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How Should Britain's Government Spending and Tax Burdens be Measured?

A Historic Perspective on the 2009 Budget Forecasts

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Executive summary

- The government's preferred market-price GDP measure overstates national output because it is reported gross of indirect taxes and subsidies. Factor-cost GDP, which excludes all indirect taxes and subsidies, is a far better measure for analysing the government spending burden.

- Using this better measure of national income, the 2009 Budget projections imply that the ratio of general government expenditure to national income will rise to 53.4% in 2010, the highest ratio since World War II and 6.9% above the peak recorded in World War I. The ratio of public expenditure to private spending, which was 92.4% in 2008, will rise to 107% in 2009 and 114.5% in 2010 – the highest burden since 1945.

- Also using the factor-cost measure, public sector net borrowing is projected to increase from 8% of national income in 2008-09, to 14.1% in 2009-10, and 13.5% in 2011-12.

- There must be serious doubt whether deficits on this scale can be financed in a non-inflationary manner, without very large capital inflows from abroad. It is hard to see why such inflows should be forthcoming now that the British economy has become so highly taxed by international standards.

- The deficit can only partly be explained by the onset of severe recession. The ratio of government spending to GDP rose from 41.8% in 1999 to 45.8% in 2007 before the downturn commenced.

- The rise in non-productive spending as a share of GDP since 2000 is likely to have cut the UK's sustainable growth rate by some 1.0 to 1.7% per annum. Such a drop in productive potential will have reduced investment returns, which may have lead to a reduction in the supply of capital and contributed to the current crisis.

- Britain's current profligate fiscal policies are more likely to lead to 1970s-style stagflation than cure the recession.

- When Keynes wrote his General Theory in 1936 the ratio of general government expenditure to national output was only slightly over one half of the figure officially projected for next year. His correspondence after World War II suggests that Keynes would not have advocated further increases in the government spending ratio from such a high starting point.

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Introduction

As a matter of principle, measuring both the absolute and relative sizes of the UK public and private sectors should be a fairly simple matter. In theory, all that is required is agreed measures of national output and government spending – a range of figures for both are published by the UK Office for National Statistics (ONS) - and one can calculate private spending as a residual item. It is then not difficult to calculate the ratio of government spending to non-socialised GDP, if it is believed that this represents a better measure of the burden that the state is imposing on the rest of society. In practice, however, the devil lies in the detail of such calculations. Substantially different estimates of the government spending burden and the government/private sector spending ratio can be calculated depending on the definitions employed, even when using, relatively reliable, ONS data. These problems are compounded if one tries to go back further than the late 1940s, when most of the official time series commence. Generally, there are two main reasons why competing measures of the public spending and tax burdens differ from each other.

How do we define the 'public sector'?

The first reason is that definitions of the public sector can vary widely, particularly once allowance is made for quasi-government bodies and public corporations. The latter now include many of the ruined banks, such as the Royal Bank of Scotland, which are managed by UK Financial Investments (UKFI). These former private-sector banks have been re-defined as public corporations since October 2008. Unfortunately, there is currently little information available on the activities of the banks concerned, because the official statisticians are still struggling to compile the relevant figures. The normal convention used by international statistical bodies to alleviate this boundary problem is to employ the concept of 'General Government', which consists of Central Government and Local Authorities but excludes public corporations. The concept of General Government was originally introduced because of the confusion that would otherwise have arisen from countries with Federal systems. Using the general government definition also helps minimise the effects of earlier breaks in the series associated with the privatisation programmes of the Thatcher years as well as those associated with the current bail out of the banking system. The historic data used for the earlier periods in this study also excludes public corporations, making it easier to splice these earlier figures onto the latest ONS data. While the exclusion of public corporations is probably inevitable, if

consistent data standards are to be maintained, it does mean that there is an arguable downwards bias in many of the figures quoted later on.

Unfortunately, the dividing line between general government and the rest of the economy has itself become blurred in recent years. One reason is that many state-funded activities and their employees - such as universities, colleges of further education and 'opted-out' schools - are no longer treated as part of the government sector but are now allocated to the category of Non Profit Institutions Serving Households (NPISH). This is a hybrid split roughly 80% to 20% between government funded activities and private sector charities. The costs to the government of buying in services from the NPISH sector are not 'lost' from the aggregate figures, however, but appear in the accounts as 'Other Current Grants by General Government'. The sum involved was £36.7bn, or roughly 2.5% of GDP, last year. For analytical purposes, we have added 'Other Current Grants by General Government' to General Government consumption, and chain-linked this onto the historic figures given in Feinstein (1972) for 'Public Authorities' Current Expenditure' in the years previous to 1946 (see Appendix 1).

Something that definitely understates the burden of government, however, is that the European Union (EU) is nowadays treated as a separate undocumented fourth arm of government, alongside Central Government, Local Authorities and Public Corporations. This means that taxes paid directly to the EU are no longer included in the UK tax figures, despite the fact that they amounted to £4.9bn last year. For our estimates of the tax burden, we have added back taxes paid directly to the EU, which started in 1973, and also deducted the two 'windfall' taxes of £2.6bn levied by the Labour government in 1997 and in 1998. This removes a couple of spikes from some of the charts that follow but is of no further significance. Another possible downwards distortion is the official treatment of most tax credits as a negative tax, rather than the benefits that they closely resemble. This reduces the tax and spending burdens by roughly ½% of GDP, according to the 2009 Budget forecasts, but it was decided not to correct for this particular effect.

These data problems mean that there is no unambiguously correct way to quantify and track the size of the public sector. However, it is apparent that using the officially-produced statistics for general government expenditure tends to understate the size of the state. The main exception may be debt interest payments (and some welfare benefits) where the recipients pay tax on the incomes concerned. In these circumstances, the net cost to the exchequer is arguably less than the gross cost.
While any figure chosen to represent public expenditure has its drawbacks, the 'least-bad' buy, if one is interested in long-term comparisons, appears to be to employ the ONS's measures of general government expenditure compiled by sub-sector and economic categories on a national accounts basis. Such measures make the most economic sense, even if they do not correspond to the 'control totals' employed by HM Treasury. The ONS now publishes an 'Excel' spreadsheet every month that sets out detailed quarterly government accounts that extend backwards to 1946 Q1. This data allows both financial and calendar years to be used for analytical purposes. It is, therefore, largely a matter of convenience which basis is employed. The pre-1946 government data are only available on an annual calendar year basis, however, and quarterly GDP data only commence in 1955. That is the main reason why calendar year data have been employed here. Currently,

provisional figures are available up to 2008 Q4. This completes calendar 2008 but not yet fiscal year 2008-09.

How do we define national output?

The second major problem involved in attempts to measure the government spending and tax burdens concerns the precise definition of national output with which public expenditure and tax revenues are to be compared. There are at least three separate ways of measuring GDP employed by the ONS, and the chosen option can make a noticeable difference to the ratios concerned. The worst measure is probably GDP at market prices, which is reported gross of indirect taxes and subsidies, and overstates national output as a result. Even so, it is the officially preferred measure and is the concept most widely employed for international comparisons. This is because many overseas countries lack the ability to produce factor-cost estimates. One drawback of the market-price measure is that the varying mixtures between direct and indirect taxes mean that market-price GDP can distort the relative rankings of the economies concerned. Another is that market-price GDP increases - and the reported public spending ratio declines - when there is a revenue-neutral switch from direct to indirect taxation, even if underlying national output has not changed in any way.

Table 1: Alternative measures of the shares of government spending and taxes in UK national output in calendar year 2008

	Value (£bn)	Share of GGE in GDP (%)
General government expenditure (GGE)	613.9	
GDP at current market prices	1,442.9	42.6
GDP at basic prices	1,294.3	47.4
GDP at factor cost	1,278.2	48.0
Non-oil GDP at current market prices	1,401.7	43.8
Non-oil GDP at basic prices	1,253.1	49.0
Non-oil GDP at factor cost	1,237.0	49.6

Source: UK Office for National Statistics *Quarterly National Accounts First Release,* 27th March 2009 and *Public Sector Accounts* Excel Spreadsheet, April 2009.

The alternative measure of GDP 'at factor cost' excludes all indirect taxes and subsidies. As a result, it is arguably the best measure of national output for domestic purposes and international comparisons. Indeed, factor-cost GDP was generally accepted as the most relevant measure of national output for measuring the

government spending burden up to the mid-1970s, when market-price GDP was apparently adopted in a politically-motivated attempt to reduce the published government spending ratio. The factor-cost measure is also best for long-term historical comparisons because it is not distorted by changes in the indirect tax burden. At its post-war low point in 1955, for example, total general government expenditure amounted to 36.4% of factor-cost GDP and 32.8% of the market-price measure, representing a discrepancy of 3.6 percentage points. Last year, the corresponding ratios were 48% and 42.5%, representing a discrepancy of 5.5 percentage points, while the 2009 Budget forecasts imply ratios of 53.4% and 47.4%, respectively, for 2010, a difference of 6 percentage points. The indirect-tax distortion becomes even more marked if one attempts to make comparisons with the far lower spending ratios that prevailed before World War II.

The factor cost measure of GDP has been given less prominence by the ONS in recent years than the hybrid GDP at basic-prices. The basic-price measure excludes most, but not all, indirect taxes and is sometimes referred to as Gross Value Added (GVA). The trends in the government spending ratio using the factor-cost and basic-price measures of national output are similar, because the two definitions are reasonably close to each other. However, the exact ratios can differ by around 0.5% of national output, with the public spending and tax burdens coming out lower using basic-price GDP as the denominator. The historic sources only provide market-price and factor-cost measures, however. This explains why we have chosen to largely ignore the basic-price measure from now on.

That the precise measure of national output used as an indicator of the burden of public spending is not just a trivial accounting point can be seen from Table 1. This shows that the market price measure of national output totalled almost £1,443bn in 2008, the basic price measure amounted to just over £1,294bn, and factor-cost GDP was around £1,278bn. This means that the market-price variable was almost £165bn (12.9%) higher than the factor-cost measure, and that the share of total general government expenditure (GGE) in money GDP was 42.6% in calendar year 2008 if the market price measure is used, and 48.0% if the arguably superior factor cost measure is employed. This represents a difference of 5.4 percentage points. The bottom three rows of Table 1 shows what happens if the £41.25bn value of North Sea oil and gas output is subtracted from GDP, as some would argue should be the case.

If one then tries to estimate the size of the private sector as a residual, by subtracting total general government expenditure from each of the three GDP definitions that include North Sea output, the arithmetic becomes as follows.

- Using market-price GDP, the non-socialised element becomes £829bn, and the ratio of government to private spending becomes 74.1%.
- Using basic-price GDP/GVA the private sector contracts to £680bn and the public/private ratio is 90.2%.
- If the factor-cost measure of national output is employed, the private sector shrinks to £664bn and the ratio of government spending to private GDP becomes 92.4%.
- If North Sea oil and gas production is taken out as well, the last two figures for the factor-cost measure become £623bn and 98.5%, respectively.

Is there a best buy?

These embarrassing discrepancies give rise to two issues. The first is whether it is conceptually right to be concerned about the public/private spending ratio rather than just the share of government spending in GDP, regardless of how GDP is defined. The second is whether the choice of potential measures can be narrowed down by eliminating less suitable candidates. What would clearly be wrong, however, would be to bend the choice in order to toe a particular party line. It was argued in Smith (2006) that the state cannot fund itself, and that a more relevant measure of the tax and spending burdens is their ratio to the non-socialised element of national output. Essentially, the argument was that, if a taxpayer carries one bureaucrat (or welfare recipient) on his or her back, the ratio is “one to one”, not “one to one plus one”, and that if the taxpayer carries two bureaucrats, the ratio is “two to one”, not “two over three”, and so on. It was also suggested that this may explain why the tax burden feels more onerous to private taxpayers than is shown by the official figures.

Similarly, expressing fiscal deficits as a share of total GDP can also give a misleading indication of fiscal irresponsibility. The government cannot absorb its own debt – only the domestic private sector and overseas residents can do that. This means that funding a budget deficit becomes progressively more difficult as the share of the private sector in GDP declines.

Public choice theory suggests that official data is produced by the bureaucratic and political classes to further their own interests, and not those of the citizenry as a whole. This may explain why few people in authority question whether total GDP at market prices is the most appropriate scaling factor when measuring the tax and spending burdens. However, market-price GDP is so heavily distorted by its changing indirect tax component that it is hard to justify it as a measure of either the level of, or the historic change in, the government spending burden. This leaves the factor-cost measures of national output for long-term comparisons and also the dilemma of whether one should strip out North Sea oil production from whichever measure of national output is preferred. A personal view is that it makes sense to strip out both North Sea output and the taxes thereon when attempting to measure the underlying tax burden. However, the case is more ambiguous with respect to spending. This is because oil production does provide an income for society as a whole; the main concern being how long it can be expected to last. Figures on both bases can be provided on request.

Historical trends in the government spending ratio

It is obviously possible to generate a whole set of measures of the government spending burden and the public/private spending ratio and annual and quarterly data banks have been constructed to allow this to be done quickly and easily. The annual data set has been pushed back into the late nineteenth century using the figures published in Feinstein (1972) and Smith (1981). There are two noticeable breaks in the data series concerned. The first was in 1920 when Southern Ireland ceased to be part of the UK. The second major break happens in 1946 when the current ONS data runs out. In both cases, chain linking was employed to bring the historic data onto the modern definitions. These adjustments were quite large on occasion. The

present official definition of GDP in the overlap year of 1948, for example, is some 4.6% higher than that given by Feinstein, while the loss of Southern Ireland in 1920 seems to have reduced national output by 3.9%. In other cases, however, the latest data seemed to be consistent with the pre-1946 figures. Government subsidies, national insurance contributions, and direct tax receipts are all examples of where zero or only trivial scaling adjustments were required. Where very large break adjustments were required - for example, government trading income and interest receipts – it was decided not to back-cast the data because the result would have been too inaccurate. This means that it has not been possible to produce as full a set of historic accounts as would have been desirable, and no way has yet been found to back-cast the PSNB[1] and PSNCR[2] definitions of public sector borrowing, for example. General government non-tax receipts have run at around 1.7% to not quite 2% of GDP in recent years.

Chart 1: Ratios of UK general government expenditure and private expenditure to UK GDP at Factor Cost 1900- 2008 with implied Budget forecasts for 2009 and 2010

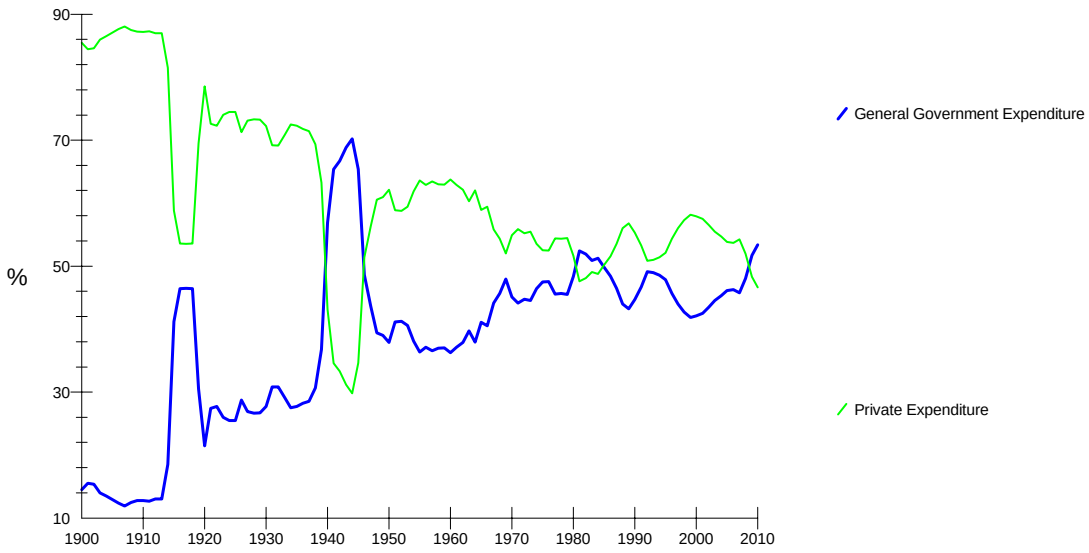


Chart 1 (above) shows the ratios of total UK general government expenditure and the residual private sector to the factor cost measure of money GDP using annual data from 1900 to 2008. The chart also includes the implied projections for this year and 2010 that can be estimated from the information provided in the 2009 Budget documents (see next section). Chart 1 reveals that the ratio of general government spending to the factor cost measure of GDP fluctuated between 12% and 15.5% before the First World War, and peaked at 46.5% in the three years 1916 to 1918, before falling to 21.5% in 1920. It then spent much of the inter-war period fluctuating between 25.5% and just below 31%, before hitting a record 70.2% in 1944, when the war effort was at its peak. The government spending ratio then declined to reach a low-point of 36.5% to 37% in the mid- to late-1950s. After that, it started a steady upwards climb, firstly, under the paternalist Conservative administration of Harold

[1] Public sector net borrowing.

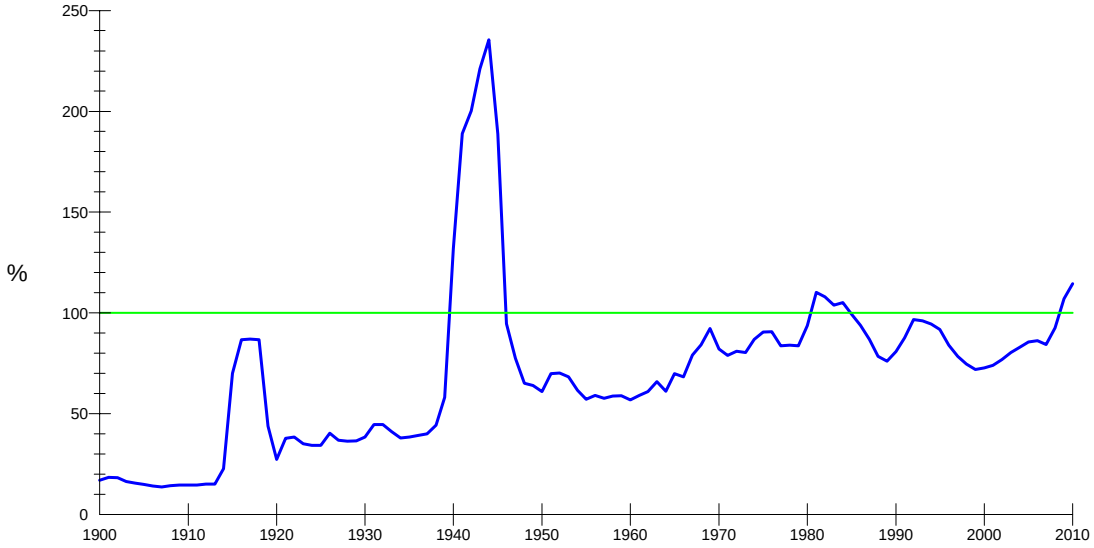
[2] Public sector net cash requirement.

Macmillan and subsequently during the fiscally profligate 1964-1970 Labour administration. The latter saw the spending ratio temporarily peak at 48% in 1969 when the UK was bailed out by an International Monetary Fund (IMF) loan. The government spending ratio then fell to 44.5% in 1973 during the Conservatives' Heath–Barber credit boom of the early 1970s, but then rose rapidly as a result of recession and the big spending policies of the post-1974 Labour government. The spending ratio hit a peak of 47.5% in 1975 and 1976, at the end of which the UK again had to borrow from the IMF.

In 1979, Lady Thatcher inherited a spending ratio of 45.5%. However, this figure rose to 52.4% during the recession of 1981 before falling to 44.7% by 1990, when she left office. With hindsight, it looks as if Lady Thatcher's main achievement was to break the back of the upwards momentum in the state's share of GDP. There was probably no underlying reduction in the spending ratio between 1979 and 1990, after allowing for the business cycle. Britain's membership of the Exchange Rate Mechanism (ERM) and the accompanying recession under Prime Minister John Major saw the government spending ratio peak at 49.1% in 1992, when sterling was ejected from the ERM system, and the ratio was down to 44% when New Labour took office in 1997. This figure subsequently declined to 41.8% in 1999, during Gordon Brown's brief flirtation with 'Prudence', but had risen to 48% by 2008. The 2009 Budget projections imply that the ratio of general government expenditure will rise to 51.7% in 2009 and 53.4% in 2010. The latter will be the highest ratio since World War II and 6.9 percentage points above the peak recorded in World War I.

Chart 2 shows the ratio of general government expenditure to the non-socialised component of national output, defined as factor-cost GDP less government spending. The 100% line, at which government spending equals private spending, has also been marked on the chart. Chart 2 confirms that we are now sailing into uncharted peacetime territory as far as the government spending burden is concerned, even on the implied official forecasts which may well prove to be over-optimistic. In terms of the piggy-backing bureaucrats analysis, the private sector was carrying less than 15% of its own weight before 1914, and some 35% to 40% in the inter-war period. The post-World War II low-point was the 57.7% recorded in 1957 while the previous peak ratio of public-sector to non-socialised GDP in peacetime was the 110.2% recorded in the 1981 recession. This ratio was 92.4% in 2008. However, the Budget forecasts imply a rise to 107% this year and 114.5% in 2010.

Chart 2: Ratio of UK general government expenditure to private GDP 1900 to 2008 with implied Budget forecasts for 2009 and 2010



Manipulating the Budget forecasts

At this point, it is appropriate to explain how the HM Treasury forecasts released with the 22nd April Budget were manipulated arithmetically to ensure that they were consistent with the historical calendar year data. Stage 1 was to ensure consistent definitions of the variables concerned. Stage 2 was to convert the HM Treasury forecasts from market-price to factor-cost GDP. Stage 3 was to translate the Treasury's financial year projections into their calendar year equivalents.

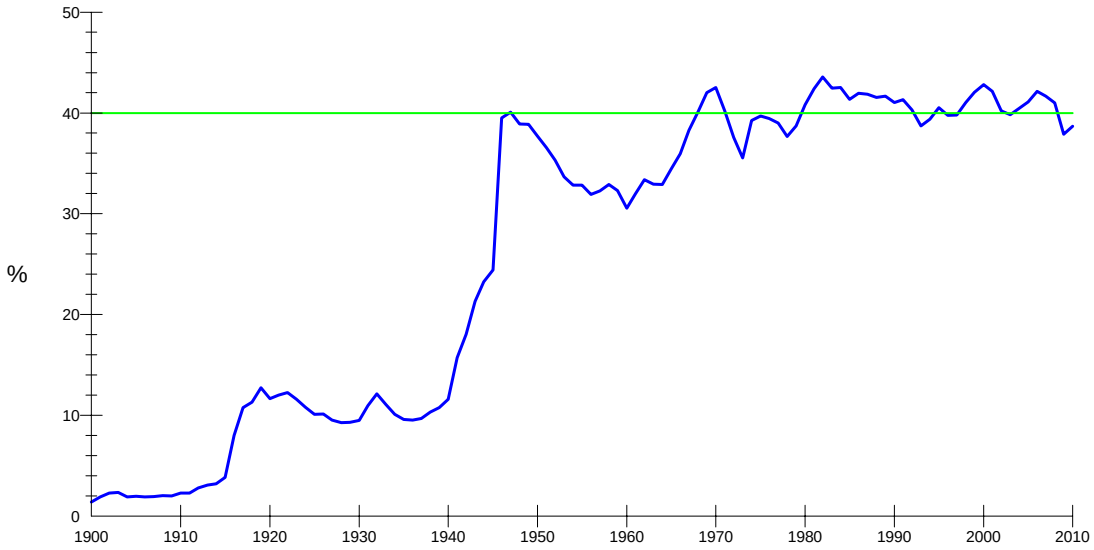
As far as Stage 1 is concerned, the relevant financial year totals for general government transactions by economic category were taken from Table 2.7 (page 36) in the document *Budget 2009: the Economy and Public Finances – Supplementary Material* that accompanied the main Budget report. Table 2.7 also included 'outturns' for 2007-08, 'estimates' for 2008-09, and 'projections' for 2009-10 and 2010-11. Taxes paid directly to the EU – or the 'own resource contribution to the EC' in official jargon – were taken from Table 2.9 (page 40) in the same document.

Regarding Stage 2, HM Treasury publishes its predictions for money GDP at market prices in Table C1 (page 218) of the main *Budget 2009* report. Since factor-cost GDP *equals* market-price GDP *less* 'taxes on production and imports' *plus* subsidies – figures for which are given in supplementary Table 2.7 - it is possible to work out the public spending and tax burdens implied by the Budget forecasts using both the market-price and factor-cost definitions of national output.

These figures are then recast onto a calendar year basis in stage three by taking a weighted average of the previous and current financial year data. For example, calendar 2009 *equals* 25% of fiscal 2008-09 *plus* 75% of fiscal 2009-10. In order to check that that this was reasonably accurate, calculations were performed on the known data for earlier years. Normally, the discrepancy in the main ratios between

the actual and interpolated calendar year data was relatively small, so this seems a reasonably acceptable procedure in practice.

Chart 3: Ratio of UK non-oil tax receipts to UK non-oil GDP at factor cost 1900- 2008 with implied Budget forecasts for 2009 and 2010

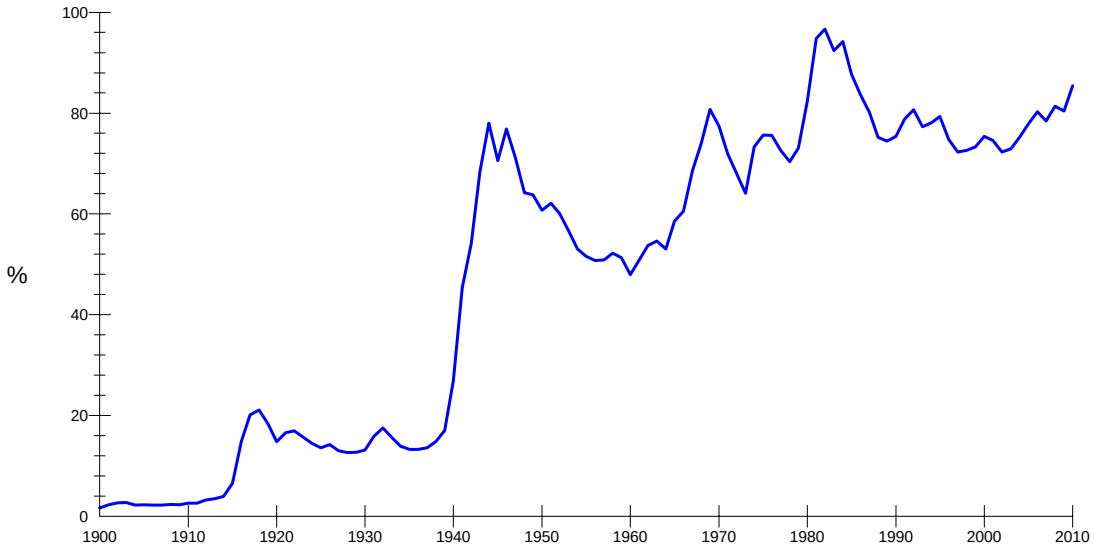


Are the public finances sustainable?

Whatever the precise measure employed, it is clear that the 22nd April Budget revealed one of the worst looming fiscal crises in Britain's peacetime economic history. One reason is that the UK is now caught up in a sudden and severe international recession. However, the government has also recklessly increased its discretionary spending since 2000, and is trying to fight the present recession with costly Keynesian pump-priming measures of doubtful effectiveness. There are also the costs of the bail out of the UK banking sector, which are not yet fully documented. The question is whether it is possible to fund government spending on this scale. The government's Budget constraint means that all public spending has to be financed either by taxes, borrowing in the financial markets or borrowing from the central bank. The latter course is normally associated with ultra high inflation.

Chart 3 (above) shows the ratio of UK non-oil tax receipts to the factor-cost measure of non-oil GDP. The chart also includes a horizontal line at 40% because this seems to represent an approximate upper limit to the sustainable taxable capacity of the economy. There are signs of business cycle fluctuations in the tax ratio, as one would expect with a progressive tax system, but it does look as if 40% or so represents, as an approximate rule-of-thumb, the economic limit to the taxable capacity of the non-oil economy. One reason is that the ratio of non-oil tax receipts to non-oil private sector GDP measured at factor cost was running at a crippling 81.4% last year. The Budget forecasts imply that this ratio will ease to 80.4% this year but rise to 85.4% in 2010 on the basis of the author's projections for the value of North Sea oil output (chart 4).

Chart 4: Ratio of UK non-oil tax receipts to UK non-oil private sector GDP at factor cost 1900- 2008 with implied Budget forecasts for 2009 and 2010



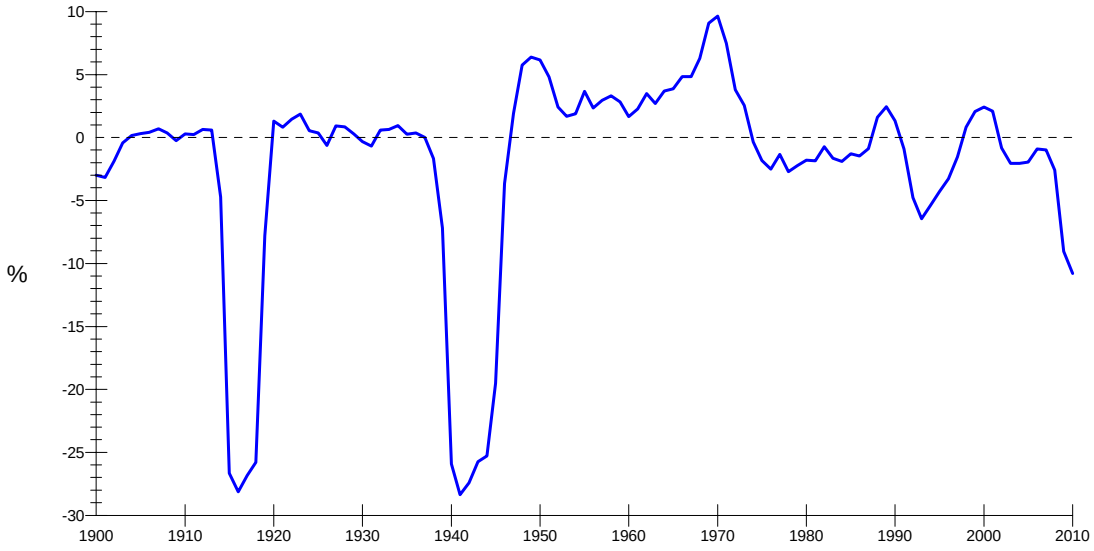
The more detailed analysis of government spending and tax receipts contained in Appendix 1 suggests that taxes on income and wealth, indirect taxes plus local authority levies, and social security taxes have all reached their effective upper limits in relation to national output over the past two-to-four decades. This may explain the government's increasing resort to unconventional 'stealth' imposts and the administrative tightening of the screws to boost tax revenues.

If raising the tax burden on the private sector of the UK economy is not an option, the next question that arises is whether the historic evidence suggests that the government's borrowing projections are sustainable. Unfortunately, it is not possible to back-cast figures for the PSNB definitions of public sector borrowing before 1946, because there is no information on many of the capital transactions engaged in by the public sector, while ONS figures for the PSNCR only go back to 1963. However, it is possible to compare Feinstein's figures for the current budget surplus with the latest ONS estimates over the period 1946 to 1965. This suggests that they are close enough to be used for graphical purposes (chart 5 below). However, the numbers are less consistent than those presented earlier and should only be treated as broad brush orders of magnitude. One reason is that it is not appropriate to use methods such as chain-linking when the variables concerned can take positive or negative values.

Chart 5 looks pretty horrifying as it stands, and shows a far larger current deficit than that recorded in the slump of the inter-war period, let alone the post-1945 experience. The HM Treasury projections are noticeably smaller than the deficits recorded during the two world wars, however. On both occasions the UK was largely kept afloat by loans from the USA. It seems unlikely that Britain will be so lucky this time round, particularly now that Chinese officials have stated that they were not interested in adding further British government liabilities to their foreign exchange reserves. The Budget forecasts imply that the ratio of the current budget deficit to

factor-cost GDP will rise from 2.6% in 2008, to 9.1% this year, and 10.8% in 2010. However, if private sector GDP is used as the yardstick the ratio goes from 5% last year, to 18.7% this year, and 23.2% in 2010. PSNB is projected to increase from 8% of factor-cost GDP in fiscal 2008-09, to 14.1% in 2009-10, and 13.5% in 2011-12, according to the April Budget forecasts. There must be serious doubt whether deficits on this scale can be financed in a non-inflationary manner, at a reasonable real rate of interest, without very large capital inflows from abroad. In turn, it is hard to see why these should be forthcoming now that the British economy has become such a highly taxed economy by international standards.

Chart 5: Ratio of UK general government surplus to UK GDP at factor cost 1900-2008 with implied Budget forecasts for 2009 and 2010



Conclusions

The main conclusions are as follows:

- The 2009 Budget projections imply that the ratio of general government expenditure will rise to 51.7% in 2009 and 53.4% in 2010. The latter will be the highest ratio since World War II and 6.9 percentage points above the peak recorded in World War I. We are now sailing into uncharted peacetime territory as far as the government spending burden is concerned, even on the implied official forecasts which may well prove to be over-optimistic.

- The measurement issues involved are tedious but important and have become more so over the years as government spending has taken a larger share of national output. In 1900, for example, UK general government expenditure was 13.9% of market-price GDP, 14.5% of the factor-cost measure, and 17.0% of private GDP at factor cost. The differences between these various measures are extremely small when compared with their 2008 equivalents set out above. The importance of accurate measurement will rise further over the next few years, as the share of the government sector in national output continues to

expand. It should be noted that there are certain off-balance-sheet items, such as public sector pensions that have not been considered.

- The official preference for the market-price measure of GDP as the scaling factor for public spending and tax receipts is indefensible. Not only does the market-price measure overstate the level of national output, the fact that it rises each time the indirect tax burden goes up means that it is a poor measure of movements in the government spending and tax ratios over time. A post-2010 Conservative government should revert to the pre-1970s practice and re-cast the HM Treasury forecasts onto the factor-cost measure of GDP in their first Budget. If nothing else, this will help bring home to the electorate the scale of the fiscal crisis that will have been bequeathed by the current government and make it easier to sell the requisite harsh medicine to the population at large.

- For the purposes of this paper, the ratio of government spending to private sector output has been highlighted because this brings out better the unprecedented peacetime burden now being placed on the economy's non-socialised sector. This concept is likely to become increasingly important as the government sector absorbs a growing share of GDP over the next few years.

- Tanzi and Schuknecht (2000) have claimed that there are no discernible benefits in terms of objective measures of human welfare from raising the share of government spending in the market-price measure of GDP much beyond the 30% to 35% mark. This currently translates into 34% to 39½% on the factor-cost measure. The last time that the UK spending share did not exceed this range was in 1964, the year that the first Wilson Labour government achieved office. More generally, our study suggests that even a predatory state that is simply trying to maximise the resources under its command cannot sustain the spending levels that are likely to be recorded in Britain next year. If it is assumed that: the limit to taxable capacity is 40% of GDP; a Maastricht-style borrowing limit equivalent to 3½% of factor-cost GDP is acceptable; non-tax receipts bring in 2% of GDP; and North Sea oil taxes a further 1%, then the sustainable spending ratio comes out at just over 49% of GDP after allowing for the multiplicative nature of the calculation. This is 4.5 percentage points of factor-cost GDP less, or £58½bn less, than Mr Darling intends to spend next year.

- Britain now has an extremely highly socialised economy by the standards of previous generations. This has implications for aggregate supply and the sustainable rate of economic growth. Subsequent research has confirmed the rule of thumb set out in Smith (2006) that adding 1 percentage point to the share of non-productive government spending in market-price GDP slowed the long-term growth rate of real national output per head by some 0.1 to 0.2 percentage points each year (see: Pak Hung Mo (2007) and Afonso and Furceri (2008)). The rise of 11.1 percentage points in the UK spending ratio on the market-price OECD definition since 2000 (OECD (2008)) suggests that this country's sustainable growth rate may have been cut by some 1 to 1.7 percentage points compared with if what would have happened if the 2000

spending ratios had been maintained. The current recession may not just be the result of the banking crisis – and, let us not forget, the 2008 surge in the price of oil – but also result from a supply withdrawal caused by profligate government spending. Supply withdrawals also cause financial crashes. This is because the real return on capital falls when productive potential slows. The markets then fall out of bed when they realise that this has happened. Britain's current profligate fiscal policies are more likely to represent a progression to the more advanced and deadly stage of the disease - that is 1970s-style stagflation - than a cure.

- Finally, the recent revival of so-called 'crass-Keynesian' policies makes it worth noting that when Keynes wrote his *General Theory* in 1936 general government expenditure was only 28¼% of Britain's factor-cost GDP, or just over one half of next year's officially projected figure. Furthermore, Keynes was born in 1883, so that a ratio of 10% to 15% would have been considered normal during his formative years as an economist, and he died in 1946 before the British welfare state was properly established. The massive increase in the government spending ratio since 1936 suggests that Keynes would not be advocating the same medicine today, because of the likelihood of a fatal overdose. The same applies to the USA. The figures given in Tanzi and Schuknecht (2000) show that government spending in the US was 12% of market-price GDP in 1920, and 19.4% following the New Deal in 1937, compared with the 39.8% that the Organisation for Economic Co-operation and Development (OECD) are expecting for this year. There is evidence from his post-War II correspondence with Colin Clarke that Keynes feared that a government spending ratio of much over 25% would have irreversible inflationary consequences.

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Appendix I: More detailed graphical analysis of UK general government expenditure and tax receipts

Chart 6: Ratio of UK general government current expenditure to UK GDP at factor cost 1900-2008 with implied Budget forecasts for 2009 and 2010

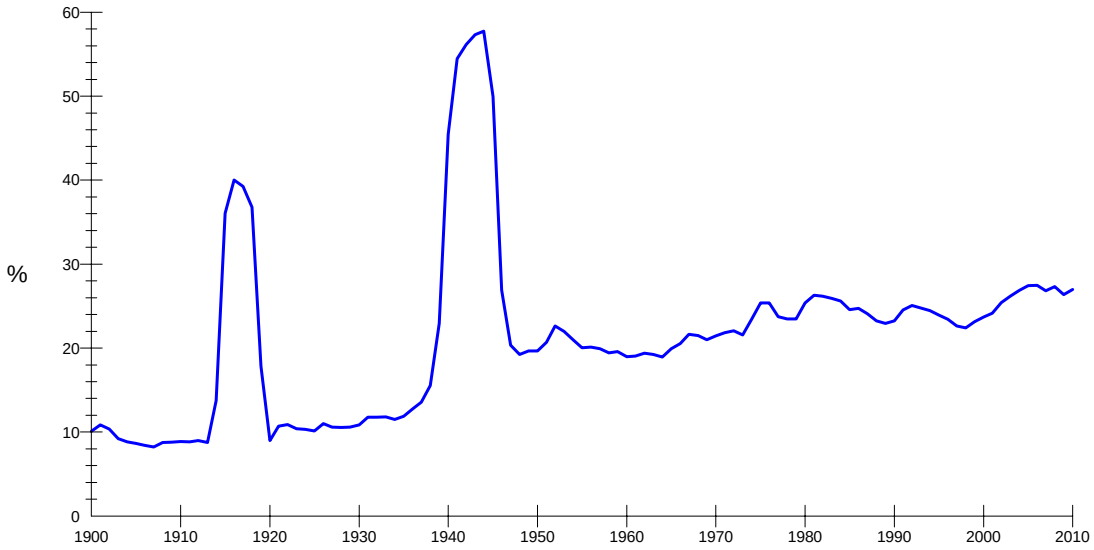


Chart 7: Ratio of UK general government debt interest and welfare payments to UK GDP at factor cost 1900-2008 with implied Budget forecasts for 2009 and 2010

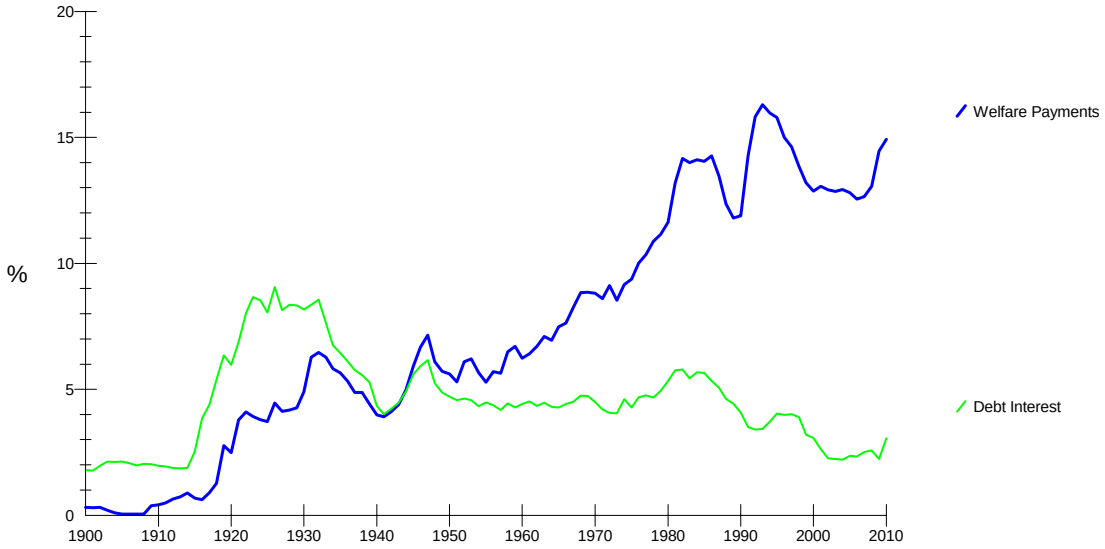
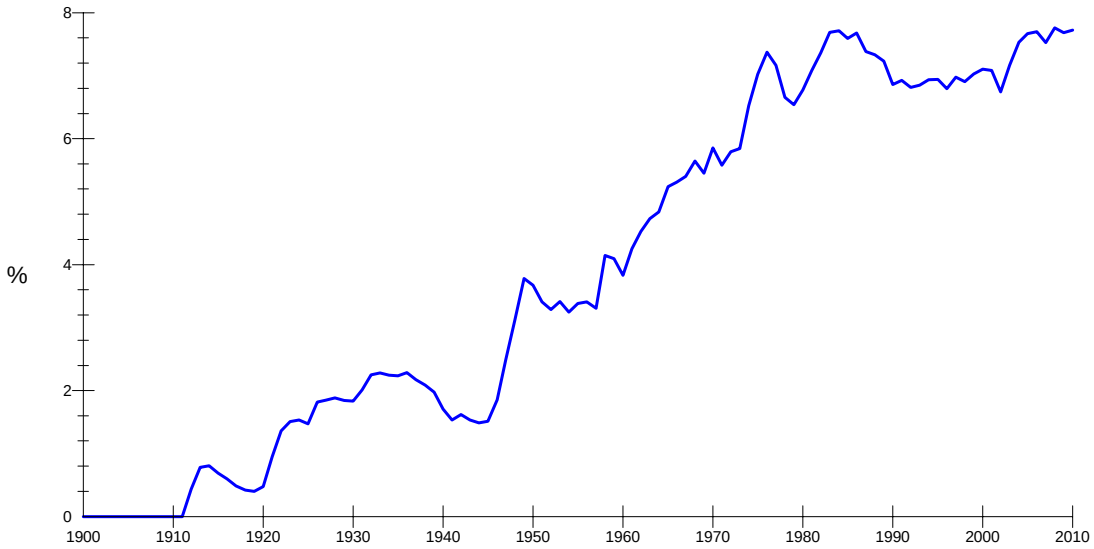


Chart 8: Ratio of UK Taxes on income and indirect and local authority taxes to UK GDP at factor cost 1900-2008 with implied Budget forecasts for 2009 and 2010

Chart 9: Ratio of UK social security taxes to UK GDP at factor cost 1900-2008 with implied Budget forecasts for 2009 and 2010



Finally, Table 2 (below) provides a more detailed analysis showing the course of some of the main individual government spending items over the period since 1870. The pre-1900 data should be regarded as extremely tentative, however, which is why they have not been used in the main body of this note.

Table 2: Ratios of main categories of UK general government expenditure to money GDP at factor cost at ten-year intervals (%)

	Government final current expenditure	Grants to persons	Subsidies	Debt interest	Government investment and other items	Total general government expenditure
1870	5.3	0.0	0.0	3.6	0.9	9.8
1880	5.7	0.0	0.0	3.2	1.5	10.4
1890	6.3	0.0	0.0	2.5	0.9	9.7
1900	10.1	0.3	0.0	1.8	2.3	14.5
1910	8.9	0.4	0.0	2.0	1.5	12.8
1920	9.0	2.5	2.1	6.0	1.8	21.4
1930	10.8	4.9	0.5	8.2	3.3	27.7
1938	15.5	4.9	0.8	5.6	3.9	30.7
1950	19.7	5.6	4.0	4.7	3.9	37.9
1960	19.0	6.2	2.1	4.4	4.6	36.3
1960	19.0	6.2	2.1	4.4	4.6	36.3
1970	21.4	8.8	2.0	4.5	8.4	45.1
1980	25.4	11.6	2.4	5.3	3.7	48.4
1990	23.3	11.9	1.0	4.1	4.4	44.7
2000	23.7	12.9	0.5	3.1	1.9	42.1
Wartime peaks						
1917	39.3	0.9	0.5	4.4	1.4	46.5
1944	57.7	5.0	2.7	4.5	0.3	70.2
Recent years						
2004	26.9	12.9	0.6	2.2	2.7	45.3
2005	27.4	12.8	0.7	2.4	2.8	46.1
2006	27.5	12.6	0.8	2.3	3.1	46.3
2007	26.8	12.6	0.7	2.5	3.2	45.8
2008	27.3	13.1	0.7	2.6	4.3	48.0
Budget forecasts						
2009	26.4	14.5	0.8	2.2	7.8	51.7
2010	27.0	14.9	0.7	3.1	7.7	53.4

Sources: Feinstein (1972), Smith (1981), UK Office for National Statistics (ONS) data bank, HM Treasury *Budget 2009* 22nd April 2009. Note: The statistics before 1900 are particularly unreliable. The figures for 1900 and 1950 are distorted by the Boer War and the Korean War, respectively.

Appendix II: An independent estimate of the prospective tax and spending burdens

The HM Treasury Budget forecasts have been taken at their face value in the main body of this note, despite the reservations that many commentators have expressed about the plausibility of the official projections. An alternative approach is to use the output of an independent macro-economic forecasting model, such as the one maintained at the author's Beacon Economic Forecasting (BEF). This is a quarterly macroeconomic model that has been in existence since 1984 and is regularly used to forecast ten-years ahead. The model's print out shows the ratio of general government expenditure to the basic price measure of GDP on a financial year basis, but projections for factor-cost and market-price GDP are also available and can be applied using 'off-model' calculations. The factor-cost figures are given below to maintain comparability with the calendar year figures presented earlier.

The latest data shows that total government expenditure was 46.2% of factor-cost GDP in fiscal 2007-08 and it is expected to have risen to 48.7% in 2008-09, on the basis of data for the first three quarters of the financial year. It is then predicted by the BEF model to increase to 52.5% in 2009-10, 54.3% in 2010-11, and 54.8% in 2011-12, before easing to 54.3% in 2012-13 and 53.8% in 2013-14, when the long-range Budget forecasts run out. The BEF projections subsequently show the government spending ratio easing to 51% by 2019-20 as the economy continues to recover and the assumed tight fiscal discipline bears fruit. This implies that there will be £1.21 of government spending for every £1.00 spent in the private sector at its peak in 2011-12, representing the highest burden since 1945. However, this ratio is expected to slowly decline thereafter although these projections should be regarded as a best-case scenario. This is because it has been explicitly assumed that both international and domestic output eventually return to their pre-credit crunch trends and that a far higher degree of spending restraint is practised over the next decade than over the past ten years.

The Budget deficit is also expected to reach a proportion of national output for which there is no previous peace time precedent. The latest BEF forecasts show the ratio of Public Sector Net Borrowing (PSNB) to factor-cost GDP rising from 12.5% in 2009-10, to 14.9% in 2010-11, before hitting a peak of 15.9% in 2011-12 and then easing to 7.5% by 2018-19. This compares with the run of deficits projected in the April 2009 Budget which show the implied ratio of the PSNB to factor-cost GDP hitting 13.9% in 2009-10 but easing to 13.4% in 2010-11, 10.2% in 2012-13, 8.1% in 2012-13 and 6.3% in 2013-14, when our own forecast is still as high as 14.8%. However, the Budget forecasts assume that the volume of general government spending grows by 4.7% in calendar 2009, and 1.1% in 2010, but falls by 1.4% in 2011. Real general government investment is also officially forecast to grow by 1.5% in 2009 and 2% next year, but fall by a massive 16.8% in 2011. We do not regard these 2011 volume falls as politically feasible, and this helps explain why public borrowing remains stubbornly higher in the BEF projections. This still represents the longest and largest run of fiscal deficits in Britain's peacetime history, however, regardless of which forecast proves correct. Government borrowing on this scale means that there is a significant risk that the Budget deficit and total spending will start feeding on themselves because of rising debt servicing costs leading to a sharp rise in the real returns on gilt-edged securities. This is expected to hit 4.8% where

the twenty-year gilt yield is concerned by 2012, using the RPIX inflation as the deflator, representing the highest real bond yield since 1996. The high real long-term rates of interest that result from sustained Budget deficits are one of the classic transmission mechanisms through which fiscal deficits crowd out private activity, especially productive private sector capital formation.

About the author

David B. Smith studied Economics at Trinity College, Cambridge, and the University of Essex, during the 1960s. He has since been employed at the Bank of England, Royal Bank of Scotland, National Westminster Bank, Cambridge Econometrics, London Business School and a London securities house, where he was Chief Economist from 1982 to 2006. David is a Visiting Professor in Business and Economic Forecasting at the University of Derby, Chairman of the Institute of Economic Affair's Shadow Monetary Policy Committee, and a visiting lecturer at the Cardiff University Business School. He is also a prolific broadcaster on Radio and Television. However, Professor Smith is perhaps best known for his quarterly macroeconomic model of the international and UK economies, which is maintained at his consultancy Beacon Economic Forecasting. His e-mail address is: xxxbeaconxxx@btinternet.com. His postal address is: 24 Beacon Way, Rickmansworth, Hertfordshire WD3 7PE, United Kingdom.