National Audit Office

Audit of Assumptions for the Budget March 1998

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Comptroller and Auditor General	17 March 1998

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Report by the Comptroller and Auditor General to the House of Commons

Statement of Responsibilities

1 In June of last year, and again in November, I reported the results of my audit of assumptions and conventions adopted to forecast the fiscal prospects, first for the July 1997 Budget (in the Government's White Paper Cm 3693), and then for the November pre-Budget report (as HC 361).

2 In these two reports I considered a total of nine assumptions and conventions which the Treasury had asked me to examine. These covered both economic and fiscal assumptions: the underlying rate of growth, unemployment, interest rates, and equity and oil prices; and the price indices used to forecast social security benefits and other public expenditure, measures on social security fraud and revenue evasion, the ratio of VAT receipts to consumers expenditure, and privatisation receipts.

3 The Chancellor of the Exchequer has indicated that he proposes not to change any of these assumptions for the purposes of the Budget. Having reviewed them, my judgement is that they remain appropriate. I have however noted that the oil price is now some $5 a barrel lower than at the time of the pre-Budget report. The assumption then made was that oil prices would remain close to recent levels; and in line with this convention, I understand that a lower price of $14.50 a barrel is being assumed for the Budget fiscal projections.

4 The Chancellor has now asked me to report on two further assumptions. These are that:

- For the purposes of fiscal projections in the medium term, when the economy is assumed to be on its trend path, the shares of labour income and of profits in domestic income are broadly constant.

- The funding assumptions used to project central government debt interest are consistent with the forecast level of government borrowing and with current financing policy as set out in the Debt Management Report.

As before, the assumptions apply over the five year period up to 2002-2003.

5 The further remit which I have received from the Treasury is in the following terms:

> 'As part of the NAO's continuing rôle in auditing forecasts of the public finances, to review the assumptions adopted for factor income shares, which are important for projections of tax revenues, and for funding, which are important for projections of debt interest.'

As before, the Treasury remains responsible for making projections of future public expenditure and revenue on the basis of these assumptions. I have not been asked to assess the way in which the forecasts are derived from the assumptions, although where appropriate my staff have checked that the assumptions have in fact been used for the stated purpose.

Basis of Report

6 As previously, I have reviewed the evidence which I judged to be relevant to the above assumptions, so as to reach an opinion on whether they were consistent and reasonable. In carrying out the examination, the National Audit Office has discussed the basis for the assumptions with the Treasury, and has reviewed relevant documentation. The Office for National Statistics was also consulted.

7 I have also considered the completeness of the assumptions on which I have been asked to report. In my two previous reports the aim has been progressively to extend the scope of my audit to cover the main assumptions used in making the fiscal projections. As part of its work on the further remit which is the subject of this report, the National Audit Office has considered whether there are any other assumptions which might have a material effect on the fiscal projections. The main one identified is the convention that the level of the exchange rate moves in line with an uncovered interest parity condition, consistent with the interest rates underlying the economic forecast; though this has little direct effect on the public finances. However I judge that there is no basis on which I could give an opinion on the reasonableness of a departure from this assumption for the future course of the exchange rate.

Report

Factor income shares

8 The Treasury assumes for the purposes of making its medium term fiscal projections that output in the economy is around its trend level and grows at the same rate as trend or potential output. This reflects the fact that it is not possible to take account of unforeseen future shocks to the economy which tend to move the economy off its trend path. At the trend level and rate of growth, a further assumption made by Treasury is that the shares of labour incomes and income from capital - profits - in national income are broadly constant over the period up to 2002-2003.

9 This factor share assumption is important for projections of equity prices which I examined in my Report on the Pre-Budget assumptions in November 1997, (HC 361, Session 1997-98). It also has a direct bearing on the public finances, since labour income and profits are taxed at different rates. Labour income is on average more highly taxed than company profits. The basic rate of income tax is 23 per cent and taking account of both employee and employer National Insurance contributions, the marginal tax rate at average earnings is 43 per cent, before any Budget changes. The standard rate of corporation tax is 31 per cent. The relative shares of total income in the economy represented by labour and profits will therefore affect the level of tax revenues. Making estimates of the effect is difficult, but Treasury simulations suggest that, if no second round effects on the real economy or on prices are allowed, a permanent one percentage point shift from profits to labour incomes could raise the total level of tax receipts by between £600 million and £1,200 million after two or three years.

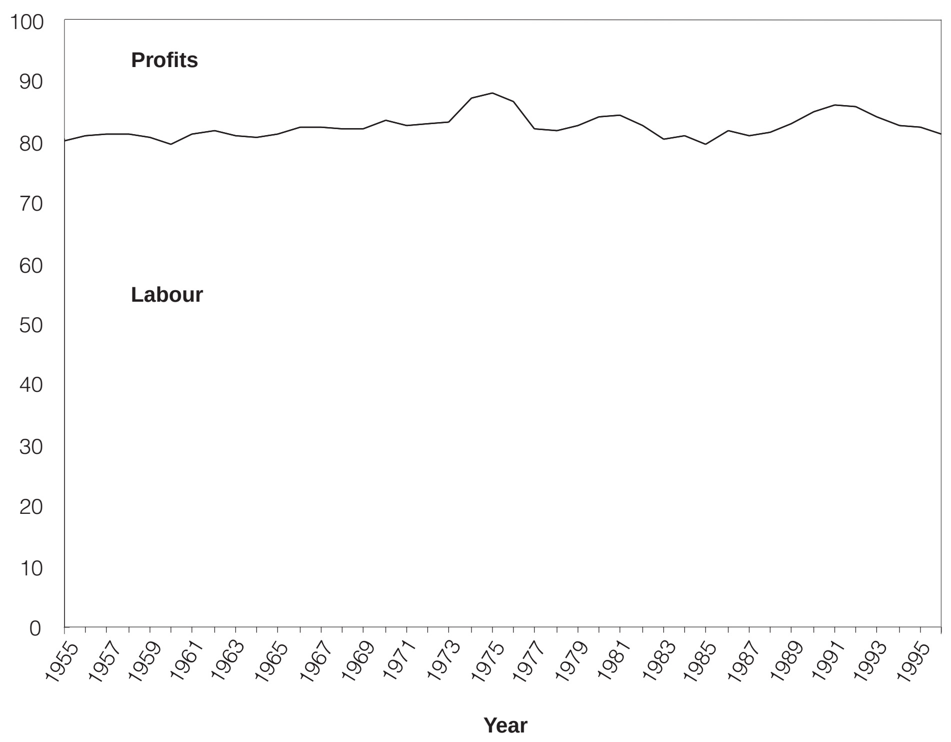
10 Mainstream economic theory gives grounds for thinking that the shares of labour income and profits in national income will tend to be constant, though this prediction depends on a number of assumptions, particularly about the nature of technology in the economy and the existence of competitive markets. The validity of these assumptions is difficult to assess unambiguously and I have therefore examined the empirical evidence for the assumption that the shares of labour income and profits are broadly constant when the economy is on trend.

11 In calculating labour and capital income shares, the Treasury uses the Office for National Statistics' national income definitions and defines labour income as income from employment and self-employment, net of personal sector stock appreciation. Capital income is defined as the profits of private companies and the gross trading surplus of public corporations and general government enterprises, net of stock appreciation. Stock appreciation is excluded from both labour incomes and profits on the basis that it is not the result of any economic activity, and in any case, the Office for National Statistics regard the data as highly uncertain. Rent is also excluded from national income when calculating shares of labour income and profits in national income, on the basis that there is a large and uncertain imputed element to represent the benefits of owner occupation. This imputed figure has increased as property rents have risen following de-regulation of the rented sector, rather than as an accurate reflection of increases in the benefit of home ownership. Excluding rent for the purposes of calculating factor shares also means that the percentage shares of labour income and profits add to one hundred.

12 On the basis of these statistical definitions, Figure 1 shows the pattern of the shares of labour income and profits for the period from 1955 - when relevant data first became available - to 1996. As can be seen, the shares are not exactly constant over the whole period, with the labour income share fluctuating from around 80 to 88 per cent of the total. The two main explanations for these fluctuations in the shares of labour and profits in the economy are **structural** and **cyclical** factors.

Figure 1 **Factor shares in domestic income net of stock appreciation and rent (1955-1996)**

Percentage of total income



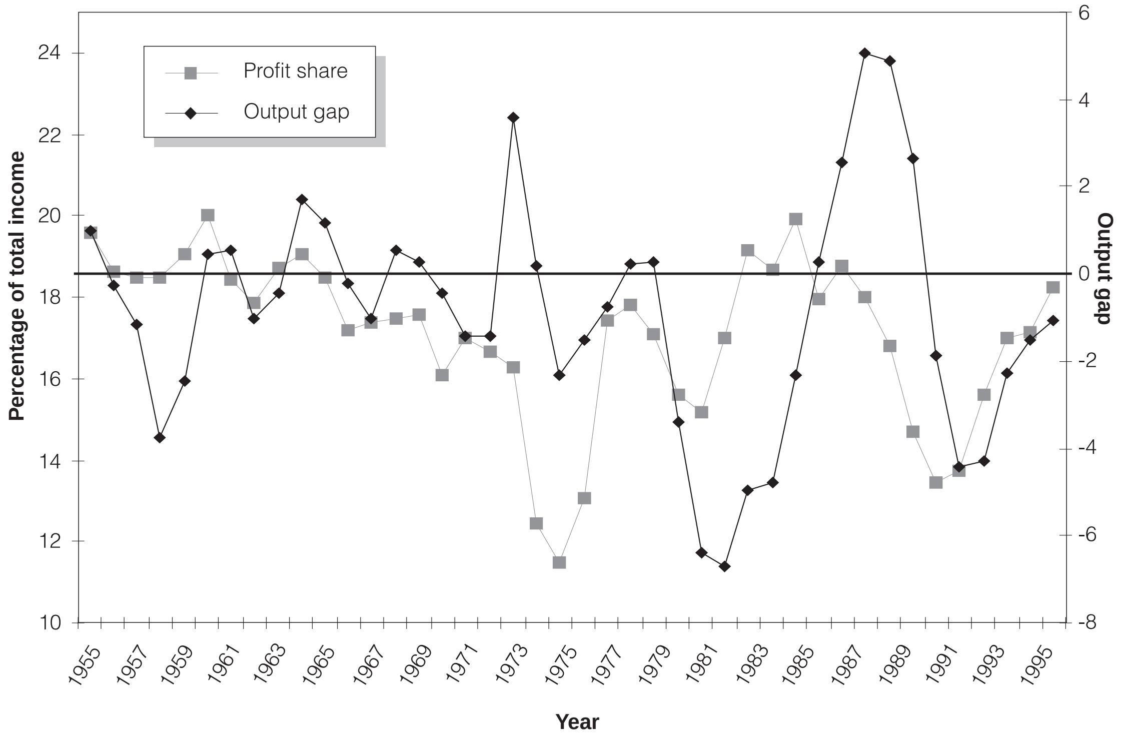
Source: Office for National Statistics

13 **Structural** factors tend to lead to one-off changes in the economy, which can produce a shift in the way the economy functions. For example, significant increases in labour supply due, say, to tax and benefit system reform, which translate into higher employment and output may temporarily involve real wage growth falling short of productivity growth. Changes in the real exchange rate will tend to have fairly long drawn out consequences for profit margins and real wages, and hence factor shares.

14 **Cyclical** factors also lead to changes in income shares. In the short term, the economy tends to deviate from its trend path, so there are periods when economic growth falls below or rises above trend. Figure 1 shows two noticeable peaks in the share of labour against profits. These peaks are in the mid 1970s and the early 1990s and correspond to periods of economic slowdown, when output fell relative to trend and labour productivity slowed. The peak during the economic slowdown in the early 1980s appears to have been less marked. However, this was a period of rapid shakeout in the employed labour force and the response of labour productivity differed from that in other recessions. Also, North Sea oil production began at around that time, boosting oil company profits. The Treasury believes that this may also have affected the share of profits in the economy, and this is supported by the fact that the share of profits of non-oil companies fell markedly more than the share of profits in the whole economy including oil companies during this period.

15 Figure 2 (overleaf) examines how factor shares and the economic cycle are related in more detail. It shows the relationship between the share of profits and the "output gap". The output gap is calculated by the Treasury as an estimate of the amount by which actual output differs from "potential" or "trend" output. It is an indicator of the amount of spare capacity in the economy. If the economy is on its trend path, the level of actual output should equal potential output and the output gap is zero. The output gap cannot be measured with complete certainty, as potential output is hard to estimate. The Treasury form a view based on sources such as the Confederation of British Industry survey of manufacturing, and the CBI and British Chambers of Commerce surveys of capacity utilisation in services, together with a range of labour market and other economic indicators. Figure 2 shows that when output falls relative to trend, the profit share in national income tends to fall. This share tends to rise when output rises relative to trend.

Figure 2: Profit share and output gap



Notes: National income excludes stock appreciation and rent.
Output gap defined as actual output minus potential output.

Sources: Office for National Statistics, HM Treasury

16 There is a theoretical basis for assuming that factor shares are constant, and there is also supporting empirical evidence provided allowance is made for structural shifts and cycles in the economy. The Treasury's medium term projections abstract from both these factors, and the assumption that factor shares are broadly constant when the economy is assumed to be on its trend path in the medium term is reasonable.

Debt interest

17 Central government gross debt interest was £25.9 billion in 1996-97, and accounted for 8.4 per cent of general government expenditure. At 31 March 1997 the National Debt stood at £419.5 billion and its composition is shown in Figure 3 opposite.

Figure 3 **Composition of the National Debt**

Figure 3a: Composition of the National Debt

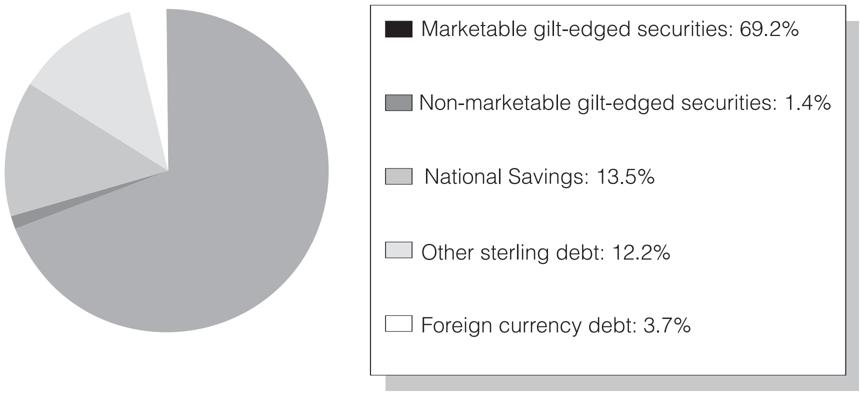
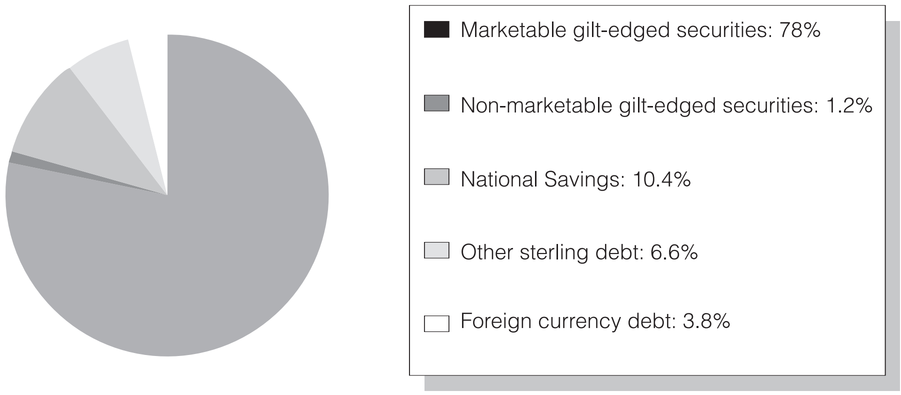


Figure 3b: Debt interest attributable to components of the National Debt



Source: NAO/Consolidated Fund and National Loans Fund Accounts 1996-97 Supplementary Statements

18 Marketable gilt-edged securities make up the largest component of the National Debt, and of the interest payable. Of marketable securities in issue at 31 March 1997, more than a third are due for redemption over the period of the fiscal projections, ending in 2002-2003. Thus the debt interest burden over the period will increasingly be influenced by future levels of interest rates, and by the level and maturity structure of new borrowing.

19 In my audit of assumptions for the July 1997 Budget, I considered the Government's proposal to adopt the convention that future interest rates would follow market expectations as shown by the financial futures market and by the yield curve for United Kingdom Government securities. Against the background that actual interest rates were to be independently set by the Bank of England's

Monetary Policy Committee, I found that this assumption was reasonable. The Treasury is continuing to use it for the fiscal projections underlying the March 1998 Budget.

20 I have now been asked to consider the consistency of the figures for Government borrowing which are used to project debt interest, with those from the Treasury's forecast of the borrowing requirement, so as to confirm that the provision for future interest costs is based on the full amount of anticipated borrowing. These costs will however be affected not just by the amount, but also by the structure of future borrowing. I have therefore also been asked to give an opinion on whether the assumed composition of borrowing which underlies the debt interest forecast is consistent with the financing policy set out in the Government's Debt Management Report.

21 The level of government borrowing is affected not just by the difference between expenditure and revenue, but also by changes in official reserves of gold and foreign exchange, which are financed by changes in borrowing. I note, however, that in its forecasts the Government is assuming no change in official reserves, in line with a policy of not intervening in the foreign exchange market to achieve a given level of sterling.

22 In examining the assumed level of borrowing, the National Audit Office reviewed the work done by the Treasury in projecting debt interest, in order to identify the changes in the stock of debt which had been taken into account in making the projections. My staff were able to confirm that these amounts were consistent with the forecast of the central government borrowing requirement in each of the next five years which underlies the public sector borrowing requirement forecast in the Financial Statement and Budget Report.

23 As regards the composition of borrowing, it is necessary to consider how far the central government financing requirement will be met by sales of government securities, or gilts, without recourse to additional short-term financing or debt. In practice there will always be some change in short-term financing each year. Although the issue of gilts is planned around scheduled auctions to achieve sales consistent with the forecast borrowing requirement, the actual level of the borrowing requirement typically deviates from the forecast. I note, however, that it is the Government's intention to follow a full gilt financing rule, taking one year with another, and that its projections therefore assume no net change in short-term financing. The other element in the forecast financing is the contribution of National Savings, on which policy assumptions are made.

24 The relevant figures are shown in Figure 4, covering the forecasts of the borrowing requirement associated with the three cases for real public spending growth of 2¼, 1½, and ¾ per cent from 1999-2000 onwards.

Figure 4

Forecast financing of the Central Government Borrowing Requirement

Year	**Gross Gilt Sales**	**National Savings Net Contribution**	**Gilt Redemptions**	**£ billion** **Central Government Borrowing Requirement (Repayment)**
1998-99	19.3*	1.0	16.7	3.7
(a) growth in public spending 2¼ per cent				
1999-00	18.3		14.7	3.6
2000-01	17.1		18.4	(1.3)
2001-02	11.7		17.2	(5.4)
2002-03	10.4		20.2	(9.8)
(b) growth in public spending 1½ per cent				
1999-00	16.3		14.7	1.6
2000-01	12.8		18.4	(5.6)
2001-02	4.9		17.2	(12.3)
2002-03	0.6		20.2	(19.6)
(c) growth in public spending ¾ per cent				
1999-00	14.3		14.7	(0.4)
2000-01	8.6		18.4	(9.9)
2001-02	(1.9)		17.2	(19.1)
2002-03	(9.0)		20.2	(29.3)

* Comprised of £14.2 billlion of gross gilt sales and £5.1 billion of residual gilt sales from 1997-98.

Note: Figures may not sum due to rounding.

25 The Debt Management Report for 1998-99 states that in that year 75 per cent of gross gilt sales will be of conventional stocks, and 25 per cent will be index-linked subject to a minimum annual gross issue of £2.5 billion index-linked stock. Within conventionals, 25 per cent will be short-dated (3 to 7 years), 25 per cent medium (7 to 15 years), and 50 per cent long-dated (over 15 years). It also states that the planned net contribution from National Savings in 1998-99 will be around £1 billion.

26 The Debt Management Report states that the Government does not intend to maintain these proportions in future years. For the purpose of projecting the cost of debt interest, it has been assumed that the minimum annual gross supply of index-linked gilts will be £2.5 billion spread evenly across the range of maturities; and that within conventionals, 35 per cent will be short-dated, 30 per cent medium, and 35 per cent long-dated. However, the forecasting model used for this purpose makes no distinction between medium and long-term maturities, which are averaged.

27 For 1998-99, the National Audit Office has confirmed that the pattern of gilt issuance adopted in the Debt Management Report has been input to the calculation of the debt interest forecast. For subsequent years no explicit pattern has been set in the Debt Management Report, though it makes clear that the 1998-99 pattern is exceptional, and should have little effect on the maturity strucutre implied by the 1997-98 remit. The National Audit Office has confirmed that the pattern assumed for projecting debt interest in future years is consistent with a reversion to the 1997-98 remit after 1998-99.

Conclusion

28 In my opinion the two further assumptions which I have been asked to review reflect the available evidence, and are internally consistent.

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