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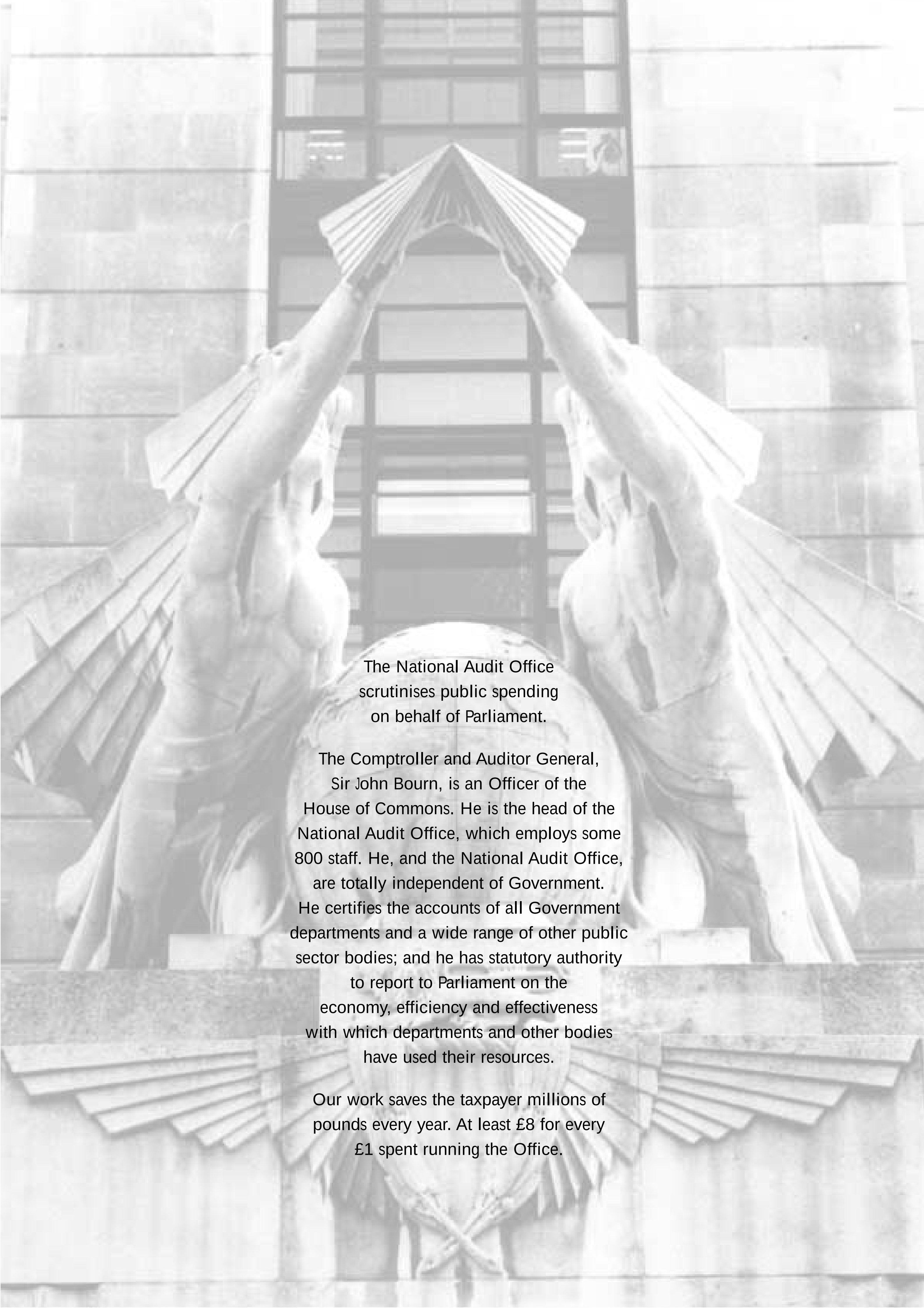
Audit of Assumptions for the 2003 Pre-Budget Report

REPORT BY THE COMPTROLLER AND AUDITOR GENERAL
HC 35 Session 2003-2004: 10 December 2003



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John Bourn	**National Audit Office**
Comptroller and Auditor General	**8 December 2003**

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Report

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

In this report

Statement of Responsibilities

1 Sections 156 and 157 of the Finance Act 1998 provide for me to examine and report on conventions and assumptions underlying the Treasury's fiscal projections that are submitted to me by the Treasury for examination.

2 For this Report, the Chancellor of the Exchequer has asked me to examine an extension to the existing assumption on the underlying ratio of Value Added Tax receipts to consumers' expenditure, to reflect an extension to HM Customs and Excise's VAT Strategy. The additional measures announced in the 2003 Pre-Budget Report are designed further to increase compliance and reduce debt owed by traders. The revised assumption is as follows:

- The underlying ratio of VAT receipts to consumers' expenditure will be assumed to fall by 0.05 percentage points a year[1]. The underlying ratio is adjusted for the effects of changes in rates and coverage of VAT and for the revenue impact of the direct and preventive, but not deterrent, effects of the VAT Strategy as extended in the 2003 Pre-Budget Report.

3 I have also been asked by the Chancellor to carry out a rolling review. The general remit is:

- to ensure that the key audited assumptions underpinning projections of the public finances remain valid, the Comptroller and Auditor General shall examine each audited assumption three years after its most recent audit:
  - (a) to review whether the assumption has resulted in reasonable and cautious projections of the elements of the public finances projections it relates to since it was first audited; and
  - (b) to check that it remains a reasonable and cautious assumption to use in future projections of the public finances.

4 In line with this remit I have examined:

- the assumption for the underlying ratio of VAT receipts to consumers' expenditure;
- the equity price assumption; and
- the consistency of price indices used to project government revenues and expenditures with the retail prices index excluding mortgage payments.

5 Current trends in the underlying VAT ratio have been hard to interpret and are under review by HM Customs and Excise. Latest data indicate that the ratio has risen to date in 2003-04, though it had previously been declining. In these circumstances, I have examined whether the assumption for the underlying VAT ratio over the last three years has been reasonable for the purposes of making fiscal projections. I will report on the reasonableness and caution of the

1 *The figure of a 0.05 percentage points reduction a year is that previously adopted and audited. Audit of Assumptions for the Pre-Budget 2000 Report, HC 959, Session 1999-2000.*

approach to be used for projecting the VAT ratio at the time of Budget 2004. In the meantime, the VAT ratio will be assumed to continue to fall by 0.05 percentage points in each year compared to the preceding one.

6 Two changes impact on the forward looking element of the rolling review of price index consistency. The Government announced in the 2003 Pre-Budget Report that the inflation target will now be based on a revised definition of consumer prices - the Consumer Prices Index, CPI, (formerly known as the Harmonised Index of Consumer Prices), rather than on the Retail Prices Index excluding mortgage interest payments. In addition, the Treasury proposes to make it explicit that consistency of price indices covers, as in the past, the projections of the public finances as a whole. The price consistency requirement will therefore be stated in terms of the following convention:

- Projections of price indices used to project the public finances are consistent with the Consumer Prices Index (CPI).

7 The Treasury has advised me that none of the other assumptions examined in previous Reports has been changed. As before, the Treasury remains responsible for making projections of future public expenditure and revenue on the basis of the audited and other assumptions.

Basis of Report

8 I have considered the available evidence gathered for this audit from relevant papers and discussions with officials in the Treasury, the Bank of England and HM Customs and Excise.

Report

The extended VAT Strategy

9 In the 2002 Pre-Budget Report, the Government announced the launch of a new VAT strategy designed to increase VAT yield through a combination of more effective collection of VAT, better compliance with VAT regulations, limiting opportunities for avoidance and reducing fraud. The existing assumption for the underlying ratio of VAT receipts to consumers' expenditure was adjusted to take account of the revenue impact of the direct and preventive effects of the Strategy but not deterrent effects[2].

10 An extension to the VAT Strategy has been announced in the 2003 Pre-Budget Report. Its aim is to achieve further reductions in VAT losses through the deployment of 450 additional staff over the next two years on assurance activity and on enhanced efforts to recover debt. These include extra specialist professionals to increase the speed with which HM Customs and Excise identifies and addresses significant revenue threats.

2 *Paragraph 11, Audit of Assumptions for the 2002 Pre-Budget Report, HC 109, Session 2002-03.*

11 To enhance assurance work, HM Customs and Excise intends to:

- undertake in-depth investigations of particular attacks on the VAT system that have been identified;
- subject more large businesses with complex VAT arrangements to increased scrutiny;
- perform more in-depth audits of selected cases; and
- increase the number of checks performed prior to making repayments.

12 On recovering debt owed by traders, HM Customs and Excise plans to tackle more debt cases early on, reduce the stock of aged debt and pursue missing traders' debts.

13 The new measures are intended to produce additional revenue in three ways:

- **direct effects** as revenue is produced by activities directed at particular non-compliant traders;
- **preventive effects** as these traders become more compliant in future years; and
- **deterrent effects** as other traders become more compliant as awareness of the new measures and of the increased probability of detection grows.

14 To reflect this additional revenue, the Treasury proposes to take account in the estimates of future VAT revenue for the fiscal projections an estimate of the direct and preventive effects of the extensions to the VAT Strategy. Consistent with the approach adopted for the VAT revenue measures announced in 2002, no allowance will be made in the fiscal projections for deterrent effects.

Direct effects

15 HM Customs and Excise expects additional VAT revenue to be related to the numbers of extra staff employed to identify and recover further unpaid VAT liabilities and also as a result of enhanced debt management activities. The nature of this work is broadly similar to existing activity, and the estimates of yield have been based on evidence of existing yields per case.

16 A number of adjustments have been made to introduce caution into the estimates. In the case of additional assurance activity, the revenue yield has been assumed to be below the average existing yield for similar activity in the last two years. Allowances have been made for a reduction in yield to account for the likelihood of diminishing returns associated with increased coverage of the trader base and the risk of non-payment of a proportion of the additional undeclared liability identified. HM Customs and Excise has assumed that the yield ranges from 50 per cent to 75 per cent of the yield from existing activities. No allowance has been included in the fiscal projections for any revenue yield flowing directly from the extra specialist professional staff whom HM Customs and Excise will employ.

17 In the case of debt management activity, it has been assumed that the amount of debt collected by each new member of staff will be equal to half the average yield achieved by existing staff. On the basis of operational data on debt recovery trends, HM Customs and Excise believes that within its current activity it can increase the proportion of actionable debt recovered from current levels of around 60 percent to 75 per cent in the longer term. For the additional measures, debt recovery work is expected to generate a smaller increase in the recovery rate, rising over time to about 63 per cent.

18 The direct revenue effects included in the fiscal projections are shown in **Figure 1**.

1 **The direct revenue effect included in the fiscal projections (£ millions)**

	2004-05	2005-06	2006-07	Total
Direct effect of additional assurance activity	0	25	65	90
Direct effect of additional debt recovery	185	195	200	580
Assumed direct effects	185	220	265	670

Source: HM Customs and Excise

Preventive effects

19 Operational research undertaken by HM Customs and Excise indicates that traders who are subject to an assurance visit are likely to be more compliant in future years, but that this effect wears off over time. Based on this research, estimates of the additional revenue generated from assurance activities have been included in the projections. The revenue impact is difficult to estimate with certainty, but HM Customs and Excise have assumed that it declines to zero over four years from the traders' undeclared VAT liabilities for the year the assessment is raised. This is slightly faster than the rate of decline indicated by the available evidence.

20 Due to uncertainties about the preventive effects of the debt recovery measures, HM Customs and Excise is not making any allowance for them and only the preventive effects of additional assurance activity are included in the fiscal projections.

21 The preventive revenue effects which the Treasury is including in the fiscal projections are shown in **Figure 2**.

2 **The preventive revenue effect included in the fiscal projections (£ millions)**

	2004-05	2005-06	2006-07	Total
Preventive effect of additional assurance activity	0	15	50	65

Source: HM Customs and Excise

Total revenue yield of additional activities

22 **Figure 3** shows the overall estimated total impact of the additional VAT Strategy measures included in the fiscal projections, totalling £735 million over the three years to 2006-07.

Conclusion on the revenue impact of extending the VAT strategy

23 The estimates of additional revenue taken into account in the fiscal projections are based on existing yield figures for similar activities. This is a reasonable approach, and by including only revenue estimates which are less uncertain and adjusting for the likelihood of diminishing returns and non-payment of a proportion of undeclared liabilities, the Treasury has exercised caution.

3 **Estimates of additional VAT revenue included in the fiscal projections (£ millions)**

	2004-05	2005-06	2006-07	Total
Additional assurance activity	0	40	115	155
Debt recovery	185	195	200	580
Total	185	235	315	735

Source: HM Customs and Excise

The underlying ratio of Value Added Tax receipts to consumers' expenditure

24 The assumption I audited in November 1997 and reviewed in 2000[3] concerning forecast VAT receipts was that:

- Given current uncertainties about the prospects for VAT receipts, explored in the recent report by the Working Group on VAT Receipts, there will be a slight fall in the underlying ratio of VAT receipts to consumers' expenditure.

25 HM Customs and Excise has applied this approach in producing its forecasts of VAT revenues over the rolling review period, so that the ratio of underlying VAT receipts to consumers' expenditure in the next financial year is 0.05 percentage points less than the estimated ratio in the current year. The underlying ratio adjusts for changes in VAT rates and coverage.

26 Taking account of the extension to the VAT Strategy, the assumption for the VAT Ratio is:

- The underlying ratio of VAT receipts to consumers' expenditure will be assumed to fall by 0.05 percentage points a year. The underlying ratio is adjusted for the effects of changes in rates and coverage of VAT and for the revenue impact of the direct and preventive, but not the deterrent, effects of the VAT Strategy as extended in the 2003 Pre-Budget Report.

27 When I reported in November 2000, the underlying VAT ratio had fallen in each year, from 8.9 per cent of consumption in 1988-89 to 7.3 per cent in 1995-96. There were, however, indications that the ratio might have been levelling out, as by 1999-00 the ratio had risen to 7.5 per cent[4].

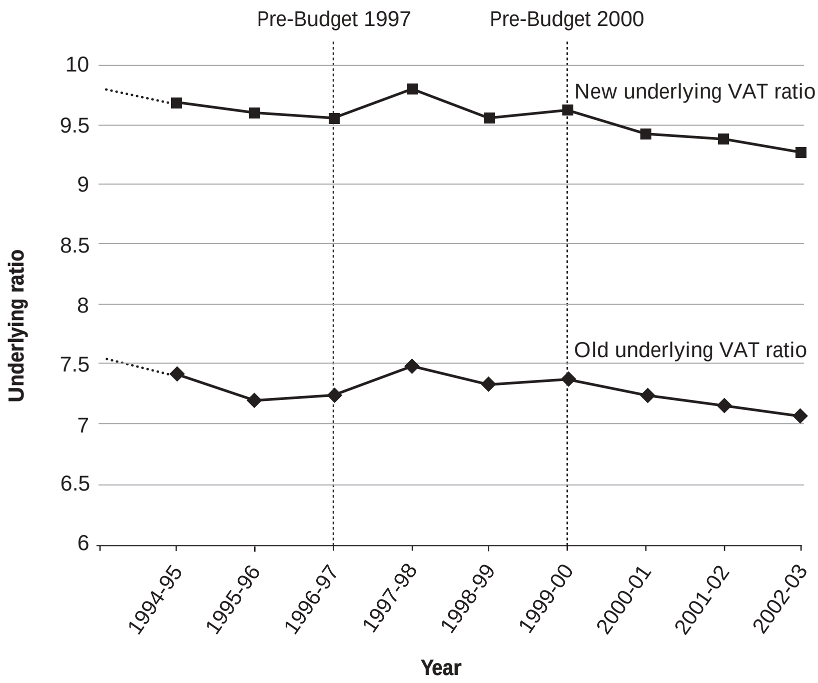
28 Since my last review, HM Customs and Excise has updated the way in which it calculates the underlying ratio, so that it now only takes account of changes in VAT rates and coverage since 1994 (the previous ratio used 1980 as a base year). HM Customs and Excise believes that the use of a more recent base year is more appropriate as it means that the calculation does not rely on estimates of the current impact of tax measures that were introduced in the 1980s, which can be subject to a wide margin of error.

29 As shown in **Figure 4**, the impact of this re-basing is to increase the underlying ratio by around two percentage points. It has very little impact on the overall trend. The ratios shown in Figure 4 also take account of revisions to historical data on consumers' expenditure published in 2003.

3 *Audit of Assumptions for the Pre-Budget Report November 1997, HC 361, Session 1997-98 and Audit of Assumptions for the Pre-Budget 2000 Report, HC 959, Session 1999-2000.*

4 *Audit of Assumptions for the Pre-Budget 2000 Report, HC 959, Session 1999-2000, paragraphs 20 and 21, Figure 2.*

4 **Underlying ratio of VAT receipts to consumers' expenditure 1994-95 to 2002-03**



NOTE

The figures shown for the old underlying ratio differ from those in my Report on the Audit of Assumptions for the 2000 Pre-Budget Report (HC 959, Session 1999-2000) because there have been revisions to historical consumers' expenditure figures, published by the Office for National Statistics in the 2003 National Accounts 'Blue Book'.

Source: HM Customs and Excise

30 Figure 4 shows that since my last review of the underlying VAT ratio in November 2000, it has fallen in each year. In the three years to 2002-03, the rebased underlying ratio fell by an average of 0.11 percentage points each year, compared to the assumed decline of 0.05 points used in making forecasts of VAT revenue. Over the three years this was equivalent to an overestimate of approximately £1.3 billion (or 0.7 per cent) in that part of the VAT revenue projections tied to the ratio, **Figure 5**.

31 Future projections of the underlying VAT ratio are problematic. Despite the fall in the ratio in the three years to March 2003, interim data for 2003-04 on VAT receipts and consumers' expenditure show a sharp rise in the estimated ratio to 9.6 per cent. This compares to 9.3 per cent in 2002-03. HM Customs and Excise is uncertain about the reasons for this volatility in the ratio.

32 For the purposes of the 2003 Pre-Budget forecast, HM Customs and Excise intends to continue to use the existing assumption of a 0.05 percentage points fall in the ratio for the following year compared to the current. This appears to be a cautious approach for the short term, given the latest outturn data indicating a rise in the underlying ratio to date during 2003-04.

33 In order to calculate the underlying ratio, estimates of the impact of changes in VAT rates and coverage and of the VAT strategy are deducted from actual receipts. Over time these impacts can become increasingly difficult to measure.

Because of this, and the substantial variations observed in the ratio, HM Customs and Excise has told me it will now:

- examine in depth the reasons for the changes in the underlying VAT ratio over recent years, some of which reflect revisions to historical data for consumers' expenditure that have only recently been made;
- investigate, in particular, the extent to which changes in the ratio reflect changes in the composition of spending liable to VAT that is not included in consumers' expenditure or changes in the timing of cash receipts relative to accrued VAT liabilities; and
- consider the scope for a new assumption, perhaps linked to the new measures of the VAT base that they have developed to measure the scale of losses, that might provide a better basis for forecasting than the present assumption.

5 Assumed and actual falls in the underlying ratio and the revenue effect (2000-01 to 2002-03)

	Assumed fall in underlying VAT ratio (percentage points)	Actual fall in underlying VAT ratio (percentage points)	Resulting revenue overestimate (£ millions)
2000-01	0.05	0.19	900
2001-02	0.05	0.06	100
2002-03	0.05	0.09	300
Total	0.15	0.34	1,300

Source: HM Treasury

34 This work will have been completed by the time of my Audit of Assumptions for Budget 2004 and I will report then on the reasonableness and caution of the approach that will be used for projecting the future level of the underlying VAT ratio.

Conclusion on the underlying VAT ratio

35 The assumption for the underlying ratio of VAT receipts to consumers' expenditure was cautious to the extent that some downward trend was built into the projections at a time when there was an expectation that it might have been stabilising. At the time of my last review in November 2000, the assumption was not unreasonable given the data available then. In practice the VAT ratio declined faster than assumed over the rolling review period and this has led to a £1.3 billion (0.7 per cent) over-estimate in that part of the revenue projections tied to the ratio. The assumption has therefore proved not to be as cautious as the evidence suggested it would be in November 2000.

36 Recently, the VAT ratio has risen significantly. An assumption of a continued decline in the ratio is a cautious response. Given the uncertainties, I welcome work now in hand by HM Customs and Excise to analyse trends in the VAT ratio. I will report on the reasonableness and caution of the approach to be used for projecting the VAT ratio at the time of Budget 2004.

Equity Prices

37 The equity price assumption directly affects projections of receipts from stamp duty, capital gains tax, inheritance tax and corporation tax on capital gains from life insurers, and so affects projections of the public finances. All other things being equal, (including exactly correct forecasts of equity turnover and realisation rates), underestimating equity prices will lead to an underestimation of government revenues.

38 While there is a great deal of information on companies and markets that could provide a basis for forecasting equity prices, this information is available to participants in the equity market, and the efficiency of these markets should mean that all available information will be reflected in existing market prices. Short term changes in equity prices will therefore depend on unforeseen events, which by their nature cannot be forecast.

39 In the longer term, consistent with economic theory, it is reasonable to expect that the value of equity prices will reflect the profitability of businesses and grow in line with this. The share of gross domestic product (GDP) represented by companies' profits has tended to be stable and is expected to remain so[5]. As a result, the Treasury assumes that nominal equity prices (represented by the FTSE all-share index) will grow from current levels at the same rate as GDP in money terms.

40 My previous examination of the equity price assumption for the 2000 Pre-Budget Report showed that the Treasury's forecasts made between 1997 and 2000 had tended to underestimate future equity prices, with the FTSE all-share index rising markedly faster than money GDP over those years[6].

41 In contrast, there has been a steep fall in equity prices over the three years of the rolling review period since 2000, while money GDP has continued to increase over the same period. As a result, the assumption for equity prices has been optimistic, with outturns below projections, as shown in **Figure 6**. Associated tax revenues were as a result less than expected.

42 **Figure 7** indicates that the revenue short fall was about an estimated £1 billion in each of the last three financial years, as a result of errors in projecting equity prices. Though this sum is minor in the context of overall government revenues of about £400 billion a year, it is more significant in terms of estimates of any requirement for public sector net borrowing.

43 Such errors in revenue forecasts reflect the short term volatility of equity prices - and in the last three years they have been more volatile than in any other three year period since 1990. As a result trends can alter quickly. In particular, Figure 6 above shows, for the two quarters since the Budget in March 2003, that equity prices have grown faster than money GDP and revenue has been greater than expected. In such circumstances it is extremely difficult to make accurate short term forecasts of future equity prices.

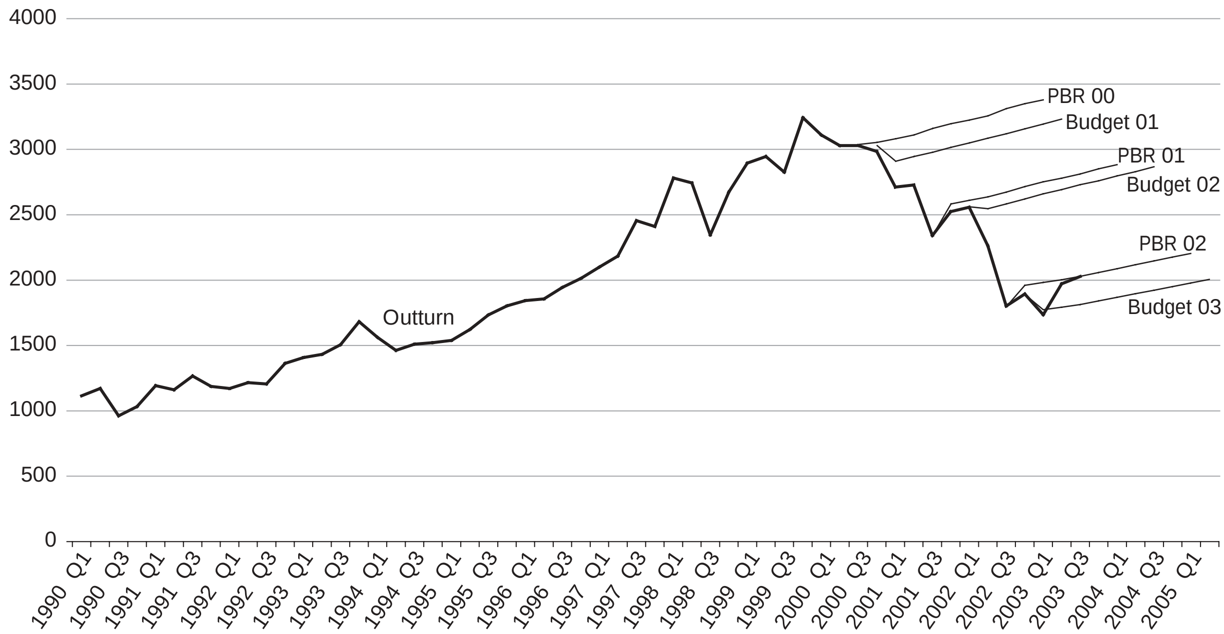
44 The assumption performs better in the longer term, though by no means in an exact way. Between 1990 and 2003, the assumption would have resulted in one year ahead projections of equity prices on average one percentage point higher than outturn. Excluding the impact of the last three years and taking 1990 to 2000 only, the year ahead projections of equity price growth were on average five percentage points below outturn.

5 *I last examined the relative factor shares of labour and profits in my Audit of Assumptions for the March 2001 Budget, HC 304, Session 2000-01 and concluded that there was a theoretical basis and supporting empirical evidence for the assumption that shares of labour income and profits are broadly constant in the medium term.*

6 *Paragraph 13, Audit of Assumptions for the Pre-Budget Report 2000, HC 959, Session 1999-2000.*

6 **Budget and Pre-Budget Report projections of equity prices against outturns**

FTSE All-Share index against forecast values



NOTE

Figure 6 shows projected equity prices for each Budget and Pre-Budget Report over the rolling review period.

Source: HM Treasury

7 **Estimates of over-prediction of forecast revenue as a result of lower than expected equity prices (£ billion)**

Type of revenue	**2000-01**	**2001-02**	**2002-03**
Corporation tax	0.4	0.5	0.3
Capital gains tax	0.0	0.1	0.0
Inheritance tax	0.1	0.1	0.1
Stamp duties	0.2	0.4	0.6
Total	0.7	1.0	1.1

NOTES

For example, the 2000-01 figures relate to the one year ahead projection made in Budget 2000 and so on. Figures may not add to totals due to rounding errors.

The full impact may be higher as in general there is a lag between the time the tax liability arises and the eventual tax payment.

Source: HM Treasury

45 While projections of equity prices are prone to forecasting error, the underlying principles are widely accepted. The International Monetary Fund's forecast for the UK, the Institute of Fiscal Studies, the United States Congressional Budget Office's macroeconomic forecast and the National Institute for Economic and Social Research[7] use an approach similar to the Treasury's. The Bank of England starts its projection on the basis of the current level of equity prices in a similar way[8] and then applies the same underlying economic theory that equities can be priced as the present discounted value of future dividends, but derives its projections from explicit views of future dividends and discount rates. The Treasury retains its preference for projections based on a rule that directly links equity prices and money GDP growth as a simple and transparent approach. Comparison of the results of the two methods shows there is little difference in predictive power and the Bank's methodology also leads to projections of future equity prices that broadly follow money GDP.

Conclusion on equity prices

46 I commented in my 1997 Pre-Budget Report that the assumption was unlikely to be valid at all times and was likely to be imprecise and quite possibly significantly so, while I said in my 2000 Pre-Budget Report that the relationship was by no means exact. These conclusions fit the rolling review period well.

47 For the future, I remain of the view that the relationship between equity prices and money GDP is likely to be imprecise and at times significantly so. But no obviously better alternative method to project equity prices is available, and there remain reasonable theoretical and practical grounds to support the continued use of the assumption as a sensible and transparent rule for the Treasury's forecasting purposes.

The consistency of price indices used in forecasting public finances and the Retail Prices Index excluding mortgage interest payments

48 The price indices used to forecast significant elements of government revenue and expenditure are the Retail Prices Index (RPI), the Rossi Index and the price deflator of Gross Domestic Product (GDP deflator). The RPI affects non-income related benefits, tax allowances and thresholds, interest payments on index-linked gilts, and specific duties. The Rossi index is used to uprate income-related benefits while the GDP deflator has an indirect effect on housing benefit.

49 The Government's target for inflation over the three year rolling review period 2000 to 2003 was defined using the Retail Prices Index excluding mortgage interest payments (RPIX). The consistency requirement for the price indicators over the same period was therefore that the projections of the price indices used to plan public expenditure should be consistent with RPIX.

50 **Figure 8** shows the path for inflation measured by RPIX, RPI and Rossi over the rolling review period.

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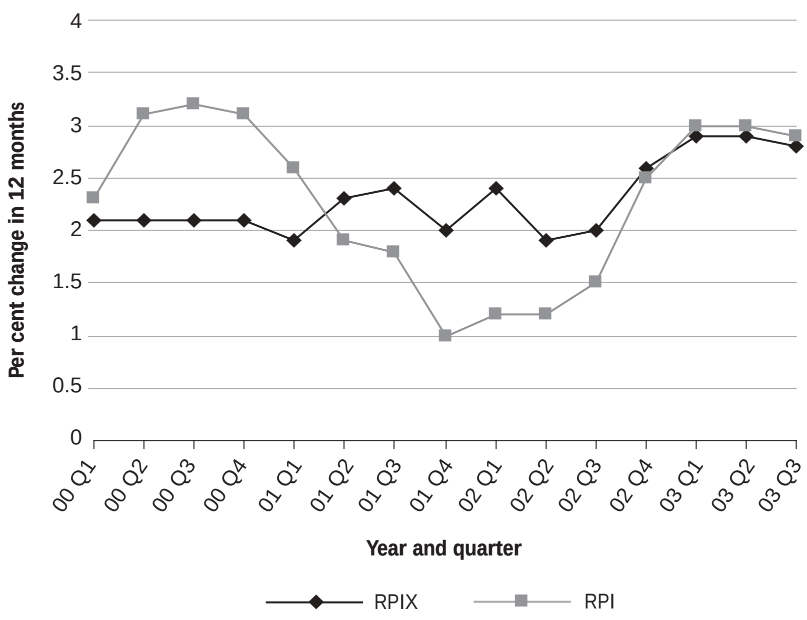
7 In its forecast for the world economy, the NIESR assumes that US equity prices grow in line with profits and nominal GDP. As equity markets move together across the world, equity price developments in the rest of the world follow those in the US, adjusted for exchange rate developments. However, if equity markets are seen as significantly over- or undervalued, NIESR allows prices to diverge from anticipated developments in profits and nominal GDP.

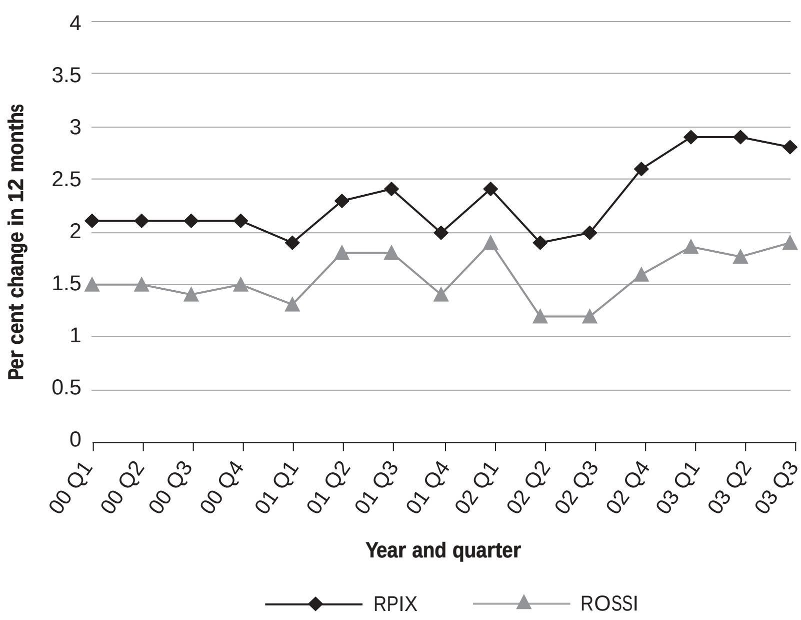
8 Average of the last 15 working days.

8 Annual RPIX, RPI and Rossi inflation

Comparison between RPI and RPIX



Comparison between ROSSI and RPIX



Source: HM Treasury

51 RPI differs from RPIX in that it includes mortgage interest payments. Figure 8 shows that RPI inflation has fluctuated around RPIX inflation over the past three years, predominantly reflecting changes in interest rates and subsequently mortgage interest payments.

52 At the start of 2000, RPI inflation rose notably above RPIX inflation, attributable to rising mortgage interest rates, combined with the abolition of mortgage interest tax relief (MIRAS) in April 2000. However, with interest rates falling rapidly from the end of 2000 through to the end of 2001, (and with the abolition of MIRAS subsequently dropping out of the annual comparison), RPI inflation fell sharply, moving below RPIX inflation from mid-2001 onwards. Since then, with mortgage rates remaining steady (and the effects of declining interest rates through late 2000 and 2001 consequently dropping out of the annual comparison), RPI inflation has converged with RPIX inflation.

53 The Rossi index is equal to RPIX excluding council tax, rent and housing depreciation costs. Overall, these components have risen by more than Rossi inflation since 2001. Housing depreciation[9] has risen particularly strongly, especially since 2002, growing at double digit rates over the last three years, due to rising house prices. As a result, as Figure 8 shows, RPIX inflation has been consistently above Rossi inflation since 2000, although following the same general path.

54 The GDP deflator is a much broader price index than RPIX, with the latter only measuring consumer prices. The GDP deflator reflects the prices of all domestically produced goods and services, and thus also includes the prices of investment goods, government services and exports, and excludes the price of UK imports.

55 In September 2003 the Office for National Statistics (ONS) introduced an "annual chain linking" methodology for calculating real GDP and its components. This method uses annually updated current price weights to measure the contribution of individual goods and services to real GDP growth[10]. This is in contrast to the previous practice of measuring real GDP using the weights in a single fixed base year, which were updated at five yearly intervals. For example, until recently, the price base was 1995.

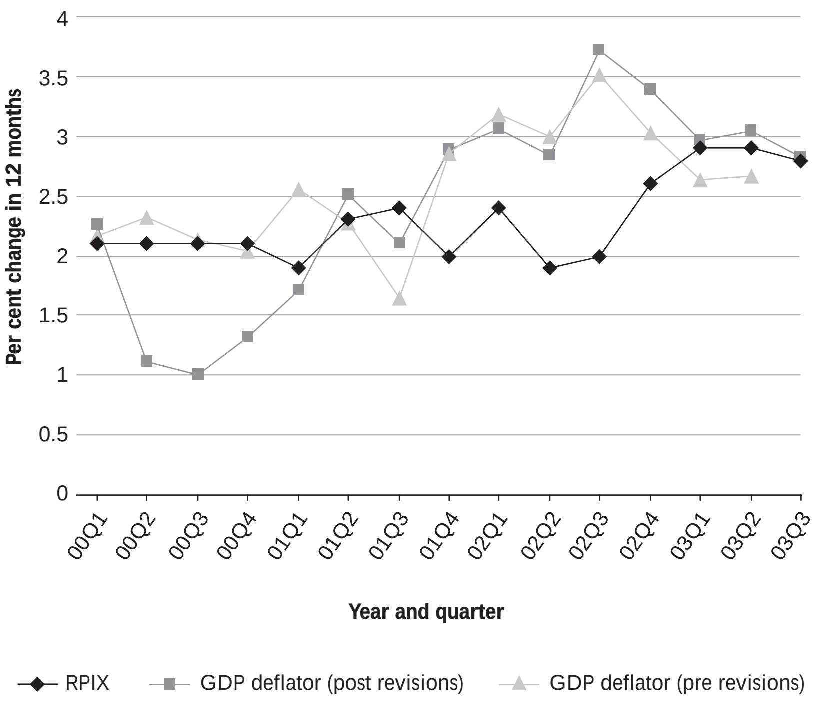
56 Annual chain linking might have been expected to reduce measured real GDP growth post 1996, as annual updating of price weights tends to reduce the weight of high-tech and other fast growing industries. This is because the relative price of goods and services produced by such industries, e.g. computers, tends to fall over time. This leads to a reduction in their weights in GDP. ONS calculations suggest that - all else equal - chain linking had a small negative impact on GDP growth estimates from 1999 through to 2001. This was more than offset by other revisions, however, resulting in higher overall real GDP growth.

57 **Figure 9** shows a comparison of the GDP deflator pre and post the revisions, together with the path of RPIX, over the rolling review period. Inflation measured by the revised GDP deflator has generally been above RPIX inflation over the last three years. The post revisions GDP deflator series incorporates a downward revision of around ¾ percentage points for 2000 as a whole, largely attributable to upward revisions to import price inflation. The rate of growth of the GDP deflator picked up by around 1 percentage point between the second quarter of 2001 and the end of 2002. This was largely driven by increases in the

9 Housing depreciation represents the expenditure that owner occupiers would find necessary to maintain their house at constant quality. It represents the notional amount needed to be put aside to cover large renovations required to rectify deterioration or obsolescence. Housing depreciation is proxied by house prices in RPI and RPIX.

10 The Effects of Annual Chain Linking on the Output Measure of GDP, A Tuke and G Reed, Economic Trends, No 575, October 2001.

9 **Comparison of RPIX and GDP deflator pre and post revisions**



Source: HM Treasury

terms of trade: although showing a volatile quarterly path, export prices showed a small decline over this period, while import prices fell markedly.

58 The Government has confirmed in the 2003 Pre-Budget Report that the inflation target of the Bank of England's Monetary Policy Committee will switch to one based on the Consumer Prices Index (CPI) rather than RPIX. The CPI was formerly known as the Harmonised Index of Consumer Prices (HICP).

59 In the light of this change, the three price indices will now be consistent with the CPI measure adopted as the measurement basis for the inflation target, rather than with RPIX. In addition, the Treasury proposes to make it explicit that consistency of price indices covers, as in the past, the projections of the public finances as a whole.

60 The price consistency requirement will therefore be stated in terms of the following convention:

- Projections of price indices used to project the public finances are consistent with the Consumer Prices Index (CPI).

61 **Figure 10** shows the forecasts of the four price indices covered by the new convention.

62 The Treasury forecasts that CPI inflation will rise to the new CPI based inflation target of 2 per cent by mid-2005. The paths of Rossi and CPI inflation are forecast to be similar, rising a little through 2004 and 2005.

63 RPI inflation is expected to increase through 2004, as expected increases in mortgage interest payments feed through, driven by market expectations of higher interest rates, more than offsetting an expected slowing in housing depreciation. RPI inflation is expected to settle at 2¾ per cent over the medium term. GDP deflator inflation is expected to fall in the short term, as import prices rise, and to move broadly in line with RPI inflation in the medium term.

10 Treasury forecast of percentage changes in CPI, RPI, Rossi and GDP deflator on the year earlier, per cent

Year	CPI	RPI	Rossi	GDP deflator
2003 Quarter 3	1½	3	2	2¾
2004 Quarter 3	1¾	3½	2	2½
2005 Quarter 3	2	3	2¼	2½
2006 Quarter 3	2	2½	2¼	2¾
2007 Quarter 3	2	2¾	2¼	2¾
2008 Quarter 3	2	2¾	2¼	2¾

Source: HM Treasury

Conclusion on price consistency

64 I have confirmed that consistent sets of price indices were used in making forecasts over the rolling review period. While there are differences between the paths of the four price indices over this period, 2000-2003, they reflect the different definitions and the fact that excluded or included components have changed at a different rate to RPIX. For the future, I have not reviewed how accurate the Treasury's price forecasts are likely to be, but there are reasons to explain the different forecast paths assumed for RPI, Rossi and the GDP deflator, and the series therefore have a consistency with each other and with the CPI now used in the definition of the inflation target.

Overall Conclusions and Recommendations

Extending the VAT Strategy

65 A reasonable and cautious approach has been adopted for estimating the revenue impact of the additional measures announced within the VAT Strategy. In view of the inevitable uncertainties, I recommend that evaluation work planned by HM Customs and Excise to establish the impact of the elements of the VAT Strategy announced in November 2002 should be extended to cover the new measures.

The underlying ratio of VAT receipts to consumers' expenditure

66 A downward trend was built into the projections of the underlying VAT ratio as a cautious approach, but in practice the ratio declined faster than assumed over the rolling review. This led to a £1.3 billion (0.7 per cent) over-estimate in that part of the revenue projections tied to the ratio over the three year rolling review period. The assumption has therefore proved not to be as cautious as the evidence suggested it would be in November 2000.

67 HM Customs and Excise is carrying out work to understand better trends in the underlying VAT ratio ahead of Budget 2004, and I will report then on the reasonableness and caution of the approach to be used for projecting the VAT ratio.

Equity Prices

68 Equity prices are very difficult to predict and the relationship between them and money GDP growth remained imprecise and was significantly so in the rolling review period.

69 For the future, I remain of the view that the relationship between equity prices and money GDP is uncertain. But no obviously better alternative method is available and there remain reasonable theoretical and practical grounds to support the continued use of the assumption as a sensible and transparent rule for the Treasury's forecasting purposes.

70 The Treasury and Bank of England regularly discuss technical issues in these areas, which I welcome and recommend should continue. Given the margins of error in projections of future equity prices, I recommend also that the Treasury publishes on a regular basis estimates of the impact of errors in equity price projections on the fiscal projections, as part of its background documentation. The Treasury has agreed with this recommendation and is publishing an analysis in the End of Year Fiscal Report alongside this year's Pre-Budget Report.

Consistency of price indicators

71 The price index series used for making projections of certain government revenues and expenditures were and remain consistent.