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**DESIGNING AND COSTING SIMPLE BASIC INCOME SCHEMES**

by

**Anne G Miller**

(anniemiller1@tiscali.co.uk)

**ABSTRACT:**

The objective of the first part of this paper is to present a compact summary of the information necessary to calculate the flat-rate personal income tax required to finance a specified simple Basic Income scheme in a meaningful way, (see Table 1). The text refers to the assumptions made, and the data sources available in the UK (population figures, - for children, working age adults and pensioners, GDP and the sum of all incomes in the UK from all sources). Conversely, given a maximum acceptable rate of personal income tax, the maximum possible rates for BIs can be calculated.

In the second part, in a similar way I calculate the increase in the personal income tax rate that would be necessary to finance a Full Basic Income for those whom society should not expect to have to find paid work to top up a Partial BI, although they would not be prevented from working if they wished to do so. Pensioners have already been accounted for in the first part, but now we include those with disabilities together with a designated carer, single parents and other parents-with-care. I assume that the costs of disability would be awarded separately from the BI.

Lastly, I examine the case for and against a lower or zero rate of taxation for those on partial BIs, until their incomes have caught up with the net incomes of those receiving the full BI, at which point on the income scale, all would be paying the same income tax rate. All cases are illustrated using data from the UK.

**Disclaimer:** although I am currently the Chair of the Citizen's Income Trust, the views expressed here are my own personal views and are not necessarily those of the CIT.

The beginning of this paper draws heavily on my article "Assumptions and Calculations for a Simple Citizen's Income Scheme", published in **The Citizen's Income Newsletter** in the first edition of 2006. The terms Citizen's Income and Basic Income are used interchangeably.

Current **exchange rates** are roughly: £1 = €1.2 = \$2

Much of the data refers to 2006, when the exchange rate was roughly £1 = €1.5

My estimates are calculated to 5 significant figures.

## **PART 1: A SUMMARY OF THE INFORMATION NECESSARY TO CALCULATE A PERSONAL INCOME TAX TO FINANCE A BASIC INCOME SCHEME**

**My objectives for the BI scheme are:**

- To design a very simple, transparent and accountable system.
- To reduce the need for means-testing, which leads to a reduced take-up of the benefit. Means-testing also has a built-in disincentive-to-work for those coming off benefits into work, who are caught by both income tax and benefit withdrawal rates, giving a high combined effective marginal tax rate. Those on Child Tax Credit or Working Tax Credit in the UK, are subjected to an effective marginal tax rate of 68%, (20 % income tax, 11 % National Insurance contribution, 37 % CTC and WTC taper rate), which is higher than the highest rate of tax (40 % income tax plus 1 % of National Insurance contribution), paid by high-income earners.
- Eligibility is to be based on residency or domicile.
- For the individual to be the tax and benefit unit.
- To minimise the degree of contingency associated with the BIs, (for instance, differences in the level of the BI on account of age are regarded as acceptable in BI schemes, but the amount of the BI will be independent of marital status, domestic arrangements or sexual preferences). It is designed specifically not to take circumstances into account. This should reduce the complexity, improve the efficiency and reduce the costs, of administering the system.

Although the BI and personal income tax systems will be co-ordinated, they will be operated separately, with the BI paid out to individuals, and the tax collected separately. (This makes all of us both BI recipients and potential taxpayers). Instead of assessing the incomes of some individuals twice, once for means-tested benefits and again for income tax, as at present, each will be assessed once only, for income tax. This also should both improve the efficiency and reduce the costs of administering the system.

### **ASSUMPTION 1.**

The BI should reflect the prosperity of the UK, and I have chosen for it to be related to GDP per capita, rather than the more nebulous figure for ‘annual average earnings’ or even ‘median income’. GDP per capita seems to reflect the prosperity of the whole country. A fixed proportion of GDP per capita also has the advantage that it will provide a stabilising influence on economic cycles.

BI levels for the tax year 2008-09, have to be determined in the preceding months, using the latest information available, which is the figure for GDP per capita for 2006 in the *United Kingdom National Accounts, The Blue Book, 2007* edition, published by the Office of National Statistics, ONS, in the summer of 2007. There will be roughly a fifteen-month gap between the end of the year to which the GDP figure applies and the tax year in which the BIs determined by it are paid out.

The relevant figures for 2006, from *Blue Book 2007*, Tables 1.2 and 1.5 are:

GDP (output method) at current market prices	YBHA,	£1 299 622 m
UK home population	DYAY,	60 533 000
GDP per capita	IHXT,	£ 21 469

The four letter labels are the reference codes used by the ONS.  
Some further figures for population are available in Appendix A below.

## **ASSUMPTION 2.**

The Basic Income scheme will be financed out of personal income tax revenues.

I assume this for three reasons.

- a) In 2006, the expenditure by the government on social benefits in cash at £146,159m is of the same order of magnitude as taxes on income, £176,962m, which implies that government expenditure can be financed out of the rest of taxation. (See Appendices B and C).
- b) The benefit system and the tax system are two faces of the same coin, and paying for the BI out of a hypothecated personal income tax system is a very effective method of reducing income inequality.
- c) Whether or not a future government chooses such a system in practice, it is convenient to work with a hypothecated arrangement, in order to illustrate the feasibility of the scheme more clearly.

## **ASSUMPTION 3. THE PERSONAL INCOME TAX SYSTEM: RECLAIMING THE TAX BASE**

The personal income tax system will have the following properties:

1. National insurance contributions will be subsumed into the income tax system.
2. All of an individual's taxable income, from all sources, will be treated in the same way for income tax purposes;

An individual's **taxable income** is defined as gross income *less* any allowable **essential** expenses incurred in the generation of that income, from all sources, but before receiving their BI, and other government transfers such as housing benefit, or the benefits to cover the costs of a recipient's disability.

Sources of income include:

- EARNINGS (from full-time and part-time employment)
- EARNINGS from SELF-employment
- SHARE SCHEMES and OPTIONS, (free or cheaply from one's employer)
- COMPANY PERQUISITES (such as a company car, private medical insurance, fringe benefits, commission, tips, part-time free-lance earnings)
- PENSIONS, occupational and personal
- INTEREST from banks and building societies
- DIVIDENDS
- CAPITAL GAINS on the sale of shares and other assets
- RENTAL income from properties
- GIFTS.

3. No other tax reliefs, personal allowances, or exemptions will be granted,

It is important that there are no exceptions, however apparently laudable, because, whilst they appear to benefit middle-income people to a modest extent, wealthy people find ways to exploit them much more fully. Thus tax reliefs are the thin end of the wedge of an ever-increasing raft of hidden tax expenditures, which erode the **tax base** and lead to a higher standard tax rate being imposed on the majority who cannot avoid the tax. The withdrawal of all tax reliefs, personal allowances and exemptions allows the tax base to be reclaimed. The case for restoring any particular concession would have to be argued from scratch and claimed as a visible benefit, rather than an invisible tax expenditure.

Some of the tax reliefs in the past have been given with laudable aims, such as the tax reliefs on charitable donations. Charities rely on this extra subsidy from government, but it is recommended here that it could be given as a direct subsidy to each charity as a proportion, say 20 or 25 %, of all of its donations received, rather than relating them to the incomes of some tax-paying individuals.

Tax relief on pensions and superannuation contributions were given to encourage people to provide for their old age, which was thought to be absolutely essential for the future financial health of our senior citizens. However, with a reasonable Citizen's Pension, indexed to GDP per head, this would not have the same urgency, although individuals could still contribute to private schemes if they wished, but without the current subsidies, which are massive. The UK government has been exhorting the population to save for its old age, but the fall in the stock market, and the withdrawal of many company occupational pension schemes has left people with much uncertainty, which a Citizen's Pension would go some way to ameliorate. There is popular support from various pensions organisations for such a move. A Citizen's Pension could provide the foundation in a portfolio of pensions. It is far more important to make this foundation as adequate as possible for all, rather than to subsidise the private pensions of those who are already better off.

4. The standard rate of income tax will be that required to finance a CI scheme, together with most of the other benefits in cash that will still be necessary, including a residual welfare system for those who do not qualify for a CI, etc, but these can be supplemented out of a higher rate of tax.

#### ASSUMPTION 4.

The 'Total Resources of Households and Non-Profit Institutions Serving Households, NPISHs', which is the sum of all gross personal incomes from all sources, is roughly 80% of GDP.

	HOUSEHOLD INCOMES	GDP	HOUSEHOLD <u>INCOMES</u>
	QWMF	YBHA	GDP
<b>2003</b>	876 473	1 099 896	0.79687
<b>2004</b>	922 837	1 164 439	0.79252
<b>2005</b>	983 670	1 224 715	0.80318
<b>2006</b>	1 032 978	1 299 622	0.79483

Source: *The Blue Book* 2004, 2005, 2006 and 2007, Tables 1.2 and 6.1.3.

The sources of the difference between GDP at market prices, YBHA, £1 299 622 m. in 2006, and Total Resources, of Households and NPISHs, QWMF, £1 032 978 m. can be discovered by a comparison of Table 1.2 (income component method), and Table 6.1.3, and is accounted for as follows:

The difference between the Operating Surpluses (profits) of Corporations, (NRJT + NRJK + NQNV – NSRV) and the Property Income of Households and NPISHs, QWME, (which includes interest, dividend payments and rent), yields £93 116 m, which will include retained earnings

Gross operating surplus of general government, NMXV, is £13 650 m

Taxes on production and imports, NZGX, less subsidies, -AAXS, giving a sum of £159 691 m

A statistical discrepancy, RVFC between the income components method of estimating GDP at market prices and the output components method, YBHA, (which is the official GDP at market prices), accounts for -£551 m

Payments to, less receipts from, the rest of the world, -KTMP, £738 m.

## ASSUMPTION 5. THE BASIC INCOME SCHEME.

For the purpose of this paper, I am ignoring the endogenous changes in behaviour, such as changes to wages and work patterns that are likely to accompany the implementation of, or changes in, BI schemes.

GDP per capita in 2006 was £21 469 pa, or, (dividing by 365 and multiplying by 7), £411.73 pw, representing 100 % of GDP per capita. Similarly, ‘Total Resources, of Households & NPISHs’ were £1032 978m in 2006, (Blue Book, chapter 6), divided by population of 60 533 000, yields £17 064 pa, or £327.27 pw. In order to simplify the arithmetic, for the purposes of the exercise in this paper, I shall round these figures down to £20 800 pa (£400 pw), and £16 640 pa (£320 pw) respectively, also assuming that 52 weeks make 1 year.

‘Total resources of NPISHs’ is in fact the key figure in the UK, because it represents the potential tax base for total personal income for the country. It has no official shortened name, but for the rest of this paper I shall refer to it as the **SUM OF INCOMES**. While GDP per capita is my main method for comparing BIs of different countries, from now on in this paper, the reference figure for proposing and measuring BIs will be ‘Total resources of Households & non-profit Institutions Serving Households, NPISHs **Per Capita**’, that is the mean or average gross personal income, and this will be referred to as **YBAR**. If a scheme is proposed where every man, woman and child receives a BI as a proportion  $b$  of GDP per capita, then the relevant figure for YBAR is  $b / 0.8$ . If  $b = 0.24$ , then  $b / 0.8 = 0.3$ , and BI = £4,992 pa or £96 per week, and the straight line personal income tax rate to finance such a scheme would be  $t = 0.30$  (30 %).

In Basic Income schemes, the level of the BI is independent of gender, marital status, sexual preferences, work requirements, and does not vary with other circumstances. The only variation that is tolerated is a variation by age, usually with more for the elderly and less for children.

Let us consider an example of a BI scheme with three levels, of 20%, 30% and 40% of YBAR, for ages 0-15, 16-64, and 65-and-over. These will be referred to as a Child Basic Income, CBI, Partial Basic Income, PBI, and Full Basic Income, FBI. See Table 1.

This is a partial basic income scheme, because it recognises that few adults would be able to live comfortably on the SBI of £96 pw alone, but it assumes that able-bodied people would be able to find at least a few hours of work each week, given a minimum wage scheme, in order to top up their incomes.

In order to calculate the personal income tax rate required to finance this scheme, one requires some

population figures, for the young and old age groups. Mid-year population estimates for 2006 were obtained via [www.statistics.gov.uk/Statbase/Expodata/Product.asp?vlnk=15106](http://www.statistics.gov.uk/Statbase/Expodata/Product.asp?vlnk=15106).

**TABLE 1. SUMMARY OF THE INFORMATION REQUIRED TO ESTIMATE THE PERSONAL INCOME TAX RATE WHICH COULD FINANCE A BASIC INCOME SCHEME**

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Col.8 = col.3 x col.4
	Population, UK*, 2006, 000s	Proportion of population	Proportion of average gross income, 2006	Proportion of GDP*** per capita, 2006	BI £ pa	BI £ pw	Cost of BI in terms of income tax rates
TOTALS	60,587.3	1.0000	1.00	0.80	(YBAR pa = £16,640)**	(YBAR pw = £320)**	1.00000
People aged 65 +	9,687.9	0.1599	0.40	0.32	£ 6,656	£128	0.06396
People, aged 16-64	39,362.3	0.6497	0.30	0.24	£ 4,992	£ 96	0.19491
Children, aged 0-15	11,537.1	0.1904	0.20	0.16	£ 3,328	£ 64	0.03808
						TOTAL	0.29695
			Add	Margin for	admin. safety	costs & -net, etc.	+ 0.02305
				TOTAL	INCOME	TAX	0.32

Note: \* Mid-year population estimates were obtained from:

[www.statistics.gov.uk/Statbase/Expodata/Product.asp?vlnk=15106](http://www.statistics.gov.uk/Statbase/Expodata/Product.asp?vlnk=15106).

\*\* 'Total Resources of Households and Non-Profit Institutions Serving Households', 2006, (QWMF), = £1 032 978 m.

Thus, average gross income (YBAR) = £17 064 pa = £327.27 pw,  
which has been simplified to £16 640 pa = £320 pw.

\*\*\*GDP (output method) at market prices, 2006, (YBHA) = £1 299 622m  
(Sources: *Blue Book 2007*, Tables 1.5 & 6.1.3)

GDP per capita, 2006, (IHXT) = £21 469 pa = £411.73 pw,  
which has been simplified to £20 800 pa = £400 pw.

Table 1 draws together all the information necessary to estimate the personal income tax rate to finance each component of the BI scheme and then sums them to give a total cost of the BI scheme, which is also the same proportion of YBAR. This total personal income tax rate will have to be augmented to allow for the administration and compliance costs of the system, and any extra benefits in cash that may be required.

There must be enough additional revenue to finance:

- the **costs of disabilities**, including the costs of their care, including residential care, special equipment, mobility, extra fuel or laundry costs or special diets, etc. and
- a **social fund** for those with emergencies, such as fire or flood, (which in 2006 cost £2 274m), and
- a **redundancy fund**, (which in 2006 totalled £200 m.).

A **residual safety net** will also be required:

- for those who are still in poverty (despite the BI scheme), operated mainly through a **housing benefit** and **council tax benefit** scheme for those with no other income, and
- for those who do not meet the residency or domicile criteria to qualify for a BI, as well as
- a **residual National Insurance scheme** for those who will still be entitled to National Insurance benefits, such as SERPS, (the State Earnings Related Pension), Non Contracted Out Pensions, S2P pensions and UK pensioners living overseas,

(National Insurance benefits to overseas residents in 2006 totalled £1,676 m. and other benefits paid to overseas residents in cash in 2006 came to £48 m, (See Appendix C)).

There must also be enough to cover the **grants replacing those tax expenditures** for which a case is justified, (such as charitable-giving, for instance).

Adding a further 2.305 % to income tax, to cover these extras costs, brings income tax to 32 %, which is midway between the previous rate applying until April 2008 of 22 % plus 11 % for national insurance contributions, and the rate applying since April 2008 of 20% plus 11 % for national insurance contributions. This would have yielded an extra £23 238 m, ( $0.02305 \times 60\,587\,300 \times £16\,640$  in 2006). Thus, a simple, partial BI scheme could be financed out of a personal income tax system with a standard rate of tax of 32 %.

\* \* \* \* \*

## PART 2: IDENTIFYING VULNERABLE ADULTS

Some of the early debates about BI were to do with whether, on the one hand, the scheme should be based on a flat rate payout, which was not guaranteed to meet anyone's needs, and, on the other, one which tried to meet needs, but which inevitably would have to take some circumstances into account, and become complex. In the first, a BI which is not guaranteed to meet the basic needs of a single able-bodied person of working age, 16 – 64, is called a **partial BI**. It assumes that even an unskilled person can augment their BI with at least some part-time work at a minimum wage rate sufficient to meet his/her basic needs. Whether this assumption is true is a question that should be kept in mind. A scheme that tried to meet the basic needs of everyone, even including the able-bodied single person of working age, is called a **full BI**, and is often considered too costly to implement, and it has been thought that it might discourage too many people from working.

A humane society would recognise that some of its members should not be required to undertake paid work to augment their BIs. One can identify three groups of people who are most vulnerable.

**Pensioners**, aged 65 and over,  
**People with disabilities or who are chronically ill**, of all ages, and  
**Children**.

However, it should not be forgotten, that many people with disabilities and chronic illness require **carers**, and children need a **parent-with-care**.

Each of these groups will be considered in turn, together with the necessary augmentations to meet their needs. The result may not necessarily be in full keeping with a pure BI scheme, but that is less important than being humane.

### **PENSIONERS, AGED 65 AND OVER.**

BI schemes do not vary by gender, marital status, sexual preference, household configuration or other domestic arrangements, paid work status, willingness to work or to search for a job. However, they do allow for variation by age, usually with children receiving less than the standard BI and older people receiving more. It is debatable whether this enhanced BI is on account of older people having higher expenditures as they get older, or if it is because even healthy active senior citizens are not required to continue to work to augment a standard BI. Given that most BI schemes usually assume that the costs of disability will be paid in addition to the BI, the latter reason would appear to be true, already breaking the rule that 'variations, such as a not-required-to-work-for-pay status' are not permitted in pure BI schemes'. With this principle already admitted, it becomes a matter of making sure that the full BI will meet the living costs of all but a tiny minority of them.

### **PEOPLE WITH DISABILITIES OR WHO ARE CHRONICALLY ILL, OF ALL AGES, AND THEIR CARERS.**

We need to consider:

the cost of a **Full BI for people with disabilities or chronic illnesses**, which will cover their ordinary living expenses, plus  
the **Costs associated with disability**, including their costs of care, mobility, extra heating, special diets, extra laundry costs, and special equipment, etc. plus the case for a **Full BI for a nominated carer**.

BI schemes usually assume that the costs of disability or infirmity will be paid in addition to the standard or Partial BI. However, it is not explicitly recognised that the standard or partial BI will be insufficient to meet the basic living expenses of even an able-bodied, single, person of working age, let alone a person of working age with a disability or chronic illness, and that there will be a shortfall in his/her income. It seems inconsistent to meet the one but not the other. This can be rectified by granting a full BI to working-age people with disabilities or chronic illnesses, so that his/her normal living costs for food, shelter, heating, clothing, leisure, etc, can be met, whether or not s/he chooses to work for pay. It will be assumed that the same level of enhanced BI will meet the basic needs of both those with disabilities and for pensioners

The costs of care can be a contentious issue. Even if the cost of 24 hour care is granted to those who need it, and a person with physical disabilities is able to disburse it to pay for round-the-clock care, there is always the question whether a spouse or other family member living with the person should also receive a full BI. On the one hand, the person with disabilities should be able to pay a spouse or other family members for any care that they give, thus the carer has a means of augmenting his/her income through care work in the home. On the other, the carer may find that the person with disability does not want to have carers from outside the family to do the caring, and yet does not see why they should have to pay a family member for care, believing it to be their due without payment, and keep the costs granted for constant care for him/herself. Even when round-the-clock care is paid for, there



are always those times when an outside carer is ill and cannot come, or is on holiday, and in the event, it is the family member who has to deal with the emergencies that arise. This debate, between organisations for those with disabilities and for carers, should be examined to help one to come to a conclusion, but for the moment I am assuming that a family or household member of the disabled person's choice will be designated carer and receive an enhanced BI. A BI scheme which offers an enhanced level to some on account of their caring responsibilities is no longer a pure BI scheme, but a hybrid.

Of course, children with disabilities or chronic illnesses would receive their costs of disability in the same way as for adults.

If a person is suffering from mental impairment, I am assuming that a *curator bonus*, or 'receiver' will be appointed, (sanctioned by the courts), who will administer their BI and costs of disability for them.

There are 5.5 million people of working age with disabilities or long-term health conditions. Fifty percent of them are in paid work and another one million would like to work.

There are 6 million people in the UK who give unpaid care for a family member of a friend. Of these, 45% are in the age bracket 45–64. A further 114,000 carers (2%) are aged between 5 and 15. Of the remainder, roughly half are over 64 and half are under 45, ie 26.5% in each group. (Source: [www.northamptonshire.gov.uk/adults/disabilities/EADS/facts.htm](http://www.northamptonshire.gov.uk/adults/disabilities/EADS/facts.htm))

## **CHILDREN AND PARENTS-WITH-CARE.**

The cost of raising a child includes food, clothing, equipment such as prams, extra accommodation and furniture such as cots and beds, leisure activities and hobbies, pocket money, holidays, transport, books, etc. However, by far the largest cost is that of childcare, whether carried out by a parent, another family member, a paid childminder or a nursery school nurse. The main question that we will address here is how a BI scheme can ensure that the parent-with-care has enough to live on while caring for one or more children. In each of these methods, it is assumed that the parent-with-care is the **mother**, who will administer her dependent child's BI, just as with Child Benefit currently in the UK, although widowed fathers, and those granted custody by the courts, would usually be designated as parent-with-care. The Child's BI continues to be his/her income, not the parent's. In the UK, children are entitled to separate assessment, etc. for income tax. While a BI scheme is a necessary condition for the good society, it is not sufficient by itself, and there will still be a need for the public provision of childcare facilities, such as nurseries and after-school and holiday clubs.

Three methods of dealing with the childcare element will be discussed here:

- (i) Children and adults aged 16-64 all receive the same standard partial BI
- (ii) A full BI would be provided for the parent-with-care, and a CBI for each child
- (iii) The parent with care would receive the standard partial BI, and each child a CBI, and the costs of childcare would be awarded separately from partial BIs and CBIs.

(i) A pure BI scheme might give exactly **the same BI to both children and all working-age able-bodied adults**. The parent-with-care will receive her own standard BI and the same for each of her dependent children, aged 0 – 15. In the illustrative scheme in part 1 above, the partial BI is 0.3 of YBAR, is £96 pw, and the Child BI is 0.2 YBAR, or £64 pw. Upgrading children to the partial BI would add an extra 0.019 (children, representing 0.19 of the population, would receive an extra 0.1 of YBAR) to the income tax rate.

**TABLE 2 SUMMARY OF THE INFORMATION REQUIRED TO ESTIMATE THE PERSONAL INCOME TAX RATE WHICH COULD FINANCE A BASIC INCOME SCHEME, SHOWING THE EXTRA COSTS OF FULL BI'S FOR SOME.**

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Col. 8 = col. 3 x col. 4
	Population, UK*, 2006, 000s	Proportion of population	Proport- ion of average gross inc- ome, 2006	Proportion of GDP *** per capita, 2006	BI £ pa	BI £ pw	Cost of BI in terms of income tax rates
TOTALS	60,587.3	1.0000	1.00	0.80	(YBAR pa = £16,640) **	(YBAR pw = £320) **	1.00000
Total population	60,587.3	1.0000	0.30	0.24	£ 4,992	£ 96	0.30000
People aged 65 +	9,687.9	0.1599	+ 0.10	+ 0.08	+£ 1,664	+ £ 32	+ 0.01599
People, aged 16-64 with disabilities,	c. 5,500.0	0.0908	+ 0.10	+ 0.08	+£ 1,664	+ £ 32	+ 0.00908
Carers, aged 16-64	c. 4,290.0	0.0708	+ 0.10	+ 0.08	+£1,664	+ £ 32	+ 0.00708
Lone parents & other parents-with- care, aged 16-64.	c. 6,800.0	0.1122	+ 0.10	+ 0.08	+£1,664	+ £ 32	+ 0.01122
Children, aged 0-15	11,537.1	0.1904	-- 0.10	-- 0.08	- £1,664	--£ 32	-- 0.01904
						TOTAL	0.32433
				Add Safety-net	margin admin.	for etc.	+ 0.02567
				TOTAL	INCOME	TAX	0.35

Note: \* Mid-year population estimates were obtained from:

[www.statistics.gov.uk/Statbase/Expodata/Product.asp?vlnk=15106](http://www.statistics.gov.uk/Statbase/Expodata/Product.asp?vlnk=15106).

\*\* 'Total Resources of Households and Non-Profit Institutions Serving Households', 2006,  
(QWMF), = £1 032 978 m.

Thus, average gross income (YBAR) = £17 064 pa = £327.27 pw,  
which has been simplified to £16 640 pa = £320 pw.

\*\*\*GDP (output method) at market prices, 2006, (YBHA) = £1 299 622m  
(Sources: *Blue Book 2007*, Tables 1.5 & 6.1.3)

GDP per capita, 2006, (IHXT) = £21 469 pa = £411.73 pw,  
which has been simplified to £20 800 pa = £400 pw.

(ii) A second method might be that of giving the parent-with-care an **enhanced BI**. This recognises the fact that the important role of raising children is hard work, both physically and emotionally, by not requiring her to have to augment a standard partial BI with outside paid work. She would not be prevented from taking paid employment if she wished, (as would be the same for pensioners, or for people with disabilities). By this method, in the illustrative scheme presented in part 1 above, she would receive £128 pw on her own behalf and £64 pw for each child. Given that there are roughly 6.8 million families in the UK, and therefore 6.8 million parents-with-care, it adds 0.01133 to the income tax rate ( $0.1133 \times 0.10$  of YBAR). If the parent-with-care has one dependent child, then under the figures suggested in part 1 above, she would receive the same, £192 pw, as for the method above, but for two children she gets less by this method. Despite this, I would favour this second method, because it acknowledges openly the role of the parent-with-care, while with method 1 above, it would be easy for a future government to reduce the CBI, ignoring the care element. This, too, would be a hybrid BI scheme.

(iii) The third approach would follow the method suggested for people with disabilities, where **the costs of care would follow each child**. Since this could vary by age, it might lend itself to becoming more complex and bureaucratic. It is a different matter tailoring a system for 12 million children aged 0 – 15, than for 5.5 million people with disabilities.

In all this discussion, what is important is to make sure that the needs of the most vulnerable people are met. These have been identified as elderly people, people with disabilities and chronic illnesses, carers, children, Lone parents and other parents-with-care, who often find themselves discriminated against in the labour market. Making sure that the living costs of a single parent are met, also ensures that those of the parent-with-care living in a two-adult household will also be catered for, but neither has to declare to the authorities when their circumstances change, getting rid of the distasteful and intrusive cohabitation rule. If it were thought likely that the actual level of a Child Basic Income affected the birth rate, then this would have to be taken into account when deciding the level.

The extra cost of granting these vulnerable members of society a full Basic Income is shown in **TABLE 2**. The table is calculated on the basis of everyone receiving the Partial Basic Income, PBI, and then adding on the extra cost of each group receiving the FBI, and deducting the shortfall on account of the Child Basic Income.

The total 0.32433 is the personal income tax required to finance this scheme, before allowing for administration and ‘safety net’ finances. The proportion of the population who would receive an enhanced or full BI is 0.4337.

## **BENCHMARKS**

While an example of a BI scheme has been put forward to illustrate the methods discussed above, it is important to see what benchmarks for the threshold of financial poverty have been used by the various agencies and academic institutions in the UK. These amounts represent what someone with no other income is expected to be able to live on, as decreed by different systems.

Some of the rates for the current main benefits, for the tax years 2007-2008 are given in Appendix D, most of which would disappear under the new scheme.

**TABLE 3**

Benchmarks	Single adult	single parent	child	disabled	Carer	Pensioner
Nat Ins 2008-09	£60.50 + hsg ben	£ 60.50 pw + hsg ben	£	£ 84.50 pw (Incap ben)		£ 90.70 pw (Pension)
Soc Security (MTBs) 2008-09	£ 60.50 pw + hsg ben	£ 60.50 pw + hsg ben	£ 58.90 pw (CTC+CB)	£ 67.00 pw (DLA)	£ 50.55 pw (carer's allowance)	£124.05 pw (Pension credit)
0.6 med inc 2008-09	£120.00 pw	£ 120.00 pw	£ 65.00 pw			
FBU: LCA April 2005	£145.95 pw	£ 145.95	+ £35.60 pw			£146.78 pw

FBU = Family Budget Unit at York University. [www.york.ac.uk/res/fbu/publications.htm](http://www.york.ac.uk/res/fbu/publications.htm).  
LCA = Low Cost but Acceptable.

\* \* \* \* \*

### **PART 3: PROPORTIONATE (FLAT-RATE) TAX VS PROGRESSIVE TAX SCHEMES.**

The first objective of the BI scheme put forward above, with FBI, PBI and CBI, is to ensure that the needs of vulnerable people are met, if they have no other source of income. However, this three-level BI scheme leads to the 3 groups having different net incomes over the whole range of their gross incomes, and it can be represented by three parallel lines on a graph of net income plotted against gross income. Does a pensioner, or a person with disabilities (whose costs of disability are met separately), or a parent-with-care, when s/he has a gross income of £25,000 pa really need to receive £1664 more in net income (ie. after receiving the FBI and having income tax deducted), than a single working-age adult? It could be argued that parents-with-care, at least, should be entitled to the extra in recognition of the extra work that they are doing, or to help to contribute to the costs of childcare while she is working.

The third part of this paper examines the advantages and disadvantages of a proportionate (flat-rate) personal income tax, as opposed to having a progressive tax system, involving different rates of income tax for different ranges of income, or even schemes with different tax rates for different beneficiaries. I start with the mechanics of the situation, deriving formula for calculating key features, and then go on to assess the merits of a proportionate (flat-rate) tax and of a progressive scheme. In this third section, I shall also ignore the extra margin which would have to be added to the personal income tax rate to cover the safety net and administration costs.

The type of situation that I am envisaging occurs where a proportion of the population receives a full BI, FBI, and the rest of the population, receives a partial BI, PBI, and they all pay the same personal tax rate,  $t_1$ , on their gross income from all sources (ie. apart from the BI). An amendment is proposed to the scheme, whereby all those receiving partial BIs, can pay a reduced, or zero, rate of income tax,  $t_2$ , on their gross incomes until their net incomes are the same as those who received the full BI and have the same gross income, after which level of gross income,  $Y_0$ , all pay the same rate of income tax,  $t_1$ . (This would bring about the same effect that is intended of a means-tested benefit, MTB, without the adverse unintended consequences, such as the large disincentive-to-work which is an integral part of an MTB when it overlaps with the personal tax system.)

The questions that need answers are:

- (1) What is the cost of providing the Basic Incomes?
- (2) What is the tax revenue from the first situation, when all pay  $t_1$  on their gross incomes?
- (3) What is the formula for obtaining the gross income level,  $Y_o$ , where the net incomes merge?
- (4) What is the tax revenue from the second situation, where  $b_2$  of the population pay tax rate  $t_2$  on the first  $Y_o$  of their gross income, and  $t_1$  on incomes greater than  $Y_o$ ?
- (5) How much tax revenue is lost by allowing the lower tax rate?
- (6) Since this turns out to be difficult to calculate, estimate of the maximum possible loss of tax revenue
- (7) How much is saved by granting only partial BIs to some, rather than full BIs to all?

The answers to these questions are derived below.

The following notation is used.

Let the number of individuals in a population be denoted by  $n$ . Let an individual's gross income from all sources be denoted by  $Y_i$ , where  $Y_i \geq 0$ . It is expected that the distribution of gross personal incomes in the population will be skewed, with a long tail. The SUM OF ALL INCOMES can be denoted by  $\sum Y_i$  summed over the whole population. This is also the POTENTIAL TAXBASE, but this is shortened to TAXBASE here.  $YBAR$  is the mean of the distribution, where  $YBAR = (\sum Y_i) / n$ . The sum of incomes,  $Y_i \leq YBAR$ , will equal the sum of incomes,  $Y_i > YBAR$ , which equals half of the TAXBASE.

Let us further assume that the number of people receiving a FBI is  $n_1$  and those receiving a PBI is  $n_2$ , ( $n_1 + n_2 = n$ ). Let FBI be a proportion  $b_1$  of  $YBAR$ , and the PBI be a proportion  $b_2$  of  $YBAR$ .

The cost of providing the Basic Incomes is

$$(1) \quad \text{TOTAL COST} = (b_1 \times YBAR \times n_1) + (b_2 \times YBAR \times n_2) \\ = [(b_1 \times n_1) + (b_2 \times n_2)] \times YBAR$$

And the income tax rate,  $t_1$ , necessary to finance it is TOTAL COST divided by  $n$ .

The tax revenue based on a tax rate,  $t_1$ , levied on all incomes can be represented by

$$(2) \quad \text{TAX REVENUE} = t_1 \sum_{i=0}^n Y_i = t_1 \times \text{TAXBASE.}$$

As those of you will know, who have tried to work out possible schemes before,  $YBAR$  is the major constraint on the scheme, and all the key decisions are determined by the box delineated by  $Y = YBAR$  and net  $Y = YBAR$ .

The level of gross income,  $Y_o$ , at which the net incomes of the two groups merge, can be calculated as follows.

The net income of those on the full BI is given by  $FBI + (1 - t_1) Y_o$ .

The net income of those on the partial BI is given by  $PBI + (1 - t_2) Y_o$ .

When these are equal, the value of  $Y_o$  is given by

$$(3) \quad Y_o = \frac{(FBI - PBI)}{(t_1 - t_2)} = \frac{(b_1 - b_2) \times YBAR}{(t_1 - t_2)}$$

Let us assume that of the  $n_2$  people receiving the PBI,  $n_3$  of them will have incomes,  $Y_i \leq Y_o$ , and  $n_4$  ( $n_4 = n_2 - n_3$ ) have incomes  $Y_i > Y_o$ . Thus, in order to simplify the notation, we note that we have three groups of people to consider, with  $n_1$ ,  $n_3$  and  $n_4$  people respectively. The  $n_1$  people receiving an FBI pay tax at the rate of  $t_1$  on all their gross income. The  $n_3$  people pay a tax rate,  $t_2$ , on their income,  $0 < Y_i < Y_o$ , and the other  $n_4$  people pay  $t_2$  on the first  $Y_o$  of their income and  $t_1$ , ( $0 \leq t_2 < t_1$ ), on the remainder,  $(Y_i - Y_o)$ , then the tax revenue will be

$$(4) \quad \text{TAX REVENUE} = \sum_{i=0}^{n_1} t_1 \cdot Y_i + \sum_{i=0}^{n_3} t_2 \cdot Y_i + \sum_{i=0}^{n_4} (t_2 \cdot Y_o + t_1 \cdot (Y_i - Y_o))$$

$$= t_1 \cdot \sum_{i=0}^{n_1} Y_i + t_2 \cdot \sum_{i=0}^{n_3} Y_i + t_2 \cdot n_4 \cdot Y_o + t_1 \cdot \sum_{i=0}^{n_4} Y_i - t_1 \cdot n_4 \cdot Y_o$$

$$= t_1 \cdot \sum_{i=0}^{n_1} Y_i + t_2 \cdot \sum_{i=0}^{n_3} Y_i + t_1 \cdot \sum_{i=0}^{n_4} Y_i - (t_1 - t_2) \cdot n_4 \cdot Y_o$$

The tax revenue has the expected terms for the sums of the population paying  $t_1$ , and those with  $Y_i \leq Y_o$  and  $Y_i > Y_o$ , but there is the extra fourth term, which lowers the tax revenue by the reduced rate  $(t_1 - t_2)$  on the first  $Y_o$  tranche of the  $n_4$  incomes of the higher income part of the  $n_2$  population.

The reduction in tax revenue, between everyone paying  $t_1$  on all of their incomes and  $n_3$  paying  $t_2$  on  $Y_i < Y_o$  and  $n_4$  paying  $t_1$  on  $Y_i > Y_o$ , can be derived by the difference between equations (2) and (4).

$$(5) \quad \text{LOSS of TAX REVENUE} = t_1 \sum_{i=0}^{n_3} Y_i + t_1 \sum_{i=0}^{n_4} Y_i - t_2 \sum_{i=0}^{n_3} Y_i - t_1 \sum_{i=0}^{n_4} Y_i + (t_1 - t_2) n_4 \cdot Y_o$$

$$= t_1 \cdot \sum_{i=0}^{n_3} Y_i - t_2 \sum_{i=0}^{n_3} Y_i + (t_1 - t_2) \cdot n_4 \cdot Y_o$$

$$= (t_1 - t_2) \left( \sum_{i=0}^{n_3} Y_i + n_4 \cdot Y_o \right)$$

There are two unknowns in this equation; one is the distribution of incomes  $Y_i \leq Y_o$ . and thus, to what those incomes sum. The other is  $n_4$ , the number of people with incomes  $Y_i > Y_o$ .

However, we can make a guess as to what the **Maximum Possible Loss of Tax Revenue, MPLTR**, will be by assuming that all incomes,  $Y < Y_o$  are in fact equal to  $Y_o$ . We note that the greater the value of  $Y_o$ , the greater the error in substituting  $Y = Y_o$  for all  $Y \leq Y_o$ , but it is an error on the side of caution. On the other hand, a reduced rate of tax on their gross income may provide incentive for those receiving PBIs to earn a gross income of  $Y_o$ .

If we assume that all incomes,  $Y < Y_o$  are in fact equal to  $Y_o$ , then the term  $\sum Y_i$  sums to  $n_3 \cdot Y_o$ , and equation (5) can be rewritten as

$$(6a) \quad \text{MPLTR} = (t_1 - t_2) (n_3 \cdot Y_o + n_4 \cdot Y_o) = (t_1 - t_2) \cdot n_2 \cdot Y_o$$

Of course, this could have been obtained straight away by just assuming that everyone receiving a PBI had a gross income of at least  $Y = Y_o$ , and that the reduction in tax would be  $(t_1 - t_2) \cdot n_2 \cdot Y_o$ .

We have already established in equation (3) that  $Y_o = \frac{\text{FBI} - \text{PBI}}{(t_1 - t_2)} = \frac{(b_1 - b_2) \cdot \text{YBAR}}{(t_1 - t_2)}$ .

Substituting for  $Y_o$  into equation (6a) yields

$$(6b) \quad \text{MPLTR} = (t_1 - t_2) \cdot n_2 \cdot (\text{FBI} - \text{PBI}) / (t_1 - t_2) \\ = (\text{FBI} - \text{PBI}) \cdot n_2 = ((b_1 - b_2) \cdot \text{YBAR}) \cdot n_2$$

This counter-intuitive result derived above states that, when substituting the derived formula for  $Y_o$ , into equation (6a) the MPLTR does not depend directly on the actual values of the two tax rates.

Finally, coming at the problem from a different angle, the saving made by granting  $n_2$  people only a partial BI rather than a full BI is

$$(7) \quad \text{SAVING FROM REDUCING FBI TO PBI} = (\text{FBI} - \text{PBI}) \cdot n_2 = (b_1 - b_2) \cdot \text{YBAR} \cdot n_2$$

Thus, the maximum possible loss in tax revenue, MPLTR, is exactly the same as the saving associated with reducing FBIs to PBIs. The actual net cost is (almost) the same whether one gives an FBI to everyone and uses a tax rate,  $t_1$ , to pay for it, or whether one restricts some of the population to a lower PBI, and allows a lower tax rate,  $t_2$ , for the relevant tranche of income until they have 'caught up' with the net incomes of those with EBIs. Since the cost could be almost the same, it raises the question whether it is preferable to give everyone a FBI in the first place, or to require able-bodied people of working age to have to earn a bit more to make their incomes adequate. The latter situation is in the same mould as a participatory BI, but without the administration and control that appears to be an essential part of the latter.

In practice, the actual loss of tax revenue could be much less than the MPLTR. There could be large numbers of people on lower BIs, such as young children, who have little or no income of their own, and a more accurate figure can be gauged. In practice, Her Majesty's Revenue and Customs (HMRC) will have the means to make a more accurate assessment of the figures involved.

To sum up some of these tentative results in this third part:

In order to estimate the Maximum Possible Loss in Tax Revenue, MPLTR, we assume that  $Y_i = Y_o$  for all  $Y_i < Y_o$ . We note the MPLTR is not dependent on the tax rates,  $t_1$  and  $t_2$ , involved. We also note that the greater the value of  $Y_o$ , the greater the error in substituting  $Y = Y_o$  for all  $Y < Y_o$ , but it is an error on the side of caution. On the other hand, a reduced rate of tax on their gross incomes may provide an incentive for those receiving PBIs to earn a gross income of  $Y_o$ . A more accurate estimate for MPLTR can be obtained if it is known that certain sections of the population receiving a reduced BI, such as children, are likely to have little or no gross income of their own. Lastly, the MPLTR is equal to the saving on the outlay from granting a PBI rather than a FBI for those involved. This raises

the question of whether to grant the FBI, instead of the PBI, to able-bodied working-age adults. There are several reasons why the PBI might be favoured, not least because it acts in the same way as a Participatory BI, but without the coercion and administration.

The MPLTR will be equal to the saving on the outlay of the BIs, and it does not depend on the actual value of  $t_2$ . The illustrative example used in the second part of this paper is used in the three examples below, and  $t_2$  takes different values,  $t_2 = 0.0$ ,  $t_2 = 0.2$  and  $t_2 = 0.3$ .

### EXAMPLE 1:

Let FBI = 0.4 x YBAR, (£6,656 pa = £ 128 pw),  $t_1 = 0.4$ ,  
 PBI = 0.3 x YBAR, (£4,992 pa = £96 pw),  $t_2 = 0$ .  
 $Y_o = (0.4 - 0.3) \times YBAR / (0.4 - 0.0) = YBAR / 4$   
 $= (£6656 - £4992) / 0.4 = £1664 / 0.4 = £4160$  (£80 pw).  
 Saving in BIs compared with all receiving EBI is  
 Saving =  $(0.4 - 0.3) \times YBAR \times n_2$   
 $= 0.1 \times YBAR \times n_2$ .  
 Maximum possible loss =  $(t_1 - t_2) \times Y_o \times n_2$   
 $= ((0.4 - 0) \times (YBAR / 4)) \times n_2$   
 $= 0.1 \times YBAR \times n_2$ .

### EXAMPLE 2:

Let FBI = 0.4 x YBAR, (£6,656 pa = £ 128 pw),  $t_1 = 0.4$ ,  
 PBI = 0.3 x YBAR, (£4,992 pa = £96 pw),  $t_2 = 0.2$ ,  
 $Y_o = (0.4 - 0.3) \times YBAR / (0.4 - 0.2) = YBAR / 2$   
 $= (£6656 - £4992) / 0.2 = £1664 / 0.2 = £8,320$  (£160 pw)  
 Saving in BIs compared with all receiving EBI is  
 Saving =  $(0.4 - 0.3) \times YBAR \times n_2$   
 $= 0.1 \times YBAR \times n_2$ .  
 Maximum possible loss =  $(t_1 - t_2) \times Y_o \times n_2$   
 $= ((0.4 - 0.2) \times (YBAR / 2)) \times n_2$   
 $= 0.1 \times YBAR \times n_2$ .

### EXAMPLE 3:

Let FBI = 0.4 x YBAR, (£6,656 pa = £ 128 pw),  $t_1 = 0.4$ ,  
 PBI = 0.3 x YBAR, (£4,992 pa = £96 pw),  $t_2 = 0.3$ .  
 $Y_o = (0.4 - 0.3) \times YBAR / (0.4 - 0.3) = YBAR$   
 $= (£6656 - £4992) / 0.1 = £1664 / 0.1 = £16,640$  (£320 pw)  
 Saving in BIs compared with all receiving EBI is  
 Saving =  $(0.4 - 0.3) \times YBAR \times n_2$   
 $= 0.1 \times YBAR \times n_2$ .  
 Maximum possible loss =  $(t_1 - t_2) \times Y_o \times n_2$   
 $= (0.4 - 0.3) \times YBAR \times n_2$   
 $= 0.1 \times YBAR \times n_2$ .

If the hybrid BI system examined here in the third part of this paper were implemented, where an FBI is given to pensioners and other vulnerable people with a flat-rate tax of 40%, and an PBI for the rest,



with a lower rate of tax, say  $t_2 = 0$  on  $Y < Y_0$ , then it would give extra weight to the case for all vulnerable people to receive the Full BI, because it would not cost any more.

## **ASSESSMENT OF A PROPORTIONATE (FLAT-RATE) TAX AND A PROGRESSIVE TAX SCHEDULE.**

Tax schedule proposals can be compared on 4 criteria:

Fairness

What effect do they have on incentives to work and to save?

Their costs of administration.

Their costs of compliance (ie the cost of prevention, and the cost of lost tax revenue)

**Fairness.**

Given the gross inequality of the income distributions in most Western countries, a system that reduces it must be regarded as fairer. It follows that the greater the inequality of the gross incomes, the higher the flat-tax rate that is necessary to restore a more equitable distribution of net incomes. The rate that is regarded as fairest is, of course, subjective.

Perceptions are important, and while a flat-tax rate of 40% might seem high to some, it is lower than many low-income people are currently paying in the UK, given a high benefit withdrawal rate, coupled with the current income tax rate and National Insurance contribution rates. Secondly, those on low incomes may prefer this system, even with a tax rate of 0.40, because their net income =  $BI + 0.6.Y$ , could render them better off than currently. Even those on high incomes, currently paying a combined income tax rate of 0.4 and a National Insurance contribution of 0.01, could be better off. Thus, it is possible that a 40% personal income tax could be acceptable to the UK public.

The system examined above is a hybrid, in that it is based on a flat-rate tax of 40% for those aged over 64 and other vulnerable people, and a slightly progressive one for the rest. If any vulnerable person objected to facing a 40% tax rate, s/he could be offered the option to receive the Partial BI and pay the lower rate of tax.  $t_2$ , on  $Y \leq Y_0$

On the whole, a progressive scheme, where tax rates increase as income increases, is regarded as fairer than a flat-rate tax, because the proportion of an individual's income paid as tax increases as income increases. Even with a flat rate tax, the combination of BI and tax leads to the proportion of tax paid as a proportion of gross income increasing as gross income increases. In a progressive tax scheme, tax liability as a proportion of gross income increases more steeply than with a flat-rate tax. A progressive income tax could quite easily end up with a rate of tax of 50% on incomes of more than 4, 5 or 6 times YBAR, but in my opinion, 50% is the highest rate that should be levied on any one's income, and obviously only on those with such high incomes.

In a flat-tax system, average tax, the amount of tax paid as a proportion of gross income, increases gradually as gross income increases, but is never greater than the standard tax rate,  $t$ . The formula can be derived as follows:

$$\text{Net Tax paid} = t.Y - BI = t.Y - b.YBAR = t.Y - t.YBAR = t.(Y - YBAR)$$

$$\text{Average tax paid} = \text{Net tax paid} / \text{gross income} = t.(Y - YBAR) / Y.$$

This is an increasing function of Y, and it converges to t. It is illustrated in Table 4.

**TABLE 4.** For  $b = t = 0.4$ : For  $b = t = 0.3$

Multiples of YBAR	Gross Income, Y	Net tax, T, = (0.4 x Y) – BI	T / Y	Net tax, T, = (0.3 x Y) – BI	T / Y
10	£166,400	59 904	0.36	44,928	0.27
8	£133,120 pa = 2560 pw	46,492	0.35	34944	0.2625
6	99,840	33,280	0.333	24,960	0.25
5	83,200	26,624	0.32	19968	0.24
4	66,560	19968	0.30	14976	0.225
3	49,920	13312	0.267	9984	0.20
2.5	41,600	9983	0.24	7,488	0.18
2	33,289	6656	0.20	4,992	0.15
1.6	26,624	3394	0.15	2,995.20	0.1125
1.5	24,960	3,328	0.133	2,496	0.10
1.333	22,187	2219	0.10	1,640	0.075
1	16 640	0	0.00	0	0.00

### Incentives to work.

A progressive tax scheme, where the tax rates increase as gross income rises, gives low-wages people, who are often unskilled and in part-time and insecure jobs, an increased incentive to top up their incomes. This is especially true if the initial rate is  $t = 0$ .

It increases the incentives for richer members of a family to use the lower rates of tax of poorer family members to reduce their own tax liability. If this action were also accompanied at the same time by a transfer of the right-to-the-income to the poorer family member, maybe it would not be a bad thing, bringing its own informal redistribution.

### Administration

A flat rate tax is easy and cheap to administer, especially through deduction of tax at source, with the same rate for all. However, it means that everyone in the population technically is subjected to tax on even the smallest income received, and thus increases the number of cases to be handled by Her Majesty's Revenue and Customs, HMRC. Progressive systems, being more complex, lose the simplicity that is one of the objectives of many BI systems. This might be regarded as the thin end of the wedge, and open the door to further complexity. The current UK tax system is slightly progressive, with tax rates of  $t = 0$ ,  $t = 0.2$  and  $t = 0.4$  in the tax year 2008-09, together with National Insurance premiums, see Table E. Thus, UK tax-payers are accustomed to self-assessment, so a similarly slightly progressive system should not present further difficulties. There might be advantages in HMRC being able to ignore cases where  $Y < Y_0$ , where  $t = 0$ , such as for children's Saturday morning earnings, as they do at the moment.

## Incentive to defraud

A flat-rate tax system with a relatively high tax rate might increase the incentive for people to evade paying their taxes (ie illegally). Alternatively, with a progressive system, with an initial rate of  $t = 0$ , low income people might get into the habit of not paying tax and forget to pay taxes when their incomes reach the threshold for the next rate of tax. On the other hand, self-assessment, with the Revenue and Customs Office inspecting cases at random and imposing large fines as punishment, should provide a deterrent to defrauding the system.

I am not discussing here **regressive tax schemes** where the proportion of tax paid decreases with income. Means-tested benefit schemes in the UK combined with the personal income tax schedule tend to lead to very regressive systems, with lower income people facing far higher effective marginal tax rates than higher income individuals. We should not forget too, that some schedules have three rates of tax, where the tax rate on the middle range of income is lower than those on the first or third, (what I call **S-shaped schedules**). S-shaped schedules start regressively for lower incomes, which have the effect of shifting upwards the net incomes of higher income individuals. Alternatively, in **Z-shaped schedules**, the tax rate on the middle range of income is higher than those on the first and third ones. They appear to start progressively, but are regressive at the upper income range. Neither S- nor Z-shaped schedules are very satisfactory.

Final version, 9 July 2008.

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## **APPENDIX A. GDP, GNI, AND POPULATION FIGURES, FOR YEARS 2004, 2005 & 2006**

Source: United Kingdom National Accounts, (Blue Book), 2005, 2006 & 2007 editions.

<b>Blue Book TABLE</b>	<b>Blue Book REF</b>		<b>2004</b>	<b>2005</b>	<b>2006</b>
			<b>£m</b>	<b>£m</b>	<b>£m</b>
<b>1.2</b>	<b>YBHA</b>	<b>GDP at current market prices (output)</b>	<b>1 164 439</b>	<b>1 224 715</b>	<b>1 299 622</b>
		GDP at current market prices (expenditure)	1 163 861	1 223 777	1 298 987
		GDP at current market prices (income method)	1 163 736	1 225 632	1 300 173
1.2	ABMX	Gross National Income at current market prices	1 189 623	1 253 561	1 316 956
			<b>000s</b>	<b>000s</b>	<b>000s</b>
<b>1.5</b>	(YBHA/ IHXT) or <b>DYAY</b>	<b>Home Population</b>	<b>59 834</b>	<b>60 218</b>	<b>60 533</b>
	DYAY- MGSL	Population under 16	12 5710	12 491	12 433
		<b>Household population aged 16 +</b>			
1.5	MGRQ	Self-employed	3 628	3 641	3 711
1.5	MGRN	Employees	<u>24 526</u>	<u>24 817</u>	<u>25 002</u>
1.5	MGRZ	Total employment*	28 382	28 676	28 895
1.5	MGSC	Unemployed	<u>1 438</u>	<u>1 425</u>	<u>1 657</u>
1.5	MGSF	All economically active population	29 821	30 101	30 522
1.5	MGSI	Economically inactive population	<u>17 473</u>	<u>17 626</u>	<u>17 548</u>
1.5	MGSL	Total	47 293	47 727	48 100
<b>1.5</b>	<b>IHXT</b>	<b>GDP at current market prices per head</b>	<b>£ 19 547</b>	<b>£ 20 338</b>	<b>£ 21 469</b>

\* This includes people on government-supported training and employment programmes and unpaid family workers.

## **APPENDIX B. TAXES PAID ON INCOME AND WEALTH BY UK RESIDENTS IN 2004 - 2006**

Source: United Kingdom National Accounts, (Blue Book), 2005, 2006 & 2007 editions, T.11.1.

<b>Blue Book Ref</b>	<b>TAXES ON INCOME AND WEALTH</b>	<b>2004 £ million</b>	<b>2005 £ million</b>	<b>2006 £ million</b>
DRWH	Household income taxes	119 959	128 872	137 617
NMDE	National Insurance: Self employed	2 980	2 843	2 930
GCSE	National Insurance: Employees	<u>31 440</u>	<u>34 954</u>	<u>36 415</u>
	Total	154 379	166 669	176 962
NMGI	<b>CAPITAL TAXES</b>	<u>2 386</u>	<u>3 154</u>	<u>3 579</u>
	Total	139 474	169 823	180 541

**APPENDIX C. GENERAL GOVERNMENT TRANSFERS, 2002, 2003 & 2004.**

Source: United Kingdom National Accounts, (Blue Book), 2005, 2006 & 2007 editions,  
Tables T.5.2.4S, T.5.3.4.S

<b>Blue Book Ref.</b>	<b>SOCIAL SECURITY BENEFITS IN CASH</b>	<b>2004 £ million</b>	<b>2005 £ million</b>	<b>2006 £ million</b>
	<b>National insurance fund</b>			
CSDG	Retirement pensions	48 404	50 930	53 201
CSDH	Widows' and guardians' allowances	939	897	822
CSDI	Unemployment benefit	--	--2	--
CJTJ	Jobseeker's allowance	453	478	476
CUNL	Incapacity benefit	6 777	6 735	6 692
CSDL	Maternity benefit	147	163	173
CSDQ	Statutory sick pay	78	78	80
GTKZ	Statutory maternity pay	<u>1 291</u>	<u>1 191</u>	<u>1 316</u>
<b>ACHH</b>	<b>Total national insurance fund benefits</b>	<b>58 089</b>	<b>60 470</b>	<b>62 760</b>
GTKN	Redundancy fund benefits	189	271	200
GTLQ	Social fund benefits	2 295	2 231	2 274
FJVZ	Benefits paid to overseas residents	<u>1 527</u>	<u>1 583</u>	<u>1 676</u>
		<b>4 011</b>	<b>4 085</b>	<b>4 150</b>
<b>QYRJ</b>	<b>Total social security benefits in cash</b>	<b>62 100</b>	<b>64 555</b>	<b>66 910</b>
	<b>SOCIAL ASSISTANCE BENEFITS IN CASH*</b>			
CSDD	War pensions and allowances	1 136	1 040	995
CSDE	Income support	16 124	15 976	15 935
RYCQ	Income tax credits and reliefs	11 329	12 326	13 767
EKY3	Child benefit	9 526	9 860	10 113
EKY4	Non-contributory job seekers' allowance	1 841	1 770	2 005
EKY5	Care allowances	5 661	5 912	6 458
EKY6	Disability benefits	8 795	9 309	9 835
EKY7	Other benefits	4 557	5 812	3 949
RNNF	Benefits paid to overseas residents in cash	<u>48</u>	<u>48</u>	<u>48</u>
<b>NZGO</b>	<b>Total social assistance benefits in cash</b>	<b>59 017</b>	<b>62 053</b>	<b>63 105</b>
<b>NMDR</b>	<b>TOTAL SOCIAL BENEFITS (CENTRAL GOVERNMENT)</b>	<b>121 117</b>	<b>126 608</b>	<b>130 015</b>
	<b>SOCIAL BENEFITS (LOCAL GOVERNMENT)</b>			
	<b>Social assistance benefits in cash</b>			
GCSI	Student grants	1 379	1 440	1 645
CTML	Rent rebates	5 167	5 280	5 407
GCSR	Rent allowances	<u>7 731</u>	<u>8 456</u>	<u>9 092</u>
<b>ADAL</b>	<b>Total social assistance benefits in cash</b>	<b>14 277</b>	<b>15 176</b>	<b>16 144</b>
	<b>TOTAL SOCIAL BENEFITS IN CASH</b>	<b>136 710</b>	<b>141 784</b>	<b>146 159</b>

- These figures for 2004 were abstracted from the Blue Book 2006 edition.

**Note::** Total unfunded social benefits, which are mainly civil service, armed forces', teachers', NHS, police and firefighters' pension schemes, and employee benefits, have been excluded from this table.

## APPENDIX D. SOME KEY UK SOCIAL SECURITY BENEFIT RATES:

£ PER WEEK	2007 – 2008	2008 - 2009
<b>Child Benefit,</b>		
For the eldest child who qualifies,	18.10	18.80
For each other child who qualifies,	12.10	12.55
Guardian's Allowance	12.95	13.45
<b>NATIONAL INSURANCE BENEFITS (maximum rates)</b>		
<b>Statutory Maternity Pay/Paternity Pay/Adoption Pay,</b>		
	if average gross weekly earnings are £87.00 pw or more;	£90.00 pw or more
For first 6 weeks,	90 % of one's average weekly earnings.	
For remaining 33 weeks,	90 % of one's average weekly earnings, up to £112.75 pw;	up to £117.18 pw
<b>Incapacity Benefit, Long-term basic rate:</b>	81.35	84.50
<b>Statutory Sick Pay,</b> if average gross earnings are	£87.00 pw or more,	£90.00 pw or more
Standard rate	72.55	75.40
<b>Jobseeker's Allowance</b> (contribution based), aged 25 +	59.15	60.50
<b>Basic State Pension</b>		
Based on you own or your late spouse's NI contributions	87.30	90.70
Based on your spouse's NI contributions	52.30	54.35
Non-contributory (based on residence), higher rate	52.30	54.35
Over 80 Pension	52.30	54.35
<b>Widowed Parent's Allowance</b>	87.30	90.70
<b>Bereavement Benefit</b> (standard rate)	87.30	90.70
<b>MEANS-TESTED BENEFITS</b>		
<b>Income Support &amp; Jobseeker's Allowance</b> (income-based)		
Personal allowances, single people (aged 25 and over)	59.15	60.50
Lone parents (aged 18 or over)	59.15	60.50
Couple (both aged 18 or over)	92.80	94.95

There is a set of premiums for family, bereavement, carer, disability, and pensioner couples, etc.

	2007-08	2008-09
<b>Housing Benefit &amp; Council Tax Benefit</b> (administered by local government).		

'Rates used to work out your Housing Benefit are generally the same as the allowances and premiums that make up Income Support and income-based JSA' (Jobseeker's Allowance).

<b>Carer's Allowance,</b>	48.65	50.55
earnings limit	87.00	95.00

**Disability Living Allowance (DLA)**

Care component	Highest rate	64.50	67.00
	Middle rate	43.15	44.85
	Lowest rate	17.10	17.75
Mobility component	Higher rate	45.00	46.75
	Lower rate	17.10	17.75

**TAX CREDITS** (Means-tested benefits administered by Her Majesty's Revenue and Customs)  
**£ PER ANNUM**

**Child Tax Credit**, introduced in April 2003

Family element	£ 545 pa	£ 545 pa
Child element, for each qualifying child	£1 845 pa	£2 085 pa
Disabled element	£3 440 pa	£2 540 pa
Severe disabled element	£ 980 pa	£1 020 pa

**Working Tax Credit**, introduced in April 2003, for people aged 25 and over,

Basic element	£1 730 pa	£1 800 pa
Couples and lone parent element	£1 700 pa	£1 770 pa
30 hours of work per week	£ 708 pa	£ 735 pa
Disabled worker element	£2 310 pa	£2 405 pa
Severe disabled element	£ 980 pa	£1 020 pa
50+ return to work payment, 16 - 29 hours pw	£1 185 pa	£1 235 pa
£30 hours or more pw	£1 770 pa	£1 840 pa
Childcare element, maximum eligible costs allowed		
For 1 child	£ 175 pw	£ 175 pw
For 2+ children	£ 300 pw	£ 300 pw

The taper rates (tax credit withdrawal rates as gross income increases) for CTC and WTC were 37%.

**Pension Credit**, introduced in October 2003, for people aged 60 and over,

Guarantee credit, single person	119.05 pw	124.05 pw
Couple	181.70 pw	189.35 pw

National Minimum Wage (aged 22 & over), from 1 Oct 07 & 08	5.52 p.hr	5.73 p.hr
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**Sources:**

*Benefit and Pension Rates*, Department of Work and Pensions Booklet BRA5DWP, August 2007.

<http://www.direct.gov.uk/en/MoneyTaxAndBenefits/Index.htm>

*Which? Tax Saving Guide 2008*, Which? Ltd

**APPENDIX E. UK TAX ALLOWANCES, TAX RATES AND BANDS, 2002-03 TO 2005-06**

	2005 – 2006	2006 – 2007	2007 – 2008	2008 - 2009
<b>Personal allowances</b>				
Basic	£ 4 895	£ 5 035	£ 5 225	£ 5 435
Age-related, 65 -74	7 090	7 280	7 550	9 030
Age-related, 75 and over	7 220	7 420	7 690	9 180
Age allowance income limit, AAIL	19 500	20 100	20 900	21 800
- taper rate on age-related allowance if income exceeds AAIL, but never to less than the basic allow.	50 %	50 %	50 %	50 %
<b>Married couples allowance</b> - if one spouse born before 6/4/35				
Minimum amount	2 280	2 350	2 440	2 540
Either spouse born before 6/4/35	5 905	6 065	6 285	6 535
Either spouse aged 75 or over	5 975	6 135	6 365	6 625
- tax rate at which tax is deducted from final tax bill	10 %	10 %	10 %	50%
<b>Tax bands for taxable income</b>				
Starting band	0 – 2 090	0 – 2 150	0 – 2 230	n/a
Starting rate	10 %	10 %	10 %	
Basic band	2 091 – 32 400	2 151 – 33 300	2 231 – 34 600	0 – 36 000
Basic rate	22 %	22 %	22 %	20 %
Higher band	32 401 & over	33 301 & over	34 601 & over	36 001 & over
Higher rate	40 %	40 %	40 %	40 %
<b>Class I (employee) National Insurance contributions</b>				
Earnings threshold (ET)	4 895	5 035	5 200	5 435
Rate paid btw ET & UEL	11 %	11 %	11 %	11 %
Upper Earnings Limit (UEL)	32 760	33 540	34 840	40 040
Rate paid on earnings above UEL	1 %	1 %	1 %	1 %

Source: *Which? Tax Saving Guides 2005, 2006-07 & 2007-08*. Which? Ltd and various other references.