Coase, Mr. J. K. Eastham, Dr. A. L. Macfie and Professor J. Morgan Rees. The distinguished reader for Messrs. Macmillan suggested certain alterations and extensions in the manuscript; and his advice, I believe, led to a substantial improvement in the final form of the book.

Numerous references have been given in the footnotes to different authorities. This has enabled me to acknowledge my main obligations to other writers, among them the great Italian economists De Viti, Barone, Einaudi and Fasiani. It may also assist the student in his further reading.

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January 1939

D. B.

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 - (i) it gives rise to no transfer of resources between different branches of industry.
 - (ii) it leaves the number of firms in each branch the same as before, and
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 - (A) a more even distribution of a given national income,

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APPENDIX

1. PUBLIC works in a depression and the Income Tax.

The theory which we developed in Part III had reference only to the case of a stationary or continuously progressive community. In the real world, as everybody knows, progress in a community is not along a smooth curve, but takes place by fits of intensive economic activity followed by periods of industrial slackness and of severe unemployment, particularly in the investment goods industries. Which policy, both monetary and fiscal, could most appropriately be pursued by a Government in order to alleviate the distress of unemployment and poverty during depressions, and also to prevent the political damage which they may cause, is one of the major problems confronting economists at the present day; and a large amount of research is, very properly, being directed to this question.

The present author has nothing that is new to say on this topic; but he should like to denote his adherence to the manner of thinking of Keynes, Harrod, Mrs. Hicks and others. These writers advocate, as measures to combat the manifold evils of a period of trade depression, a system of consumers' subsidies such as payments of unemployment benefit or dole, partly financed by borrowing; and, a much more important instrument on which to rely, a policy of public works. This would create primary as well as secondary employment, whereas the dole payments would only create secondary employment, since the original payment of the money distributed in dole is not in return for any work done. Again, public works give the community a concrete return for the money which it is spending.

The financing of the works should be carried out by Ways and Means advances, Treasury bills and stock of longer dated maturities, in such a proportion as to fortify, so far as possible, the liquidity of the country's banking system and enable it to combat the deflationary tendencies of the depression.

A case has also been made out, which to many must seem entirely convincing, for the establishment of a Government Office for the Planning of Public Works, whose function it would be to determine which public works could most appropriately be postponed from periods of good trade to periods in which the volume of employment was declining.¹

Responsibility for redeeming the loans raised during the depression to finance the schemes of public works and consumers' subsidies, would probably fall mainly on the income taxes. This redemption could be carried out by maintaining the Income Tax and Sur-Tax at a sufficiently high and unchanged level throughout the course of the trade cycle, so that the budget surpluses of good years would make up for the deficits of the bad. Or, perhaps, during a depression, if investment prospects were believed to be improving and the schedule of the marginal efficiency of capital to be fairly elastic, the height of these income taxes might, with advantage, be lowered, with a view to leaving the rich with larger money balances and encouraging the recovery of investment.

But, as Harrod has pointed out,² the chief requisite in the next depression must be to provide the public works out of borrowing, even though the loans so raised may never be more than partially repaid.

2. If an income tax is progressive, a person whose income fluctuates pays a higher rate of taxation than that corresponding to his average size of income.³

Let us suppose that a certain individual's average income is $\text{£}x$ per year, but that in some years his income is greater than $\text{£}x$, in others less. The successive amounts by which his income falls short of its average, $\text{£}x$, are, let us say, $\text{£}a_1, \text{£}a_2, \dots$; and the successive amounts by which it exceeds its average, $\text{£}\beta_1, \text{£}\beta_2, \dots$

¹ Harrod, *The Trade Cycle*, pp. 196-201; and Ursula K. Hicks, *op. cit.* pp. 229-30.

² *Op. cit.* pp. 215-23.

³ See Ahman, "Uncertainty-bearing and the Income Tax", *Economic Journal*, 1929.

Since \bar{x} is the average income, therefore $\Sigma\alpha = \Sigma\beta$.

We consider first the case represented in diagram I in which the income tax is proportional, being imposed at a flat rate of, say, 10 per cent :

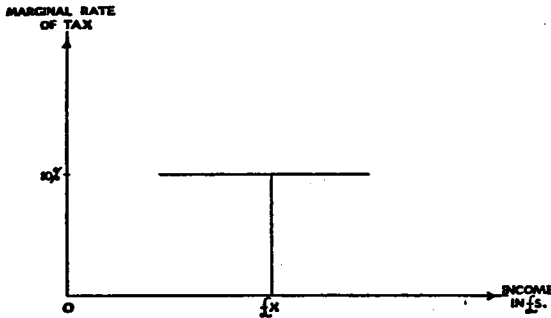


DIAGRAM I

In the years when the person's income falls below \bar{x} he will pay an amount of income tax less than he would have done had his income remained at a steady level of \bar{x} . The total amount of taxation which he escapes in such years is $\Sigma\alpha \cdot 10/100$, £'s. On the other hand in the years when his income exceeds its average figure, he will pay to the Exchequer more than he would have done had his income been steady. The amount extra which he pays in such years will be in all $\Sigma\beta \cdot 10/100$, £'s. But $\Sigma\alpha = \Sigma\beta$. Hence it will be just as if on the average the person paid income tax on an income of \bar{x} . (We disregard the influence of time discount, which would not seem to be important here.)

If the income tax is progressive in amount, being higher on each additional increment of income which is earned, then the curve of marginal rate of the tax will be upward-sloping, as in diagram II. Let the rate of tax which corresponds to the person's average size of income be R , which is equal to $P M$ in diagram II. When his income falls below its average size, \bar{x} , he will escape payment of income tax on the amount by which it is deficient. If we adopt the same terminology in regard to the meanings of α 's and β 's as before, then the

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total amount of tax payment which the person will avoid making in these years when his income falls below its average, will be a payment on a total amount $\Sigma\alpha$, £'s of income. The

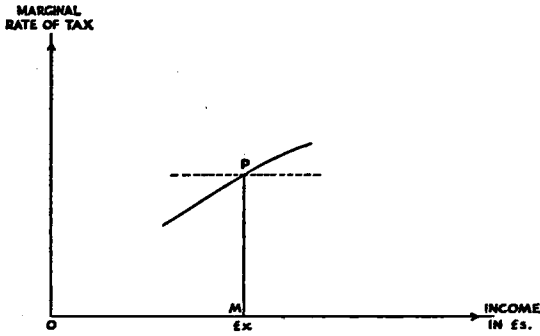


DIAGRAM II

rate of tax payable on each unit of this income is at a rate less than R . The total tax payment that the person avoids, therefore, will be less than $R\Sigma\alpha$, £'s.

In the years in which his income exceeds its average

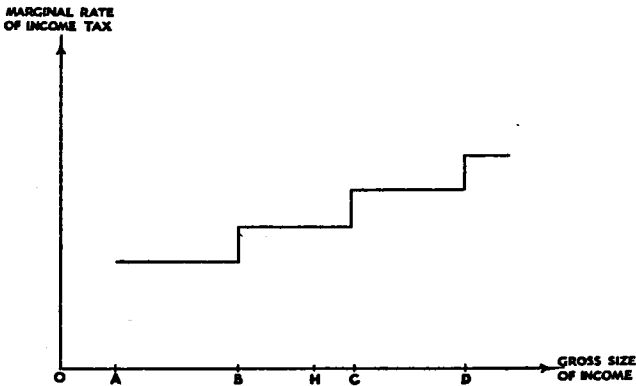


DIAGRAM III

amount, he will make a tax payment on an additional amount of income equal in all to $\Sigma\beta$. The rate at which tax is paid on every unit of such amount is greater than R . His total

tax payment on such amount of income, therefore, is greater than $R\Sigma\beta$, £'s.

Hence the amount of tax payment which the person makes in these years when his income exceeds its average size is greater than the amount of tax payment which he escapes in the years when his income falls below its average size. That is, under a progressive income tax, a person whose income fluctuates, pays income tax at a higher average rate than he would have done had his income been of constant size.

The British Income Tax (including Sur-Tax) is graduated in steps, somewhat after the fashion of diagram III. Clearly if a person's income which is of average size OH, fluctuates sufficiently to take it, in some years, into the range CD, above that within which his average size of income lies, then his average tax payment will be greater than that for an income which is equal to OH in size and which is constant from one year to another.¹

3. The severity of a progressive income tax increases when a rise occurs in the general price level.²

Let us suppose that a rise occurs in the price level of a certain community; and consider the case of an individual whose income increases by the same percentage as the price level, both increasing, say, by 15 per cent. The scale of income tax, we suppose, is progressive, as represented in diagram IV. If the individual's money income increases from OA to OB, which is 15 per cent higher, then it can be seen from the diagram that the total proportion of his income which he pays in tax is greater than before.³ His gross real income is the same as before, but his net real income is less. This effect is accentuated, the more strongly progressive is the marginal rate of tax to which he is liable.

¹ "Under the scale for 1925-26 an income of £4000 and £10,000 in two successive years pays £138 more in tax than an income for each year of £7000" (*Colwyn Report*, § 349).

² See Viner, "Taxation and Changes in Price Levels", *Journal of Political Economy*, 1923; and Kambe, "Prices and Injustice in Taxation", *Kyoto University Economic Review*, 1927.

³ If T (I) is the total income tax payable by a person whose income

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It follows that a person whose money income increases, but by less than the rise in the general price level, will suffer both on account of the rise in prices which reduces his gross real income and the higher rate of income tax to which he becomes subject, which operates to further reduce his net

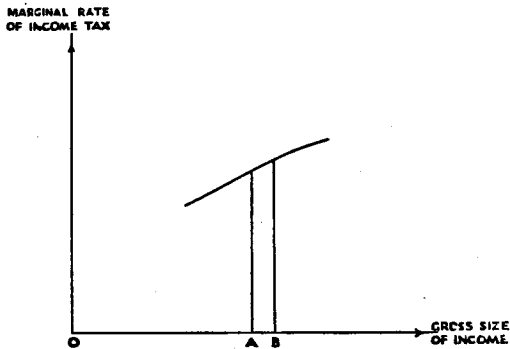


DIAGRAM IV

real income. Or, again, in order that a person who is subject to income tax at an increasing marginal rate should enjoy a higher real income when the price level rises, it will be necessary that the increase in his money income should exceed to some extent, the rise in the price level.

4. Examples of calculation of liability to British Income Tax (illustrating the rules given in Chapter XVIII, § 6).

The following are based on the rates of tax in force for the Income Tax year 1937-38, ending April 5, 1938 :

is I, then when his income rises, he pays a higher percentage of it in taxation

$$\text{if } \frac{d\left(\frac{T}{I}\right)}{dI} > 0$$

i.e. $\text{if } \frac{dT}{dI} > \frac{T}{I} \quad \dots \quad (1)$

And it can be shown geometrically that a sufficient condition for this is that dT/dI should be monotonic and > 0 .

(1) Single man. Income £250, wholly "earned":

Gross income . . .	£250	
Earned income re- lief (1/5) . . .	£50	
Personal allowance	100	
		<u>150</u>
Liability (on "taxable income") . . .	£100	@ 1s. 8d. in £ = <u>£8 6 8</u>

(2) Married man. Income £500, wholly "unearned":

Gross income . . .	£500	
Personal allowance	£100	
Wife's allowance . . .	80	
		<u>180</u>
"Taxable income" . . .	£320	
Liability at reduced rate	£135	@ 1s. 8d. in £ = £11 5 0
„ standard rate	£185	@ 5s. in £ = 46 5 0
		<u>£57 10 0</u>

(3) Married man with two children. Income £1700 "earned" plus £200 "unearned":

Gross earned income . . .	£1700	
Earned income relief (maximum) . . .	300	
		<u>£1400</u>
Unearned income . . .	200	
		<u>£1600</u>
Personal allowance	£100	
Wife's allowance . . .	80	
Child allowances (2)	120	
		<u>300</u>
"Taxable income" . . .	£1300	
Liability at reduced rate	£135	@ 1s. 8d. in £ = £11 5 0
„ standard rate	£1165	@ 5s. in £ = 291 5 0
		<u>£302 10 0</u>

It may be mentioned that further reliefs, additional to those mentioned in the text, are allowable, in respect of

dependent relative (allowance £25) and — to widows and widowers only — *housekeeper* (allowance £50). Reliefs are also allowed for life-assurance premiums paid on policies on the life of the taxpayer or his wife.

A further measure of relief is allowed to persons of sixty-five years of age or more whose incomes do not exceed £500 per year, inasmuch as all their income is assessed in the same way as “earned income”, even although part or the whole of it may be “unearned”:

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