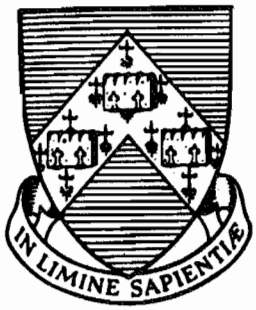

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The Funding of the National Health Service What is the Problem and is Social Insurance the Answer?

by ANNE LUDBROOK and ALAN MAYNARD

DISCUSSION PAPER 39

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What is the Problem and is Social Insurance the Answer?

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ABSTRACT

Whenever the British National Health Service (NHS) appears to be short of money the medical, political and economic proponents of various forms of alternative financing for health care enjoy a resurgence. What would be the economic effects of changing the financial base of the NHS from general taxation to a system of social (or National) insurance?

The main effects of such a change can be summarised as first, a regressive redistribution of post-tax income from low earners to the better paid, second, an increase in the supply of labour from low income groups and possibly a reduction in the supply of labour from higher income groups, third, a reduction in aggregate demand and a fall in the demand for labour which may increase unemployment, and, finally, if forward shifting of the tax is assumed, a higher price level. Apart from the tax changes detailed in section 2, all these effects are qualitative and their precise size will depend on the new tax schedule and the nature of the shifting of the employers' part of the new tax.

As with the proposed Poll tax, the regressive nature of the social insurance system could be mitigated by a progressive tax schedule. However, such a solution would increase the administrative costs of collecting tax revenue and offer no solution to the resolution of the problem of how to achieve a consensus over the level and nature of health care provision.

The debate about health care finance leads policy makers into blind alleys. The proper area for policy debate is how, whatever the mix of public and private finance, can efficiency in the use of scarce resources be achieved? To achieve efficiency it is necessary to provide care up to the point where the value of benefits (enhancements in the duration and quality of life) just equals the costs. Unfortunately in all health care systems benefits and costs are unknown and the efficiency of health care provision is impossible to determine. The resolution of such problems would not only be useful in identifying "value for money", but also whether health care is actually improving the health of citizens.

CONTENTS

Introduction

Whenever the British National Health Service (NHS) appears to be short of money the medical, economic and political proponents of various forms of alternative financing for the health service enjoy a resurgence. Apart from an extension of the system of charges, the most usual suggestions are the introduction of public insurance or the increase of private insurance.

The current round of debate has been enlivened (confused?) by the introduction of various proposals that concern the provision as well as the funding of health care. These have a common theme, being based on the Health Maintenance Organisation approach introduced in the United States of America, and essentially involve a pre-payment scheme with benefits in kind. (see, for example, Peet (1987), Goldsmith and Willetts (1988), Butler and Pirie (1988)).

The adoption of a completely different system of health care provision and financing is clearly one option that is available to policy makers. However, each health care system has its own inherent problems. Abandoning one less than perfect system for another is often the avenue of first resort when it should be that of the last resort. A prior stage in the debate is to consider the feasible reforms of the existing system. It is then a matter of judgement whether time and effort would be better rewarded by undertaking such reforms, rather than changing the whole system.

Indeed, the issues of how to fund health care and how to provide it can be considered separately. There is no inherent reason why our current funding arrangements could not be retained and applied to a quite different organisation of provision, nor why the present NHS organisation cannot be funded differently. It is this latter aspect of the current debate which

we wish to address in this paper. That is not to say that the system of provision does not need or is not capable of reform. It does and it is, but this is a subject that can be considered separately from the question of funding and the aim of this contribution is to clarify that point.

The options that remain, therefore, are to retain the NHS with mainly tax funding but with supplementary finance from charges or from private insurance, or to retain the NHS, but to change its financial base completely. The first option, private insurance and charges, is usually seen as a supplement to existing arrangements and it is argued that total spending on health services could be increased i.e. government funding of the NHS would not be decreased pro rata as private insurance revenues or income from charges increased. This is a hypothetical proposition and its validity would depend largely on the social and economic policies of the government. For this reason, the implications of increasing private insurance or extending the system of charges are difficult to assess objectively.

However, the second alternative of a switch from mainly Exchequer funding of the NHS to an alternative system, such as social insurance, would have considerable impact on the tax system and on the economy as a whole. Interest is being shown by policy makers in social insurance schemes (see, for example, Brittan (1988)), such as those that exist in most other European countries, where expenditure on health care takes a larger share of gross domestic product (GDP) than it does in the United Kingdom (UK). (OECD (1987)).

How much money should be spent on health care is one of the issues at the heart of the current debate. However, there is too little information

on the costs and benefits of additional health care provision to provide an objective answer. The immediate policy resolution will therefore be based on normative values. Here we turn our attention to two other questions which have become somewhat submerged but which are nevertheless important. The first concerns how we fund a given level of health care provision and the main part of the paper is concerned with an analysis of the impact of social insurance funding as a replacement for tax funding of the NHS. The second question concerns why it is thought that alternative methods of financing will produce more funding than will the tax system. This issue will be taken up in the final part of the paper.

(1) Social Insurance in Europe

In Western Europe, the financing of health care expenditure from insurance contributions is the rule rather than the exception. Within the European Economic Community (EEC), only Denmark, Ireland and the UK finance a large proportion of health care expenditure from general taxation. The original six members of the EEC had insurance based schemes, although the situation has changed in Italy, with earmarked national insurance contributions funding a national health service scheme. This section will outline the structure of a social insurance scheme, drawing on the experiences of three EEC member countries, France, the Netherlands and West Germany, and discuss some of the problems that have arisen.

In each of the countries, social insurance for health care involves more than one scheme. In France, most employees are obliged to join the general scheme (regime general) which provides cover for about three-quarters of the population. There are separate schemes for certain occupational groups, for the self-employed and for farmers, extending total coverage to 99 per cent of the population. All of these schemes are

operated by semi-autonomous public bodies.

In the Netherlands and West Germany, the social insurance schemes are operated by independent sickness funds which have evolved from the private insurance carriers that existed prior to government intervention. The Netherlands has three main insurance schemes. The compulsory insurance scheme covers all employees earning less than a limit set annually at around twice the minimum wage. Self-employed persons earning less than this amount can join the voluntary insurance scheme and retired persons with incomes less than about 40 per cent of this limit can join the insurance scheme for the elderly. In addition to these schemes, the whole population is covered for catastrophic illness under the Exceptional Medical Expenses Programme.

In West Germany, social insurance for health care is compulsory for all manual workers, for non-manual workers earning less than a limit set annually[1] and for pensioners. Employees with earnings above the insurance ceiling can opt to become voluntary members and over 90 per cent of the population are members of such schemes, the remainder purchasing their own private insurance cover.

The social insurance schemes in France, the Netherlands and West Germany are not the only source of finance for health care expenditure. The contribution made by households and private insurance is sizeable in all countries, but for different reasons. In France, social insurance coverage is almost universal and many of those without cover are entitled to means tested benefits under the social aid scheme. The contribution of around a quarter from private sources arises from the operation of a co-payment scheme for many types of health care and the consumption of

"superior" types of care, such as accommodation in a single room rather than a hospital ward. In the Netherlands and West Germany the coverage is not so universal and the more affluent section of the community finance some or all of their health care privately.

In addition to services funded directly by central or local government, contributions are also made to the financing of the social insurance schemes. Although, in theory, the social insurance schemes in France are self-financing, in practice the government has to finance considerable and regular deficits. The government in the Netherlands provides specific subsidies for the voluntary insurance schemes and for the insurance scheme for the elderly. The social insurance scheme in West Germany receives only a small amount of government subsidisation.

The basic structure of contributions is in the form of a payroll tax paid by employers and employees, although separate arrangements may exist for non-employees, such as the self-employed and pensioners. Despite the fact that these schemes are described as social insurance, the contribution depends only on income, not on actuarial risk or the benefits to be received, and the schemes are run on a pay as you go basis.

In the Netherlands and West Germany, the contribution is split equally between employers and employees, whereas the employers' contribution in France is higher on part of the wage and lower on the rest. All the countries have had or still have a ceiling contribution; in France the ceiling on employees' contributions was removed in 1980 as a measure to reduce the deficit. The level of combined contributions is over 10 per cent in all countries.

The distributive effect of these contribution schemes depends partly on the assumptions that are made about the incidence of the employers' contribution. The contributions that come from the employees' income, whether nominally employee or employer contributions, are regressive if an earnings ceiling is in operation, i.e. employees with incomes above the ceiling pay a declining proportion of their income in contributions. If the employers' contribution is passed forward onto prices (i.e. it operates as a sales tax) then this is also slightly regressive.

The treatment of non-employees varies between the different countries. Schemes for the self-employed either levy contributions based on income, as in France, or else charge a flat-rate contribution, as in the Netherlands, although there are provisions for low income groups to pay reduced contributions. Those who are in receipt of State benefits, such as the unemployed, may have contributions deducted from their benefits at source, as in the Netherlands, or else have their contributions paid for them, as in West Germany, where contributions amounting to two-thirds of the rate for the equivalent group of employed persons are paid by the Federal Labour Offices on behalf of the unemployed. As far as retired people are concerned, the West German system is that pension organisations pay the contributions, on the same basis as they are paid for the unemployed, whereas in the Netherlands the pensioners pay monthly contributions that are linked to income. To the extent that the benefits paid to the unemployed and to pensioners in the Netherlands allow for the health insurance contributions that will be paid, the systems adopted in the Netherlands and West Germany amount to much the same thing. However, the Dutch scheme preserves the concept of contributions as a qualifying condition for benefit.

The most obvious difficulty faced by the social insurance schemes in Europe has been raising sufficient revenue from contributions to meet their expenditure commitments. This problem is mainly due to the open-ended nature of the provision of services under these schemes i.e. there are no cash limits on health care expenditures and cost containment problems are significant and ubiquitous. However, the problem is exacerbated by the narrowness of the tax base and the fact that increased unemployment or periods of (statutory or voluntary) wage restraint may reduce the real income of the insurance scheme.

The deficits incurred by the social insurance schemes result in government subsidies from general revenue and/or increased contribution rates for the following year. The high level of total social insurance contributions is another problem that is causing concern, particularly amongst employers. It is argued that the employers' contribution increases the cost of labour and, therefore, the price of the firm's products, making domestic products less competitive against those of other, less taxed, countries. This case is argued most strongly by the French, who have the largest percentage of labour costs attributable to social security contributions in the EEC (Eurostat (1987)). However, the evidence concerning, first, the incidence of the employers' contribution and, second, its economic effects, are inconclusive. The discussion of these issues will be taken up in Section 3, after the description of social insurance as it might operate in Britain is presented in the next section.

(2) The Implementation of Social Insurance in Britain

The elements of the social insurance systems used to finance health care in some European countries were set out in the previous section. This section examines the implementation of a similar system of financing health

care in Britain. However, it will be assumed throughout that the main characteristics of the NHS, public provision of services and universal coverage, would be retained. As the social insurance schemes in other European countries are by no means homogeneous in their characteristics but have evolved from previous systems, this is a reasonable assumption.

At present, the NHS is financed from three main sources and the details are shown in table 1. The largest of these (86 per cent) is the contribution from the Consolidated Fund or general exchequer. There is a small NHS contribution already contained in the existing National Insurance Fund contribution and this accounts for 11 per cent of the health service's finance. About 3 per cent of NHS finance comes from charges to patients for prescriptions, dental treatment and ophthalmic services. For the purposes of this analysis it will be assumed that charges to patients will remain at the same level and the effects of replacing the Consolidated Fund contribution with an expanded National Insurance contribution will be examined.

Social insurance schemes usually include an element of general exchequer financing, as was discussed in section 1, either to meet deficits or as a contribution or subsidy on behalf of particular groups. Social insurance financing for the NHS should not lead to unexpected deficits provided that the present system of cash limits is retained. It is possible that the government might meet part of the costs of providing care for pensioners, the unemployed and others in receipt of state benefits, out of general taxation.[2] However, the case that will be examined here is that of no exchequer funding i.e. the present Consolidated Fund Contribution will be replaced by higher National Insurance contributions paid by employers, employees and the self-employed. Recipients of state social

Table 1

National Health Service Expenditure by Source of Finance

United Kingdom

	1966		1976		1986*	
	£ million (per cent)					
Consolidated Fund	1102	(77)	5546	(88)	16292	(86)
National Insurance Contributions	166	(12)	605	(10)	2252	(11)
Charges to patients	30	(2)	128	(2)	620	(3)
Local Authorities	134	(9)	-		-	
TOTAL	1432		6279		19801	

*estimate

Source: Office of Health Economics (1987)

security benefits will be entitled to NHS treatment, but will pay no contributions. The results of analysing this change in the tax sytstem will indicate the direction of change appropriately, even if some exchequer funding did occur.

Consolidated Fund revenue is derived from many different taxes and the main sources of revenue are detailed in table 2 for 1986. No tax revenue is specifically earmarked for funding the NHS, but the final column of table 2 shows the relationship between the Consolidated Fund contribution to the NHS and the yield of main taxes. General exchequer funding for the NHS amounts to 40 per cent of the total Customs and Excise revenue and exceeds the yield of any individual indirect tax other than VAT. However, present government policy favours indirect taxes as a source of revenue and, therefore, it seems reasonable to assume that the reduced requirements for Consolidated Fund revenue would be used to lower direct taxes, the most obvious choice being income tax which is the main form of direct taxation.

Income tax revenue could be reduced by 45 per cent if the revenues from the Consolidated Fund were not used to finance the NHS. This reduction in taxation could be achieved in many ways but the possibility examined here is that each of the tax rates would be decreased by 45 per cent. In order to meet the additional cost of financing the NHS, the National Insurance contribution income would have to be increased in all categories of contribution, the standard rate paid by employers and employees would increase, in total, by up to 12.64 percentage points, which is similar to contribution levels elsewhere in Europe. This may either be split between the two parties, in the same ratio as the existing contribution, or else the increase may be borne solely by the employee who is benefiting from the reduction in income tax.

Table 2

Main Sources of Consolidated Fund Revenue 1986

Source of revenue	Receipts £ million	Consolidated fund payment to National Health Service as a percentage of tax receipt
Total Inland Revenue	52430	32
Personal Income Tax	37618	45
Total Customs and Excise	42002	40
Value Added Tax	22724	74
Hydocarbon Oils	7151	237
Alcohol	4240	399
Tobacco	4643	365

Source: United Kingdom National Accounts, 1987.

Table 3

Actual and proposed National Insurance and tax rates

	National Insurance (standard rate not contracted out) percentage of gross wage			Income tax - pence in the pound	
	Weekly Wage	Employee	Employer		
Actual situation	£38-£59.99	5%	5%	Basic rate:-	29
	£60-£94.99	7%	7%		
	£95-£139.99	9%	9%	Higher rates:-	40-60
	£140 and above	9% up to £285 per week ceiling	10.45% (no ceiling)		
Plan A	£38-£59.99	8.25%	8.25%	Basic rate:-	16
	£60-£94.99	11.55%	11.55%		
	£95-£139.99	14.85%	14.85%	Higher rates:-	22-33
	£140 and above	14.85% up to £285 per week ceiling	17.24% (no ceiling)		
Plan B	£38-£59.99	11.5%	5%	Basic rate:-	16
	£60-£94.99	16.1%	7%		
	£95-£139.99	20.7%	9%	Higher rates:-	22-33
	£140-£285	20.7%	10.45%		
	over £285	20.7% to £285 and 6.79% above this	10.45%		

Combining these possible tax and National Insurance changes gives the two plans for a combined tax/National Insurance structure for employed persons which are summarised in table 3, together with the details of the present actual (1986-87) situation, for comparison. Under plan A, the increased National Insurance contribution is split between the employer and the employee as shown. For plan B, the entire increase is added to the employee's contribution.

The effect of these changes on individual employees depends on their level of earnings, their entitlement to tax free allowances and the incidence of the employer's contribution i.e. whether or not it is passed onto the employee in the form of reduced wages. A summary of the effects on marginal tax rates if the employer's contribution is not shifted onto the employee is presented in table 4. Anyone earning less than £38 per week pays no contributions. The next income group earn more than the lower limit for National Insurance but less than their tax free allowance; they pay only National Insurance contributions and employees in this group face an increase in their marginal tax rates. The marginal tax rates for all other groups would fall under the new financing arrangements. Under the current tax structure, the marginal tax rate falls for employees earning more than the upper limit for National Insurance (£285 per week) but less than the higher tax rate incomes. The degree of regressiveness is greater under plans A and B. Once the limit of National Insurance contributions is passed, progressivity in the marginal tax rate is not restored until incomes reach the highest rate tax band under Plan A or the two highest under Plan B.

If we assume that the employer's contribution is part of the employee's wage, the results can be seen in table 5. Compared to table 4, this scenario has the effect of increasing the marginal tax rates on

Table 4

Effect of changes in finance on marginal tax rates*

Single Person	Married Person	Actual	Plan A	Plan B
£38-£44.90	£38-£59.99	5	8.25	11.5
- -	£60-£70.28	7	11.5	16.1
£44.91-£59.99		34	24.25	27.5
£60-£94.99	£70.29-£94.99	36	27.55	32.1
£95-£139.99	£95-£139.99	38	30.85	36.7
£140-£285	£140-£285	38	30.85	36.7
£285.01-£375.67	£285.01-£401.05	29	16	22.79
£375.68-£433.36	£401.06-£458.75	40	22	28.79
£433.37-£533.36	£458.76-£558.75	45	24.75	31.54
£533.37-£685.28	£558.76-£710.67	50	27.5	34.29
£685.29-£837.21	£710.68-£862.59	55	30.25	37.04
over £837.21	over £862.59	60	33	39.79

* assuming no backward shifting of the employers' contribution.

Note all data in the final three columns are percentages.

Table 5

Effect of changes in finance on marginal tax rates*

Single Person	Married Person	Actual	Plan A	Plan B
£38-£44.90	£38-£59.99	9.5	15.2	15.7
- -	£60-£70.28	13.1	20.7	21.6
£44.91-£59.99		37.1	30.0	31.0
£60-£94.99	£70.29-£94.99	40.2	35.1	36.5
£95-£139.99	£95-£139.99	43.1	39.8	41.9
£140-£285	£140-£285	43.9	41.0	42.7
£285.01-£375.67	£285.01-£401.05	35.7	28.4	30.1
£375.68-£433.36	£401.06-£458.75	45.7	33.5	35.5
£433.37-£533.36	£458.76-£558.75	50.2	35.8	38.0
£533.37-£685.28	£558.76-£710.67	54.7	38.2	40.5
£685.29-£837.21	£710.68-£862.59	59.3	40.5	43.0
over £837.21	over £862.59	63.8	42.9	45.5

* assuming employers contribution is shifted backwards onto wages.

Note all data in the final three columns are percentages.

incomes liable for National Insurance but below the income tax threshold, however the degree of regressiveness in both the current and proposed tax structure is similar. Under all the proposed tax structures, the lowest income group in table 5 face increased marginal tax rates while for all other groups they are lower or the same.

The other important parameter of the tax structure is the average tax rate. Figures 1 and 2 show average tax rates for single people. Figure 1 represents the situation if the employers' contribution is not shifted onto the employee (cf table 4) and figure 2 shows the situation if it is (cf table 5).[3] In each figure, the curves representing the actual structures and plans A and B are labelled accordingly.

In figure 1 it can be seen that the average tax rates are more regressive above the National Insurance upper limit (£285 per week), under plans A and B; a degree of progressivity is not restored until incomes of £500 per week (plan A) or £700 per week (plan B). The planned changes would increase average tax rates for the lower income groups and reduce them for higher income groups. Under plan A, most employees benefit from lower average tax rates but this is because part of the burden of payment has been shifted onto the employer. Most of the employees with incomes below the National Insurance upper limit face higher average tax rates under plan B where the increased contribution falls solely on the employee.

In figure 2, all contributions, whether nominally employee or employer, are assumed to be part of the gross wage. This results in the curves representing the planned tax structures being more closely grouped, until the reduced higher tax rates take effect. The largest increase in average tax rates is again faced by the lowest paid and the average tax rate is increased over a much longer range of incomes under plan B than

Figure 1

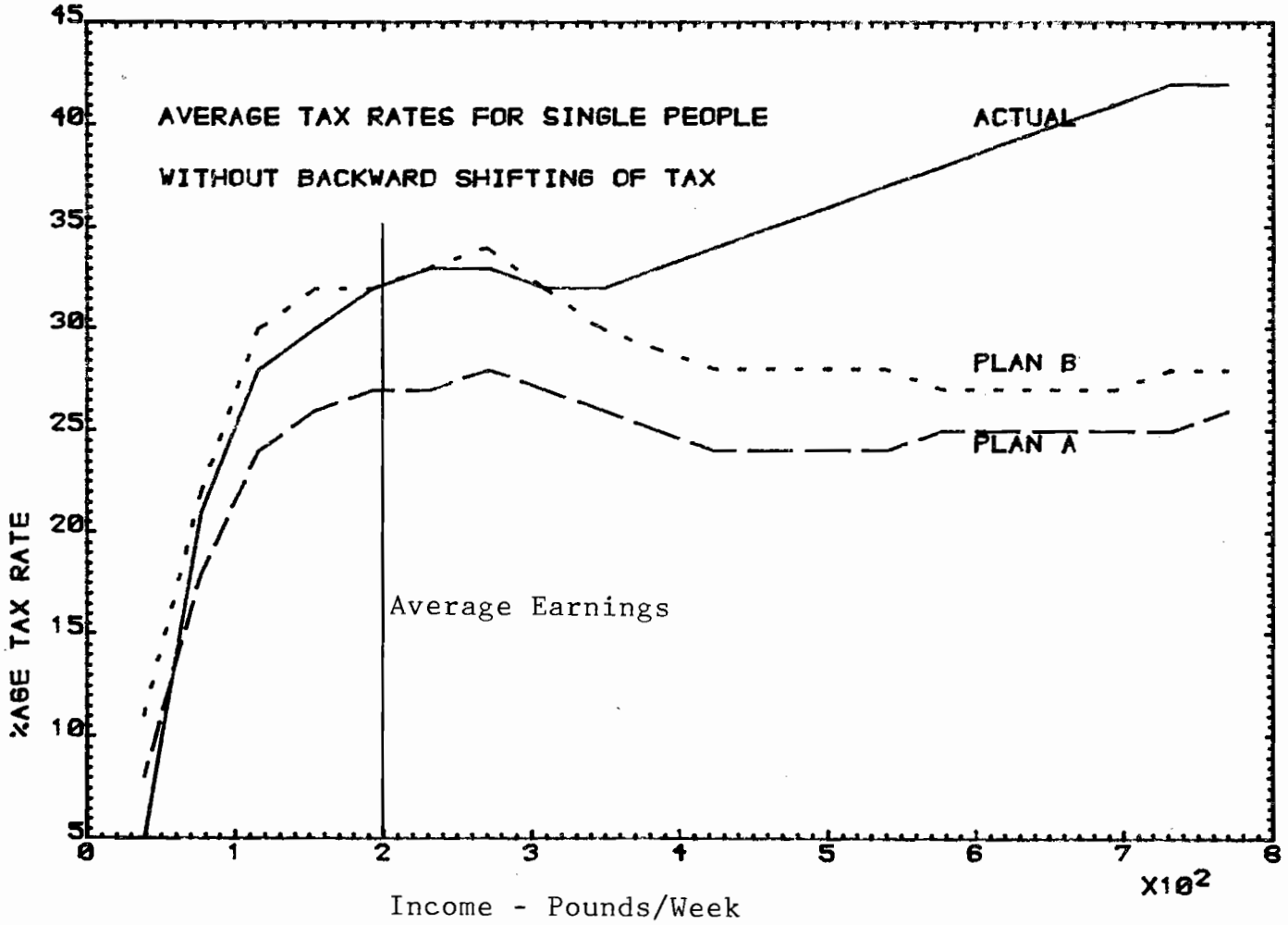
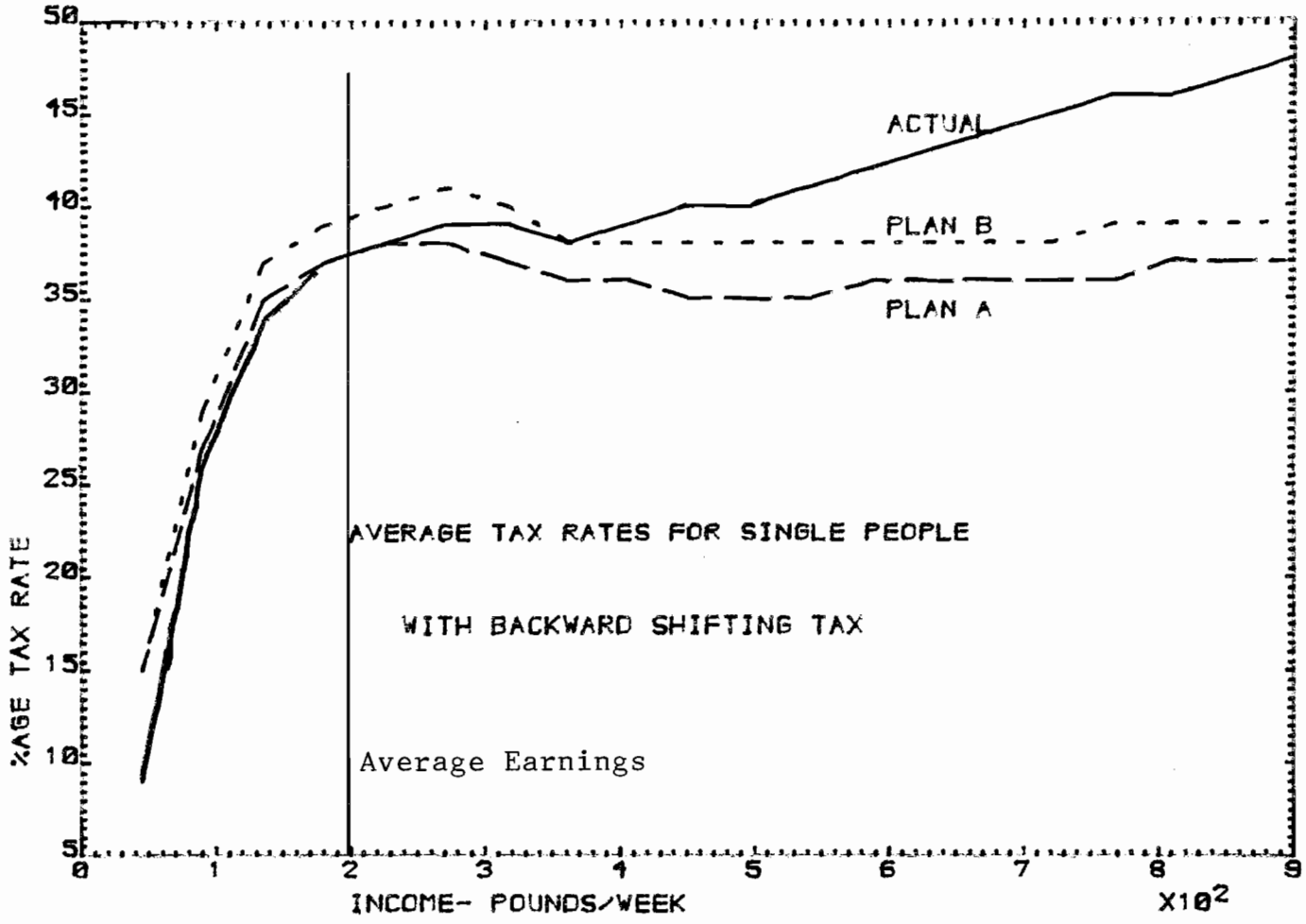

AVERAGE TAX RATES FOR SINGLE PEOPLE
WITHOUT BACKWARD SHIFTING OF TAX
ACTUAL
PLAN B
PLAN A
Average Earnings
%AGE TAX RATE
45
40
35
30
25
20
15
10
5
0
1
2
3
4
5
6
7
8
X10²
Income - Pounds/Week

Figure 2


50
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6
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8
9
%AGE TAX RATE
INCOME- POUNDS/WEEK
X10²
ACTUAL
PLAN B
PLAN A
AVERAGE TAX RATES FOR SINGLE PEOPLE
WITH BACKWARD SHIFTING TAX
Average Earnings

under plan A.

This section has concentrated on the effects of changes in the tax/National Insurance structure on employed persons, because these form the majority of those affected. The economic implications of these changes in the financing of the NHS will be discussed in the next section. However, it is worth noting that the effects of changes in the tax/National Insurance contributions for the self-employed will be more regressive within this group than those for employees. This is because part of the increased National Insurance contributions would be levied at a flat-rate (under existing arrangements) whereas the benefit from reduced taxation increases with income. It should also be noted that the shift from tax to National Insurance will reduce the value of various tax allowances, such as mortgage interest tax relief.

(3) The economic effects of social insurance financing for the NHS

3.1 Introduction

The purpose of this section is to analyse the economic consequences of the redistribution of the tax burden described in the previous section. The tax structure has a pervasive effect on the economy but the discussion here will concentrate on three important factors:- aggregate demand, employment and prices. This is not to say that other economic effects are not relevant to the discussion of alternative methods of finance. For example, the greater regressivity of the proposed tax/National Insurance structure will result in weaker automatic stabilisation. However, the effects on work incentives, on demand for labour, on inflation and on the level of economic activity are all relevant and controversial issues and they are often subjected to rather muddled analysis.

3.2 The incidence of National Insurance contributions : general issues

The main source of uncertainty as to the facts is the incidence of National Insurance contributions, and in particular, the employer's share. The conventional text book analysis is that in a competitive labour market the division of such contributions between employers and employees is immaterial; the employee will finally pay the tax through reduced real wages (see, for example, Musgrave and Musgrave (1980)). In practice, the labour market is not perfectly competitive and Kay and King (1986) argue a more general case for disregarding the distribution of the contribution between employers and employees. The employer's contribution results in some combination of lower money wages and higher prices, with the purchasing power of the employee's income being the same, whatever happens. The adjustment may take time, however, meaning that the short run and long run impact of any change may be different.

There are two important qualifications to this general statement. As in most analyses, labour is treated as an homogeneous input, but this argument is correct only in the very long run. For practical purposes (i.e. the short run), the labour market should be treated as segmented, with often limited mobility between occupational groups. The consequence of this is that the effect of increased National Insurance contributions will be different in different sectors of the labour market. Whilst the discussion in this section will concentrate on the average effects of tax changes,[4] the existence of segmentation in the short run should not be forgotten.

Secondly, if the employer's contribution is shifted forward (as a commodity tax) part of this tax will be paid out of higher incomes, which escape the National Insurance contribution, and out of non-employment

income, such as investment income and state benefits. The overall difference in the incidence of the tax burden when the employer's contribution is shifted onto prices rather than wages may be small but not insignificant.

The evidence concerning the incidence of the employer's contribution is not entirely clear. Cross section studies of the relative factor shares of labour and capital suggest that if the labour supply is inelastic then the payroll tax is borne by labour (Brittain (1971) Vroman (1974)) but such studies do not distinguish between backward shifting (lower wages) and forward shifting (higher prices). Time series studies (Leuthold (1975) Hamermesh (1979)) using US data indicate that only part of the employer's contribution is shifted onto wages but do not investigate whether the remaining contribution comes from higher prices or reduced profits. However, there is no direct evidence to suggest that the employer's contribution is paid out of profits in anything but the very short run, and it is unlikely that a general tax on labour would be borne by capital. In the long run, the employer's contribution appears to affect either wages or prices. Because of the lack of conclusive evidence, both backward shifting of the increased employer's contribution and forward shifting will be examined. In most sectors of the labour market the outcome will be some intermediate position and influenced by labour market imperfections.

In either case, the important variables affecting the response of labour are the marginal tax rates (given in tables 4 and 5) and the average tax rates (graphed in figures 1 and 2).[5] Marginal tax rates affect the substitution between work and leisure; when the total tax paid is held constant, increased marginal tax rates provide an incentive to substitute leisure work and vice versa. Average tax rates determine the income effect in the labour/leisure trade off; higher average tax rates, with marginal tax

rates held constant, provide an increased incentive to work in order to maintain income. If the employer's contribution results in a general price increase, this reduces the real value of wages and acts in a similar manner to an increase in average tax rates.

3.3 The full backward shifting of contributions : labour supply and other effects.

The most straightforward case to examine is when the employer's contribution is borne by the employee (full backward shifting). In this situation, the tax changes outlined in section 2 represent, in part, an increase in tax on labour income, but mainly a redistribution of the tax burden between different income groups. The increase in the "tax-take" from labour income arises because the income tax reduction also benefits those in receipt of investment income, whereas the National Insurance contribution is levied only on labour income. However, the main effect of the tax changes will be to increase the contribution made by the lower paid and to reduce the contribution made by middle and upper income groups (see figure 2).

Studies on the effects of tax changes on the economy have tended to concentrate on aggregate variables.[6] Empirical estimates of income and substitution effects suggest that the net effect of income taxes on the aggregate labour supply is small. In this case, the change in the distribution of the tax burden between investment income and labour income is also small and, therefore, the incentive for households to increase saving and reduce their supply of labour is unlikely to have much effect.

The redistribution of the tax burden between income groups is much more significant but the effects, both in terms of the decision to

participate in the labour market and the decision about the level of labour supply once in the labour force, are more difficult to determine. Estimates of aggregate income and substitution effects provide no guide to the way in which different parts of the labour market may respond to changes in the tax burden. A few studies have looked at particular groups of workers, mainly the professional self-employed, (Brown (1980), Godfrey (1975)), but there is no systematic body of evidence concerning the labour supply responses of different income groups. The situation is also complicated by the fact that institutional arrangements may make marginal adjustments difficult for individual workers. Throughout the analysis here, it will be assumed that such changes will take place, eventually, perhaps through negotiated changes in working hours and other institutional arrangements, and a qualitative assessment of labour supply responses will be presented.

The redistribution of the tax burden results in higher average tax rates for the lower paid and the lower average tax rates for the higher paid under all the schemes outlined in section 2. The increase in average tax rates declines as income increases with the "break-even" point depending on the particular plan and the size of the individual's personal income tax allowance. For a single person, higher average tax rates apply to incomes up to approximately £200 per week under plan A and up to approximately £300 per week under plan B. Employees paying National Insurance but whose income is less than their personal income tax allowance would also face higher marginal tax rates. For everyone else, the marginal tax rates are either lower or the same.

The tax changes for the lowest income groups reduce the differential between employment income and state benefit payments and may provide an

incentive for some to leave the labour force and join the ranks of the unemployed. Otherwise, the higher average tax rates provide an incentive to increase the supply of labour and this income effect is likely to be strong where income is already low. This may offset the negative incentive of the higher marginal tax rates faced by the lowest paid. For employees facing higher average tax rates and lower marginal tax rates, there is an unambiguous incentive to increase their supply of labour. This will be the case for many earning below average incomes, depending on their personal circumstances and on the particular plan adopted. Middle income groups and higher rate tax payers face lower average tax rates and lower marginal tax rates. These two factors have opposite effects on the supply of labour and the eventual outcome depends on the relative strength of the two effects.

The short run effect of the tax changes would increase the supply of labour from some lower income groups, often in relatively unskilled jobs, and the supply of labour from more highly paid (skilled) workers may fall. The lower paid would have to accept lower real wage rates or higher unemployment, either in terms of numbers unemployed or through working shorter hours than they desire. A reduction in the supply of labour from skilled workers would result in higher wage rates. These changes would exacerbate the regressive effect of the tax changes on the post-tax distribution of income.

It is often asserted that high marginal tax rates, in upper income ranges, are a disincentive to seeking promotion and acquiring skills. The tax changes may, in the long run, reduce this disincentive and those in lower income groups may obtain additional skills and move to higher paid jobs. This may be desirable but the adjustment period is likely to be very long.

Whilst the direct effects of the tax changes may reduce the supply of labour in some sectors and increase it in others, aggregate employment may be affected in another way. The lower paid have a higher marginal propensity to consume out of income and, therefore, the redistribution of post-tax income from the lower paid to the higher paid will reduce aggregate consumption. This may be offset by increased investment, stimulated by higher savings, but only after a period of time. There will be at least a temporary decline in aggregate demand, accompanied by a reduction in the level of economic activity and higher unemployment. A further factor is that increased disposable income in higher income groups is more likely to be spent on imported goods.

3.4 The full forward shifting of contributions : economic effects

The next case to consider is when the employer's contribution is shift forward onto prices. Plan B did not involve any increase in the employers' contribution and, therefore, the effects of the tax changes for the employee are similar to those already outlined above. The remaining discussion will concentrate on plan A.

The apparent effect for employees is that the majority have a reduction in their average tax rates. Those earning more than £38 per week but less than approximately £60 per week (if single) have higher average tax rates and an incentive either to increase their supply of labour or to drop out of the labour market altogether. Marginal tax rates are higher for those paying National Insurance contributions but earning less than their personal income tax allowance. All other groups have lower marginal tax rates.

This pattern is similar to that discussed for the previous case but the apparent reduction in average tax rates is much greater than under the backward shifting hypothesis because of the shifting of part of the tax burden from income tax to the employers' contribution. Therefore, there will be a stronger income effect, reducing the incentive to work. However, the effect of price increases still has to be taken into account. A general increase in the price level reduces the real value of wages (and also other forms of income such as profits and pensions)[7] and this will reduce the effect of lower average tax rates and increase the burden on the low income groups, with higher average tax rates. Price increases will vary for different goods, according to the proportion of production costs attributable to labour inputs, but the effect will be similar across all income groups unless different groups consume different proportions of labour intensive and capital intensive products.

The effect on the supply of labour will be similar to those discussed for the case of backward shifting of the employer's contribution, but will differ in their extent. However, the effects on the demand for labour may be more pronounced. The redistributive effect of the tax changes will again produce at least a temporary reduction in aggregate demand. There will also be a decline in real demand from those on fixed incomes facing higher prices. Higher prices may also make domestic products less competitive against foreign goods, if the change in the price level is not reflected in an adjustment of exchange rates. The overall reduction in demand will result in a lower demand for labour and higher unemployment. An additional source of change in the demand for labour is the possibility of increased substitution of capital for labour.

(4) Overview

4.1 Economic problems associated with the switch to social insurance

The main effects of tax changes can be summarised as: first, a regressive redistribution of post-tax income, second, an increase in the supply of labour from some low income groups and possibly a reduction in the supply of labour from higher income groups, third, a reduction in aggregate demand, fourth, a decline in the demand for labour and, finally, if forward shifting is assumed, a higher price level. Apart from the tax changes, detailed in section 2, these are qualitative results and the size of the effects will vary according to the precise nature of the new tax schedule and the degree of forward or backward shifting of the employers' contributions.

The regressive nature of the payroll tax is only a problem if the achievement of a more equal distribution of income is also a policy goal. In this case, the adverse effect of the tax could be offset by additional changes, such as applying personal tax allowances to National Insurance contributions, abolishing the upper income limit, or extending the progressive contribution rates. However, these changes would increase the similarity between National Insurance contributions and income tax whilst such changes might deny the economic logic of making a switch in the method of raising revenue. However, such changes may also increase the administrative cost of collecting National Insurance contributions.

The policy implications of the employment effects depend on the view taken of the future pattern of employment. The present trend seems to be towards shorter working hours and even job sharing. Marginal reductions in the supply of labour from individual employees might be beneficial, therefore, and could create jobs for those involuntarily unemployed.

However, if skilled labour is in short supply there would be difficulties at least in the short run. Similarly, low income groups wanting to work longer hours could raise problems if the economy cannot easily provide extra work for the relatively unskilled. It should also be noted that if the employer does bear any part of the additional contributions, then the relative cost of unskilled labour and part-time labour is increased in comparison with skilled and full-time labour earning above the income ceiling. This may have significant adverse implications for government policies to assist job creation, particularly for female employees with part-time jobs.

The effects on aggregate demand and the demand for labour make this problem more serious. A fast growing economy might absorb a short run decline without major difficulties, especially if the changes were phased in over a period of time. However, the present economic recovery in Britain might not survive these depressing influences, particularly if they induce pessimism amongst employers, who subsequently invest less because of their changed future expectations.

The increase in the price level could also have sustained effects on the economy. It is often argued by policy-makers that "one-off" price increases, such as those caused by tax changes, "work themselves out of the economy". All this means is that the direct impact on annual inflation figures disappears. The effect on the price level is permanent and, therefore, if there is any deleterious effect on the competitiveness of domestic production then this will be difficult to recover. In addition, the inflationary effect of the price increases may affect employee expectations and lead to increased wage demands during the following year. These effects may be exacerbated if employees treat any gains from the tax

changes as a "windfall" and ignore them in negotiating pay increases.

From this qualitative analysis, it is clear that the change in the tax system would create new or exacerbate old problems in economic policy. On the other hand, it is not at all certain that the new funding arrangements for the NHS would be particularly advantageous. If the level of employment did fall as a result of the tax changes, then the revenue collected from National Insurance contributions would fall short of the original target. However, the outcome of the proposed tax changes might prove more beneficial if employees perceive income tax and an earmarked NHS contribution differently. If the health service contribution is paid willingly, on the basis that the benefits are known, whereas income tax is resented, then employees may feel themselves to be better off under the new system, even if they are paying the same amount. This proposition is not easily tested, but such an effect would have to be strong and widespread to justify the new system of finance.

4.2 Social insurance and increased health care expenditure

The discussion thus far has been concerned with the use of insurance funding to finance the present level of NHS activity. However, it is implicit in the current debate that alternative methods of funding the NHS could generate <u>additional</u> finance and enable a higher level of service to be provided. This tends to be asserted as an advantage of insurance funding but little or no evidence is produced to substantiate this view.

It is certainly true that other European countries who have social insurance funded health care systems spend a higher percentage of their national income on health care. This is not a result of the insurance

funding, but because they have no system of overall control on provision and expenditure, such as the cash limited budgeting which is used in the NHS. Once again, it must be emphasised that the issues of funding and provision are separate aspects of the current debate and need to be tackled separately.

The real question to examine, therefore, is whether a change to social insurance funding of the NHS would be accompanied by either more generous cash-limits or complete abandonment of cash-limits in favour of a demand led system such as operates in other countries. In the first case, higher cash limits would involve higher insurance contributions. These would have similar effects on the national economy to increases in income tax, although the distribution of the increase between income groups may be different. However, as the major argument for not increasing the present tax funding of the NHS appears to be that the government gives priority to stimulating the economy through income tax cuts, it would be reasonable to assume that there would be a similar degree of opposition to increasing social insurance contributions.

The abolition of cash-limits could imply not only higher social insurance contributions but also uncertainty about the increase required each year. This would be even more unlikely to find favour with the UK Treasury. The only circumstances in which either change might be acceptable would be if the incentive effect of such an earmarked tax could be demonstrated to be different from general taxation and, as stated earlier, that would be a difficult proposition to test.

4.3 The method of health care finance is not the relevant issues.

The perceived problem of the NHS is that the level of service activity

provided is too low. Changing the method of funding the NHS does not address this issue. If a consensus could be achieved on the level of provision then tax funding is at least as good a way of financing the service as any other and has the advantage that the effects on the economy would be more predictable. The discussion of financing serves only to distract attention from the question of how to attempt to achieve consensus over the level and nature of provision. From the economic viewpoint, the answer is that services should be provided to the point where the value of the benefits (improvements in health measured in terms of enhanced duration and quality of life resulting from treatment) just equals the costs. This immediately focuses attention on the need to know what the benefits of various health service activities are, as most of them have never been measured, let alone valued and costed. Whatever the difficulties that proper economic evaluation of competing health care therapies may pose, this approach offers a positive way forward which compares favourably with the blind alleys of the financing debate.

Notes

1. Non-manual employees can "contract-out" when they are first captured by the social insurance scheme, i.e. they can opt to take out private insurance instead of joining the public scheme, but some form of insurance is compulsory. The employers pay half the private contribution for contracted-out employees. Please note that throughout the paper the terms National Insurance and social insurance are used on an equivalent basis.

2. As many benefits are paid out by the National Insurance Fund, it is just as likely that the full costs would be met from this source, either by direct crediting of contributions or by paying increased benefits from which health insurance contributions would be deducted.

3. A similar exercise was carried out for the case of the married person, but the results are not presented here. The shape of the curves was very similar to that of the single person case, but the effect of the larger tax-free allowance was to shift the curves to the right and down, i.e. the average tax rates were lower throughout than for the single person. In all cases, the intersection of the curves representing the planned situations with the curve representing the actual situation occurred at a higher level of income than in the corresponding case for the single person.

4. The effects of the tax changes on different income groups will be discussed, however.

5. This assumes that employees understand the changes in the tax system and can make an optimal response. Whilst employees know how much tax they pay, they may be less certain about their marginal rate of taxation. The response to changes in the average tax rate may be more predictable, therefore, than the response to changes in the marginal tax rate.

6. For reviews of the existing evidence on labour-supply effects see Godfrey (1975) and Brown (1980).

7. The reduction in the value of investment income because of price increase will be offset by the benefits of income tax reduction. The same is not true for those in receipt of tax free welfare benefits.

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