Deadweight Loss: Why everyone in Britain loses £14,000 income a year

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TAXES used by governments worldwide cause a massive loss of income and they reduce society's capacity to care for the disadvantaged. There *is* an alternative. It requires the identification of sources of revenue that do not inflict the "excess burden" or "deadweight loss" associated with conventional taxes. I apply this alternative strategy to the British economy, to illustrate the income foregone by relying on "normal" taxes. My analysis draws on the results of studies by Drs. Nicolaus Tideman and Florenz Plassmann.[1]

The tables portray the British Government's Income and Expenditure, together with additional columns showing the amount of *income foregone.* The main ingredients are summarised in Table 1:

I reveal the information that the electorate and Parliament ought to have at their disposal. The vital Column 3 in Table 4 is omitted from budget statements. This prevents Parliaments from reaching rational conclusions about the effectiveness of governmental fiscal policy.

In the UK, this *lost* national income translates to a *capacity* for the economy to increase by some 81%. This increased capacity grants both the Government and the people more choices in their policies and daily activities. The choices might well be for more leisure rather than higher income, and for higher priorities in environmental and ecological issues. It need not be just the accumulation of more income!

The conspiracy of silence that attends the taxation debate among politicians – i.e. a total absence of any figures for what is

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Table 1

	£m*
UK NDP for 2001*	1,088,619
Income Foregone "Deadweight Loss"	881,781
Harmful Taxes	278,500
Taxes without "Deadweight Loss"	70,900
	£
Per Capita Deadweight Loss (60m population)	14,698

* NDP (Net Domestic Product) = Gross Domestic Product less Capital Consumption

called the "excess burden" of taxation – led one City of London economist, David Smith, to sum up the June election debate as being of a "near-cretinous level of economic literacy".[2]

THERE ARE TWO main thrusts to the economic analysis of excess burden, i.e. the loss to the economy of national income through the taxation of productive enterprise.

The supply-side analysis focuses on the loss of National Income that is caused by the tax-take above a certain level. The benchmark is usually put at 30% of GDP. In the UK, the last time this proportion was taken as government revenue was at the beginning of the 1960s. The argument is that increases in public expenditure in excess of this level has provided for little in public welfare, but has seriously damaged the growth in National Income.

The alternative revenue source is the basis of the second analytical approach. This focuses our attention not on *how much* is taken by government, but *how* it is taken. Analysts identify the kind of taxes that increase excess burden and decrease income. They then identify the taxes or other sources of government revenue that reduce the excess burden, and consequently enable people to increase their incomes. The point is that government revenue should be maximised from these alternative sources, leaving as little as possible to be collected from taxes that harm the economy.

The most recent supply-side analysis is that by David B. Smith, chief economist at London stockbrokers Williams de Broë (*Public Rags or Private Riches?* Politeia, London, 2001). He reiterates the message that government spending limits economic growth, and that taxation, especially high and capricious taxes, hurts even more through a loss of national wealth. This loss of wealth retards the rate of growth and limits the capacity of the country to help the disadvantaged in society.

Smith's earlier work indicated a statistically significant correlation between public spending and growth,[3] and he showed that public consumption spending seriously harms private investment. He quotes with approval the studies at Warwick University, which confirmed his findings. Similar findings can be found in Barro (1997),[4] Mendoza, Razin & Tesar (1993),[5] and Tanzi and Schuknecht (1995).[6] The latter note: "Today, countries with small governments and the newly industrialized countries show similar levels of social indicators but these are achieved with lower expenditure, lower taxes and higher growth than countries with big governments."

Smith's figures show that UK expenditure, and the consequent high level of taxation, is "far too high to be consistent with the maximization of the country's long-term economic welfare. The cost in terms of economic growth has been massive".

He estimates that British economic growth in 1998 was 54% less than it would have been had the level of expenditure been kept at the 1960 level, i.e. 32.2% of GDP, instead of the 40.2% it achieved in 1998.

IT APPEARS that Old Labour, representing the socialist and trades union doctrines, in its constant demand for more public expenditure, has unwittingly seriously damaged provision for the poor, and also retarded investment in manufacturing.

David Smith poses the question: "How large should the public sector be?" His answer, interestingly, is: "There are quite high marginal returns to increased public spending when it is starting from a low base, with the imposition of the 'rule of law', improved health and education, all boosting economic growth, as well as being desirable in themselves. But it is also clear that, as the role of the public sector expands, diminishing returns set in, until eventually the public sector is doing more harm than good".

He quotes Tanzi and Schuknecht[7] as arguing that "most of the important social and economic gains can be achieved with a drastically lower level of public spending than prevails today". They consider that "perhaps public spending need be no higher than 30% of GDP to achieve most of the

Table 2 UK Public Expenditure 2001
Budget Estimates of March 2000

	£m	% of Total
Environment	46,200	12.5
Health	45,000	12.1
Defence	22,800	6.2
Education & Employment	18,300	4.9
Scotland	14,900	4.0
Home Office	8,100	2.2
Wales	7,400	2.0
Northern Ireland	6,200	1.7
Trade & Industry	3,700	1.0
Treasury	3,500	0.9
Social Security/Administration	3,200	0.9
Legal Departments	2,900	0.8
International Development	2,800	0.8
Welfare to Work Scheme	1,400	0.4
Cabinet Office	1,300	0.4
Agriculture, Fisheries & Food	1,300	0.4
Foreign & Commonwealth Office	1,100	0.3
Culture, Media &Sport	1,000	0.3
Other	2,400	0.6
Social Security	99,600	27.0
Govt. Debt Interest	27,800	7.5
Local Expenditure – Locally Financed	18,100	5.0
Net Payments to European Union	2,700	0.7
CAP – European Union	2,500	0.7
Adjustments	13,700	4.0
Other	12,800	3.0
Total Government Expenditure	**370,900**	

NB This breakdown reveals a great deal about the British economy. Social Security and its administration absorb 28% of Government expenditure!

important social and political objectives that justify governmental interventions".

One distinguished economist, Colin Clark, concluded that, when taxation exceeded 25% of the nation's product, inflation necessarily followed, increasing sharply as the percentage rose well above 25%. Clark received confirmation of this from John Maynard Keynes, then (1944) Editor of the *Economic Journal*, during pre-publication correspondence.[8]

POLITICALLY, under current economic and social conditions, it would seem impossible to reduce government spending to 1960 levels. This would mean a cut of 20% in government expenditure. It is possible to roll back by no more than during the Reagan/Thatcher era. This was about a 7% reduction, and even that caused major upsets among the populace.

But that does not mean the disincentives of taxation cannot be reduced, with a consequent increase in the rate of growth of the economy. The solution is proposed by Professors Tideman and Plassmann (1998).[9] They have identified certain taxes and other sources of government revenue that do not harm the economy. *Their analysis also shows that growth in the national income can be achieved with spending at current levels.*

Using the model they pioneered, they have produced figures for the British economy that are outstandingly significant. Taking 1993 as the base year, Tideman and Plassmann calculate that the British economy was operating at a level of only 55% of its potential! This translates to an increase of 81% in NDP for that year alone.[10] This is in contrast to the 54% calculated by the supply-siders.

The reason for the higher figure is that Tideman and Plassmann replace taxes that are destructive with taxes and other sources of revenue that are neutral. They calculate that the excess burden of the British economy was 40% of NDP. This produces an estimate for the savings rate in 1993, using the alternative strategy, as 10%; this compares with the actual rate of 3.8%. Over the period 1993-1998, this would have resulted in an increase of capital stock of 19%.

The major revenue sources identified as part of the alternative strategy are land and natural resources.[11] Appropriate public charges (no more than 100% of the annual taxable value) on these resources have no deadweight loss effects. In fact, they

- positively encourage economic growth,
- reward the efficient allocation of all productive resources (land, labour and capital); and
- terminate speculative activity in the land market.

That these alternative sources of revenue have not been identified by economists in the second half of the 20th century is entirely due to a confusion which they have perpetrated. They conflate land and capital in their models, and in their thinking, despite the fact that taxes act differently on each of the two categories.[12]

TIDEMAN AND PLASSMANN estimated that NDP in Britain could have been 81% higher. Although they admitted that data were lacking and that rough estimates only could be generated, those estimates were so startling that they felt that they needed to be in the public domain for analysis and improvement.

They "estimate that one-third of the income that is not labor income is a return to land or some other natural opportunity".[13] For the UK they estimate an annual land rental value for 1993 of $205bn. (this converts to £136 bn. at $1.5 = £1, 1993 average).[14] In the same book, I took a different route to estimating the annual land rent value in the UK for 1996, concluding that a figure of £118bn would not be unreasonable.[15] Should it be possible to switch, in one financial year, from taxes that harm to benign sources of revenue, the annual land rental would rise as taxes on income and capital were reduced. This would allow even further switching from harmful taxes to alternatives that are not harmful. This would launch a "virtuous circle" of public revenue collection.

The switch in a single year would not be practical. There would need to be a period of transition to include government legislation, a full valuation of all land and

Table 3 National Income (£m)

Product	1980	1990	1996	1998	1999	2001
GDP/£m	229,583	554,486	754,601	847,159	889,874	1,176,619*
GNI/£m	226,801	548,790	758,824	857,961	893,541	n/a
NNI/£n	197,299	481,028	674,855	769,190	792,944	n/a

GDP = Gross Domestic Product. GNI = Gross National Income. NNI = Net National Income.

- Estimated from Government Forecasts.
- Capital Consumption averaged £88,000m over the last three years, so I have estimated NDP 2001 at £1,088,619m for comparison with the Tideman/Plassmann figures for excess burden. This translates to a deadweight loss, or income foregone, at a sum of £881,781m.

Table 4 UK Public Receipts 2001
Budget Estimates (March 2000) and Deadweight Losses attributed proportionately to Tax Instruments

Receipts – £m	Column 1 2000-01	Column 2 Deadweight Loss - £m	Column 3 *Per Capita* Deadweight Loss: £
Income Tax – Net	95,900	303,637	5,061
Corporation Tax	33,800	107,017	1,784
Petroleum Revenue Tax	1,200	950	16
Capital Gains Tax	3,400	10,765	179
Inheritance Tax	2,300	3,641	61
Stamp Duties	7,200	22,797	380
Value Added (Sales) Tax	59,600	188,704	3,145
Fuel Duties	23,300	Zero	Zero
Tobacco Duties	7,400	Zero	Zero
Spirit Duties	1,800	Zero	Zero
Wine Duties	1,700	Zero	Zero
Beer & Cider Duties	3,100	Zero	Zero
Betting & Gaming Duties	1,400	2,216	37
Air Passenger Duty	1,000	3,166	53
Insurance Premium Tax	1,600	5,066	84
Landfill Tax	400	Zero	Zero
Customs Duties & Levies	2,000	6,332	106
Social Security Receipts	58,800	186,172	3,103
Council (Property) Tax	13,600	Zero	Zero
Business (Property) Rates	16,200	12,823	214
Vehicle Excise Duties	4,900	15,514	259
Oil Royalties	500	Zero	Zero
Other Taxes & Royalties	8,200	12,981	216
Total Government Taxes	**349,400**		
Total Loss of Income		**881,781**	**14,698**
Interest and Dividends	4,400		
Trading Surpluses & Rent	21,900		
Total Government Receipts	**375,700**		

natural resources, and a judgement on how to deal with the losses incurred by some people. During the transition phase, however, expectations about the future would be factored in by the markets. This would hasten the transition.

I HAVE COMPUTED the effect of switching to alternative sources of revenue for the financial year 2000/01. The figures are illustrative, based on the rough estimates that Tideman and Plassmann present, along with my estimates of the economic harm from various taxes. The figures are illuminating and startling, and should cause politicians to reflect seriously about current fiscal policies.

Column 3 in Table 4 shows the income foregone by using a harmful tax as opposed to alternative sources. Column 4 shows the amount of income foregone by each and every citizen, an amazing sum of £14,698.

David Smith recommends that "Responsible politicians should attempt to educate the population about the adverse long-run implications of excessive public expenditure on the further growth in their living standards".[16] Table 4 is the basis of

that informed democratic debate. When the Government announces the estimated tax-take in the budget forecast each year, an additional column should be added, a column showing the *loss* in Net National Income, the economic growth foregone, that each tax policy generates. *Governments would have to explain why they chose to employ taxes that damage the health and wealth of the nation.* The electorate would then be able to express informed preferences at election times.

The assumptions underpinning the figures shown as generating a loss in national wealth are detailed in the Appendix.

Tideman and Plassmann explain the harmful effects of each of the above taxes, and the beneficial effects of alternative sources of revenue. I have, therefore, not repeated these.

The methodology for arriving at the figures for foregone income is oversimplified, but the overall numbers for an increase in NDP should alert politicians as to the direction in which to move with the reform of budget policy.

I have taken a figure of 81% to apply to the UK Accounts of 2000/01, to indicate the scale of the losses involved.

This exercise – although it must be considerably refined by government statistical agencies to produce more precise calculations – reveals the increase of NDP that could be devoted to fulfilling people's expectations. Table 4 shows the loss for each of the taxes and receipts in the Budget estimates of March 2000 for the financial year 2000/01. This loss has been calculated by allocating a proportionate figure of the income increase for each tax that has a deadweight loss factor. The detail is in the technical appendix.

I stress that these figures are meant only to convey the *scale* of the loss of income. Column 2 illustrates how much revenue is obtained from the most popular taxes that do the most harm to the economy. There are many taxes that are not well identified. They bring in smaller sums, but in aggregate, they add up. They are known as stealth taxes, and are used to expand the tax base, silently! This stealth is not consistent with the norms of democracy, such as transparency and accountability.

Appendix

Assumptions employed in assigning deadweight losses to particular fiscal instruments.

Income Tax and Corporation Tax incur a full deadweight loss rating.

The Petroleum Revenue Tax is partly an ecological tax and, as such, would rate as zero deadweight loss. In Britain, however, the public outcry over petrol prices in December 2000 means that there is a loss effect. I have taken 25% of the tax figure as incurring deadweight loss.

Capital Gains Tax, with its negative effect on savings and investment, incurs a full deadweight loss rating.

Inheritance Tax is difficult to gauge. That part of it that is land-related can be rated zero, but the capital element has the effect of depriving the more productive private sector of large sums. I have taken an arbitrary ratio of 50/50 for each element.

Stamp Duties, whether upon Stocks and Shares or upon Property transactions, have a negative effect on both the property and investment sectors. As such, they rate a full deadweight loss rating.

Value Added Tax is a tax on consumers. It reduces the net income of the public. It may not be perceived as another deduction from income, like income tax or National Insurance Contributions, but the effect, although indirect, is the same.

Fuel Duties are difficult to categorise as the breakdown is not given in government figures. Part will certainly be ecological and will rate as zero deadweight loss. Part will also be a charge on transportation, whether public or private. As an arbitrary figure, I have taken 25% of the tax figure as incurring deadweight loss.

A range of **Duties** that can be considered as incurring no deadweight loss is that including Tobacco, Spirits, Wine, and Beer and Cider. Abolition of these Duties, or even a reduction, would result in an increase of

consumption that would be viewed as undesirable. There would also be an explosion of protests.

Betting and Gaming Duties are taxes on consumers on what are considered undesirable activities, but they also deprive some sports of support. I have taken 50% of the tax figure, arbitrarily, as incurring deadweight loss. It could also, reasonably, be rated zero deadweight loss.

Air Passenger Duty is an indirect assault on a consumer's income. It restricts choice in international travel, distorting those choices in favour of non-air travel. A full deadweight loss rating is given.

The Insurance Premium Tax results in a reduction of income and has distortionary effects. Full deadweight loss rating.

The Landfill Tax is related to land and natural resources and, as such, incurs no deadweight loss.

Customs Duties and Levies are taken as a full deadweight loss.

Social Security Receipts include contributions from both employees and employers. Those by employees are the same as income tax – a direct charge to income that is considered as harmful by all the authors quoted in this paper. The contributions by employers increase the cost of employment. A full dead weight loss is justified.

The Council Tax is property/land related. The amount charged is well below the land rental figure that would be levied if the alternative strategy were employed. As such, it is zero rated for deadweight loss.

Business Rates are property-based. The rate of tax on the property rental valuation is around 50%. If the valuations were up-to-date and at market levels, there would be a deadweight loss factor of around 10% to 15% of the tax take. This arises from taking the building/land ratio at 65/35 or 60/40. The 50% tax rate takes the land value plus part of the building capital. I have therefore estimated the deadweight loss factor at an average of 12.5%.

Vehicle Excise Duties were meant to pay for road infrastructure. The level of Duty is now well past that figure. The alternative revenue sources are a far more efficient and just method for financing infrastructure. These Duties rate a full deadweight loss.

Oil Royalties are based on natural resources and have, therefore, been rated as having a zero deadweight loss factor.

Other Taxes and Royalties. There is no breakdown of these figures, so an arbitrary rate of 50% has been attributed to deadweight loss.

Technical Appendix

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THE DEADWEIGHT LOSS that results for any one tax depends on the magnitudes of all other taxes that are also imposed. This analysis does not deal directly with this important fact but instead seeks to allocate among existing taxes the deadweight loss that results from all taxes at their present levels. Thus the implicit assumption that is made in the allocation of deadweight loss among taxes in the present analysis is that all taxes are shrunk simultaneously, and the excess burden of each tax, i, is measured as

$$\int_{T_i}^{0} \frac{\partial W(t_1, t_2, \ldots, t_n}{\partial t_i} \Big| \; t_j = T_j t_j / T_i, j \neq i \; dt_i$$

That is, the deadweight loss that is attributed to each tax, i, is the integral from the imposed level of the tax, Ti, down to zero of the change in economic well-being, W, as tax i is reduced, evaluated along the way with every other tax, j, reduced to the fraction of its imposed value to which tax i has currently been reduced.

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14 *Ibid.*, p.160.

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16 *Op. cit.*, 2001, p.26.